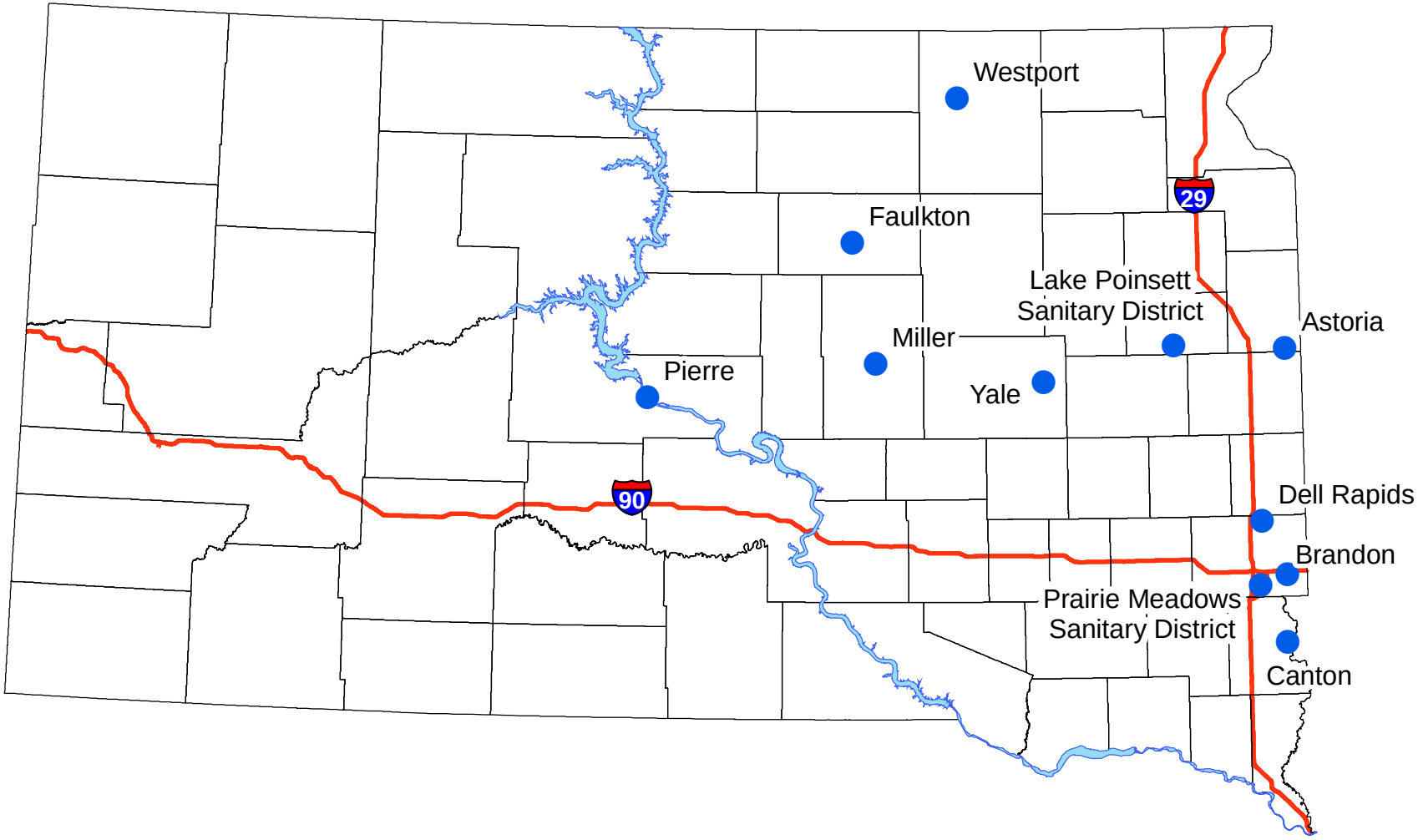
Sanitary / Storm Sewer Facilities Applications
March 2016



March 30-31 2016
Item 14

TITLE: Sanitary/Storm Sewer Facilities Funding Applications

EXPLANATION: The following applications have been received by DENR for funding consideration at this meeting. The projects are listed in priority point order as shown in the Intended Use Plan, and the points are listed in parentheses.

a. Dell Rapids (26)
b. Lake Poinsett SD (23)
c. Westport (20)
d. Pierre (18)
e. Miller (15)
f. Astoria (12)
g. Brandon (11)
h. Canton (10)
i. Dell Rapids (10)
j. Faulkton (8)
k. Prairie Meadows SD (8)
l. Yale (4)

COMPLETE APPLICATIONS: Application cover sheets and WRAP summary sheets with financial analysis have been provided as part of the board packet. Complete applications are available online and can be accessed by typing the following address in your internet browser:

http://denr.sd.gov/bwnrapps/BWNRappssssf0316.pdf

If you would like hard copies of the applications, please contact Mike Perkovich at (605) 773-4216.

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Dell Rapids

Project Title:	2016 Wastewater Treatment Facility Improvement Project
Funding Requested:	$5,758,000
Total Project Cost:	$5,758,000
Project Description:	Dell Rapids is proposing to construct a sequencing batch reactor (SBR) system on the site of existing wastewater treatment facility. The SBR system would consist of a splitter box structure, pre-treatment unit, sequencing batch reactor, UV disinfection, SCADA system, stand-by generator and equalization basin lift station. The project would also include approximately 3,300 feet of 12-, 16- and 24-inch gravity sewer and appurtenances.
Alternatives Evaluated:	The "No Action" alternative was rejected because the city has had numerous ammonia limit violations. As a result of the violations, the new surface water discharge permit issued on November 1, 2014 included a compliance schedule to meet effluent limits. The city evaluated eight alternatives for wastewater treatment in the original Facilities Plan. They included 180-day storage with aeration, Submerged Attached Growth Reactor (SAGR), 210-day storage with irrigation, mechanical treatment, regionalization with Sioux Falls, SAGR/ANSAGR system with nutrient removal and total retention ponds. The SAGR/ANSAGR system was recommended because it allowed the owner to construct the SAGR portion of the facility now to meet ammonia limits and the nutrient removal system at a later time to comply with nutrient removal requirement if necessary. Later in 2015, the city requested that a more thorough review of the mechanical treatment options be completed and compared to the SAGR/ANSAGR system that was originally selected. An amended Facilities Plan was submitted to the city that evaluated conventional activated sludge, extended aeration, trickling filters/rotating biological contactors, membrane bioreactor, sequencing batch reactor and moving bed bioreactor (MBBR). The city narrowed the evaluation to the SAGR/ANSAGR, MBBR and SBR systems. The SBR system has been selected and will be constructed in two phases. The first phase will bring the city into compliance with current

	ammonia limits and the second phase would be for nutrient removal.
Implementation Schedule:	Design of the project will begin in the summer of 2016 with construction starting in the fall of 2016 and continuing through 2017.
Service Population:	3,700
Current Domestic Rate:	$43.64 per 5,000 gallons usage

Interest Rate: 3.25% Term: 30 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Dell Rapids would have to establish a surcharge of approximately $20.70. When added to current rate of 43.64/5,000 gallons residents would be paying $64.34/5,000 gallons. However, Dell Rapids has a second funding application which will require rates of approximately $40.40/5,000 gallons to provide the required 110% coverage if no subsidy is provided on the second loan. This would bring the water rate to $61.10-$64.34/5,000 gallons.

25% Funding Subsidy:	$1,439,500 subsidy with a loan of $4,318,500.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $4,318,500 Dell Rapids would have to establish a surcharge of approximately $15.55. However, due to the second funding application Dell Rapids would have rates between $55.95-$58.79/5,000 gallons.

50% Funding Subsidy:	$2,879,000 subsidy with a loan of $2,879,000.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $2,879,000 Dell Rapids would have to establish a surcharge of approximately $10.35. However, due to the second funding application Dell Rapids would have rates between $50.75-$54.00/5,000 gallons.

75% Funding Subsidy:	$4,318,500 subsidy with a loan of $1,439,500.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $1,439,500 Dell Rapids would have to establish a surcharge of approximately $5.25. However, due to the second funding application Dell Rapids would have rates between $45.65-$48.89/5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: JIM ANDERSON

FINANCIAL REVIEW COMPLETED BY: DAVE RUHNKE

SECOG

SOUTH EASTERN COUNCIL OF GOVERNMENTS

SOUTH DAKOTA

RECEIVED
RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

December 31, 2015

Andy Bruels
SD-DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Dear Mr. Bruels:

Enclosed, please find the Sanitary / Storm Sewer Facilities Funding Application for the City of Dell Rapids 2016 Wastewater Facility Improvements project. Included with the general application are the following appendices:

Appendix A – Supplemental Signed Application Forms including the Cost and Effectiveness Certification Form, Certification of Needs Categories, and Certification Regarding Debarment, Suspension, and Other Responsibility Matters.
Appendix B – Signed Application Resolution
Appendix C – User Rate Ordinances
Appendix D – Amortization of Existing Debt
Appendix E – 2014 Financial Statements
Appendix F – 2015 Budget
Appendix G – 2016 Budget
Appendix H – Public Hearing Notice, Sign-In Sheet and Minutes
Appendix I – Facilities Plan
Appendix J – SAM Registration

Should the Department have questions or comments pertaining to this application, please contact the engineer listed in the application or me.

Sincerely,

Janice Gravning

Janice Gravning
Accountant

Enclosures

cc: City of Dell Rapids
East Dakota Water Development District

500 N. Western Ave. Suite 100 • Sioux Falls, SD 57104
Phone: 605.367.5390 • Fax: 605.367.5394
Website: www.secog.org • E-mail: janice@secog.org
Lynne Keller Forbes, Executive Director

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Dell Rapids	Proposed Funding Package
Address: PO Box 10 Dell Rapids, SD 57022	Requested Funding $5,758,000 Local Cash
Subapplicant:	Other: Other:
DUNS Number: 170381602	Other: TOTAL $5,758,000

Project Title: 2016 Wastewater Treatment Facility Improvement Project

Description:

Dell Rapids' wastewater treatment facility was built as a two cell system in 1974. In 2000, cell three was added and the depth of cell two was increased. The City was issued a new surface water discharge permit on November 1, 2014, and because the City has had multiple ammonia limit violations, the permit included a compliance schedule to meet effluent limits.

The City is proposing that a sequencing batch reactor (SBR) system be constructed on the existing wastewater treatment site to allow the City to bring the system into compliance and meet ammonia limits that will be implemented in 2017 by SD DENR. The SBR system will also meet the City's future wastewater treatment needs.

The City has a wastewater reserve fund. The City's current rate for 5,000 gallons of wastewater is $36.38. This rate will increase to $43.64 in 2016.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Scott Fiegen, Mayor Name & Title of Authorized Signatory (Typed)	Signature	12-30-15 Date

Professional Consultants

Application Prepared By: South Eastern Council of Governments

Contact Person: Janice Gravning

Mailing Address: 500 N. Western Avenue, Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 367-5390 Fax: (605) 367-5394

Email address: janice@secog.org

Consulting Engineering Firm: DGR Engineering

Contact Person: Lance Mayer, P.E.

Mailing Address: 2909 E. 57th Street, Suite 101

City, State, and Zip: Sioux Falls, SD 57108

Telephone Number: (605) 339-4157 Fax: (605) 339-4175

Email address: lmayer@dgrnet.com

Legal Counsel's Firm: Vogt Brown Merry & Hammer

Contact Person: Dean Hammer

Mailing Address: 301 E. 4th Street, Suite 1

City, State, and Zip: Dell Rapids, SD 57022

Telephone Number: (605) 428-5444 Fax: (605) 428-0107

Email address: drlaw@siouxvalley.net

Bond Counsel's Firm: Davenport, Evans, Hurwitz & Smith, LLP

Contact Person: Doug Hajek

Mailing Address: 206 W. 14th St., PO Box 1030

City, State, and Zip: Sioux Falls, SD 57101-1030

Telephone Number: (605) 336-2880 Fax: (605) 335-3639

Email address: dhajek@dehs.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$90,000					$90,000
D. Other - SECOG	$3,000					$3,000
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$327,000					$327,000
B. Project Inspection Fees	$327,000					$327,000
C. Other Testing	$104,000					$104,000
4. Construction & Improvements	$4,266,375					$4,266,375
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$5,117,375					$5,117,375
10. Contingencies	$640,625					$640,625
11. Total (Lines 9 and 10)	$5,758,000					$5,758,000
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) DENR CW-SRF Loan & Grant		$5,758,000	March 25, 2016
Other (Explain)			
Other (Explain)			
Total		$5,758,000	$5,758,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1st

Population Served Current: 3,700 2010 3,633 2000 2,980

Top three employers within 30 miles	Number of Employees	Type of Business
Sanford Health	8571	Health Care
Avera Health	6259	Health Care
John Morrell & Company	3350	Meat Processor

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2006	2008	2010	2011	2014	
Purpose	CW-02 4th Street	CW-03 12th Street Drainage	CW-04 Lift Station	CW-05 15th Street Phase 1	CW-06 15th Street Phase 2	
Security Pledged	CW Revenue	CW Revenue	CW Revenue	CW Revenue	CW Revenue	
Amount	$561,737	$1,062,000	$950,000	$344,359	$612,000	
Maturity Date (mmm/yyyy)	4/2027	1/2029	4/2030	10/2032	1/2035	
Debt Holder	BWNR	BWNR	BWNR	BWNR	BWNR	
Debt Coverage Requirement	110%	110%	110%	110%	110%	
Avg. Annual Required Payment	$38,307	$72,422	$64,874	$22,972	$40,804	
Outstanding Balance	$366,347	$777,178	$746,692	$291,063	$595,041	

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$408,330	$563,864	$490,175	$580,700	$580,700	$580,700
Surcharge Fees						
Other (Explain)			$5,916	$5,000	$5,000	$5,000
Operating Expenses						
Personal Services	($123,351)	($140,659)	($157,925)	($153,945)	($158,563)	($213,320)
Chemical, Material & Supplies	($68,817)	($66,687)	($20,300)	($32,800)	($33,784)	($162,798)
Electric & Other Utilities			($32,600)	($37,600)	($38,728)	($13,466)
Other (Explain)			($25,700)	($25,700)	($26,471)	($27,265)
Operating Net Cash	$216,162	$356,518	$259,566	$335,655	$328,154	$168,851
Nonoperating Cash Flow						
Interest Revenue	$1,035	$778	$1,199	$900	$900	$900
Transfers In (Explain)	$930,409	$1,120,487	$491,816			
Fixed Asset Purchases	($922,352)	($999,150)	($583,833)			
Transfers Out (Explain)						
Principal Debt Payments	($117,571)	($121,407)	($261,498)	($152,669)	($157,596)	($299,267)
Interest Debt Payments	($80,914)	($77,079)	($138,202)	($86,621)	($81,693)	($295,456)
Other (Explain)						
Nonoperating Net Cash	($189,393)	($76,371)	($490,518)	($238,390)	($238,389)	($593,823)
Increase (Decrease) Cash	$26,769	$280,147	($230,952)	$97,265	$89,765	($424,972)
Beginning Cash Balance	$630,313	$657,082	$937,229	$706,277	$803,542	$893,307
Ending Cash Balance	$657,082	$937,229	$706,277	$803,542	$893,307	$468,335
Restricted Balance	0	$198,486	$432,907	$272,497	$272,496	$627,930
Unrestricted Balance	$657,082	$738,743	$273,370	$531,045	$620,811	($159,595)

Additional Comments (Explanations)

2014 - Transfers in is debt proceeds, transfer from other funds and other misc
2015 - Numbers are from internally prepared financial statements and includes payment on CW-07 and transfer in from sales tax to make the loan payments.
2016 - Numbers are from 2016 budget. No provision is made for payments on CW-07 since the loan is paid from sales tax revenue.
2017 & 2018 - Assumes no increase in revenue and a 3% increase in expenses.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$36.38	$43.64	1,125	3,398 gallons
Business	$36.38	$43.64	209	8,485 gallons
Other:				
Other:				

Are fees based on usage or flat rate? usage

When is proposed fee scheduled to take effect? January 2016 (for February billing)

When did the current fee take effect? January 2013

What was the fee prior to the current rate? $33.38

Storm Sewer Projects Only: Does applicant have a separate storm water fee? n/a

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
H2Ose It	Car Wash	7%
Orchard Hills	Assisted Living/Nursing Home	5%

Appendix A

Cost and Effectiveness Certification, Certification of Needs Categories, and Certification Regarding Debarment, Suspension and Other Responsibility Matters

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	City of Dell Rapids

Project Name:	2016 Wastewater Treatment Facility Improvement Project

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: _____

Printed Name: Scott Fiegen

Title: Mayor, City of Dell Rapids

Date: 12-30-15

Project Engineer

Signature: _____

Printed Name: Lance Mayer

License #: 8028

Date: 12/18/15

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	$3,445,000
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	$2,313,000
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$5,758,000

Scott Fiegen, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-30-15

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Scott Fiegen, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-30-15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION NO. 2015-20

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Dell Rapids has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to the 2016 Waste Water Treatment Facility Project and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $5,758,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Dell Rapids, South Dakota, this 7th day of December 2015.

APPROVED:

Mayor, Scott Fiegen
City of Dell Rapids

(Seal)

Attest: _____
City Finance Officer, Claire Baartman

ORDINANCE 827

AN ORDINANCE OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, PROVIDING THAT THE REVISED ORDINANCES OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, BE AMENDED BY REVISING APPENDIX B OF THE UTILITIES RATE SCHEDULE; PROVIDING AN INCREASE TO SEWER RATES, EFFECTIVE JANUARY 21, 2015 FOR THE FEBRUARY, 2016 BILLING

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA:

Section 1. That Section (a) of Appendix B of the Utilities Rate Schedule of the Revised Ordinances of the City of Dell Rapids, South Dakota, is hereby amended to read as follows:

"(a) Effective January 21, 2016 for the February 2016 sewer billing, residential and commercial users are considered to be one (1) class of user and are assessed the following rates on a per user or per location basis:

(1) Eighteen dollars and thirty four cents ($18.34) minimum monthly charge and five dollars and six cents ($5.06) per each one thousand (1,000) gallons of water or part thereof metered to the location per month. However, the sewer charge for residential users for the June 1, July 1, August 1, September 1, October 1 and November 1 sewer billings shall be computed based upon the average sewer usage for the preceding December 1, January 1, February 1, March 1, April 1 and May 1 sewer billings."

Adopted this 21st day of December, 2015.

FOR THE GOVERNING BODY OF THE CITY
OF DELL RAPIDS, SOUTH DAKOTA

By _____
Scott Fiegen, Mayor

ATTEST:

By _____
Claire Baartman, Finance Officer

First Reading: December 7, 2015
Second Reading and Adoption: December 21, 2015
Publication:
Effective Date:

ORDINANCE 827

AN ORDINANCE OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, PROVIDING THAT THE REVISED ORDINANCES OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, BE AMENDED BY REVISING APPENDIX B OF THE UTILITIES RATE SCHEDULE; PROVIDING AN INCREASE TO SEWER RATES, EFFECTIVE JANUARY 21, 2015 FOR THE FEBRUARY, 2016 BILLING

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Adopted this 21st day of December, 2015.

FOR THE GOVERNING BODY OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA

By _____
Scott Fiegen, Mayor

ATTEST:

By _____
Claire Baartman, Finance Officer

First Reading: December 7, 2015
Second Reading and Adoption: December 21, 2015
Publication:
Effective Date:

CORRECTED ORDINANCE 763

AN ORDINANCE OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, PROVIDING THAT THE REVISED ORDINANCES OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, BE AMENDED BY REVISING APPENDIX B OF THE UTILITIES RATE SCHEDULE; PROVIDING AN INCREASE TO SEWER RATES, EFFECTIVE JANUARY 1, 2013 FOR THE FEBRUARY, 2013 BILLING

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA:

Section 1. That Section (a) of Appendix B of the Utilities Rate Schedule of the Revised Ordinances of the City of Dell Rapids, South Dakota, is hereby amended to read as follows:

"(a) Effective January 1, 2013 for the February 2013 sewer billing, residential and commercial users are considered to be one (1) class of user and are assessed the following rates on a per user or per location basis:

(1) Fifteen dollars and twenty eight cents ($15.28) minimum monthly charge and four dollars and twenty two cents ($4.22) per each one thousand (1,000) gallons of water or part thereof metered to the location per month. However, the sewer charge for residential users for the June 1, July 1, August 1, September 1, October 1 and November 1 sewer billings shall be computed based upon the average sewer usage for the preceding December 1, January 1, February 1, March 1, April 1 and May 1 sewer billings."

Adopted this 17th day of September, 2012.

FOR THE GOVERNING BODY OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA

By _____
Scott Fiegen, Mayor

ATTEST:

By _____
LeAnn Kerzman, Finance Officer

First Reading: August 6, 2012
Second Reading and Adoption: September 17, 2012
Publication:
Effective Date:

CW #2

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$561,737.00	3-31-06	04-15-2027					

References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: City of Dell Rapids –Clean Water # 2
PO Box 10
Dell Rapids, SD 57022–0010

4442

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
AS TRUSTEE FOR SOUTH DAKOTA DEPARTMENT
OF ENVIRONMENT AND NATURAL RESOURCES
PIERRE, SD 57501

Disbursement Date:
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest** Paid	Principal Paid	Remaining Balance
1	07–15–2007	9,576.78	4,564.11	5,012.67	556,724.33
2	10–15–2007	9,576.78	4,523.38	5,053.40	551,670.93
2007 TOTALS:		**19,153.56**	**9,087.49**	**10,066.07**	
3	01–15–2008	9,576.78	4,482.33	5,094.45	546,576.48
4	04–15–2008	9,576.78	4,440.93	5,135.85	541,440.63
5	07–15–2008	9,576.78	4,399.21	5,177.57	536,263.06
6	10–15–2008	9,576.78	4,357.14	5,219.64	531,043.42
2008 TOTALS:		**38,307.12**	**17,679.61**	**20,627.51**	
7	01–15–2009	9,576.78	4,314.72	5,262.06	525,781.36
8	04–15–2009 #31860	9,576.78	4,271.98	5,304.80	520,476.56
9	07–15–2009	9,576.78	4,228.87	5,347.91	515,128.65
10	10–15–2009 pd	9,576.78	4,185.42	5,391.36	509,737.29
2009 TOTALS:		**38,307.12**	**17,000.99**	**21,306.13**	
11	01–15–2010 pd	9,576.78	4,141.62	5,435.16	504,302.13
12	04–15–2010 pd	9,576.78	4,097.45	5,479.33	498,822.80
13	07–15–2010 ✓	9,576.78	4,052.94	5,523.84	493,298.96
14	10–15–2010 ✓	9,576.78	4,008.05	5,568.73	487,730.23
2010 TOTALS:		**38,307.12**	**16,300.06**	**22,007.06**	
15	01–15–2011 ✓	9,576.78	3,962.81	5,613.97	482,116.26
16	04–15–2011 ✓	9,576.78	3,917.19	5,659.59	476,456.67
17	07–15–2011 ✓	9,576.78	3,871.21	5,705.57	470,751.10
18	10–15–2011 ✓	9,576.78	3,824.86	5,751.92	464,999.18
2011 TOTALS:		**38,307.12**	**15,576.07**	**22,731.05**	
19	01–15–2012 ✓	9,576.78	3,778.11	5,798.67	459,200.51
20	04–15–2012 ✓	9,576.78	3,731.01	5,845.77	453,354.74
21	07–15–2012 ✓	9,576.78	3,683.50	5,893.28	447,461.46
22	10–15–2012 ✓	9,576.78	3,635.63	5,941.15	441,520.31
2012 TOTALS:		**38,307.12**	**14,828.25**	**23,478.87**	
23	01–15–2013 ✓	9,576.78	3,587.35	5,989.43	435,530.88
24	04–15–2013 ✓	9,576.78	3,538.69	6,038.09	429,492.79
25	07–15–2013 ✓	9,576.78	3,489.63	6,087.15	423,405.64
26	10–15–2013 ✓	9,576.78	3,440.17	6,136.61	417,269.03
2013 TOTALS:		**38,307.12**	**14,055.84**	**24,251.28**	
27	01–15–2014 ✓	9,576.78	3,390.31	6,186.47	411,082.56
28	04–15–2014 ✓	9,576.78	3,340.05	6,236.73	404,845.83
29	07–15–2014 ✓	9,576.78	3,289.37	6,287.41	398,558.42
30	10–15–2014 ✓	9,576.78	3,238.29	6,338.49	392,219.93
2014 TOTALS:		**38,307.12**	**13,258.02**	**25,049.10**	
31	01–15–2015 ✓	9,576.78	3,186.78	6,390.00	385,829.93
32	04–15–2015 ✓	9,576.78	3,134.87	6,441.91	379,388.02
33	07–15–2015 ✓	9,576.78	3,082.53	6,494.25	372,893.77
34	10–15–2015 ✓	9,576.78	3,029.76	6,547.02	366,346.75
2015 TOTALS:		**38,307.12**	**12,433.94**	**25,873.18**	
35	01–15–2016	9,576.78	2,976.57	6,600.21	359,746.54
36	04–15–2016	9,576.78	2,922.94	6,653.84	353,092.70
37	07–15–2016	9,576.78	2,868.88	6,707.90	346,384.80
38	10–15–2016	9,576.78	2,814.37	6,762.41	339,622.39

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2016 TOTALS:		**38,307.12**	**11,582.76**	**26,724.36**	
39	01-15-2017	9,576.78	2,759.44	6,817.34	332,805.05
40	04-15-2017	9,576.78	2,704.04	6,872.74	325,932.31
41	07-15-2017	9,576.78	2,648.20	6,928.58	319,003.73
42	10-15-2017	9,576.78	2,591.90	6,984.88	312,018.85
2017 TOTALS:		**38,307.12**	**10,703.58**	**27,603.54**	
43	01-15-2018	9,576.78	2,535.15	7,041.63	304,977.22
44	04-15-2018	9,576.78	2,477.94	7,098.84	297,878.38
45	07-15-2018	9,576.78	2,420.27	7,156.51	290,721.87
46	10-15-2018	9,576.78	2,362.11	7,214.67	283,507.20
2018 TOTALS:		**38,307.12**	**9,795.47**	**28,511.65**	
47	01-15-2019	9,576.78	2,303.50	7,273.28	276,233.92
48	04-15-2019	9,576.78	2,244.40	7,332.38	268,901.54
49	07-15-2019	9,576.78	2,184.82	7,391.96	261,509.58
50	10-15-2019	9,576.78	2,124.77	7,452.01	254,057.57
2019 TOTALS:		**38,307.12**	**8,857.49**	**29,449.63**	
51	01-15-2020	9,576.78	2,064.22	7,512.56	246,545.01
52	04-15-2020	9,576.78	2,003.17	7,573.61	238,971.40
53	07-15-2020	9,576.78	1,941.65	7,635.13	231,336.27
54	10-15-2020	9,576.78	1,879.60	7,697.18	223,639.09
2020 TOTALS:		**38,307.12**	**7,888.64**	**30,418.48**	
55	01-15-2021	9,576.78	1,817.07	7,759.71	215,879.38
56	04-15-2021	9,576.78	1,754.02	7,822.76	208,056.62
57	07-15-2021	9,576.78	1,690.46	7,886.32	200,170.30
58	10-15-2021	9,576.78	1,626.39	7,950.39	192,219.91
2021 TOTALS:		**38,307.12**	**6,887.94**	**31,419.18**	
59	01-15-2022	9,576.78	1,561.78	8,015.00	184,204.91
60	04-15-2022	9,576.78	1,496.67	8,080.11	176,124.80
61	07-15-2022	9,576.78	1,431.01	8,145.77	167,979.03
62	10-15-2022	9,576.78	1,364.83	8,211.95	159,767.08
2022 TOTALS:		**38,307.12**	**5,854.29**	**32,452.83**	
63	01-15-2023	9,576.78	1,298.11	8,278.67	151,488.41
64	04-15-2023	9,576.78	1,230.84	8,345.94	143,142.47
65	07-15-2023	9,576.78	1,163.03	8,413.75	134,728.72
66	10-15-2023	9,576.78	1,094.68	8,482.10	126,246.62
2023 TOTALS:		**38,307.12**	**4,786.66**	**33,520.46**	
67	01-15-2024	9,576.78	1,025.75	8,551.03	117,695.59
68	04-15-2024	9,576.78	956.28	8,620.50	109,075.09
69	07-15-2024	9,576.78	886.23	8,690.55	100,384.54
70	10-15-2024	9,576.78	815.63	8,761.15	91,623.39
2024 TOTALS:		**38,307.12**	**3,683.89**	**34,623.23**	
71	01-15-2025	9,576.78	744.44	8,832.34	82,791.05
72	04-15-2025	9,576.78	672.67	8,904.11	73,886.94
73	07-15-2025	9,576.78	600.33	8,976.45	64,910.49
74	10-15-2025	9,576.78	527.40	9,049.38	55,861.11
2025 TOTALS:		**38,307.12**	**2,544.84**	**35,762.28**	
75	01-15-2026	9,576.78	453.87	9,122.91	46,738.20
76	04-15-2026	9,576.78	379.75	9,197.03	37,541.17
77	07-15-2026	9,576.78	305.02	9,271.76	28,269.41
78	10-15-2026	9,576.78	229.69	9,347.09	18,922.32
2026 TOTALS:		**38,307.12**	**1,368.33**	**36,938.79**	
79	01-15-2027	9,576.78	153.75	9,423.03	9,499.29
80	04-15-2027	9,576.78	77.49	9,499.29	0.00
2027 TOTALS:		**19,153.56**	**231.24**	**18,922.32**	
TOTALS:		**766,142.40**	**204,405.40**	**561,737.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CW #5 12-17-07

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,062,000.00	12-03-2008	01-15-2029					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Dell Rapids Clean Water #3

12th St Drainage

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
AS TRUSTEE FOR SOUTH DAKOTA DEPARTMENT
OF ENVIRONMENT AND NATURAL RESOURCES
PIERRE, SD 57501

Disbursement Date: January 15, 2009
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	04-15-2009 pd #31868	18,105.51	8,628.75	9,476.76	1,052,523.24
2	07-15-2009 pd #32188	18,105.51	8,551.75	9,553.76	1,042,969.48
3	10-15-2009 pd	18,105.51	8,474.12	9,631.39	1,033,338.09
2009 TOTALS:		**54,316.53**	**25,654.62**	**28,661.91**	
4	01-15-2010 pd	18,105.51	8,395.88	9,709.63	1,023,628.46
5	04-15-2010 pd	18,105.51	8,316.98	9,788.53	1,013,839.93
6	07-15-2010	18,105.51	8,237.45	9,868.06	1,003,971.87
7	10-15-2010	18,105.51	8,157.27	9,948.24	994,023.63
2010 TOTALS:		**72,422.04**	**33,107.58**	**39,314.46**	
8	01-15-2011	18,105.51	8,076.44	10,029.07	983,994.56
9	04-15-2011	18,105.51	7,994.96	10,110.55	973,884.01
10	07-15-2011	18,105.51	7,912.80	10,192.71	963,691.30
11	10-15-2011	18,105.51	7,829.99	10,275.52	953,415.78
2011 TOTALS:		**72,422.04**	**31,814.19**	**40,607.85**	
12	01-15-2012	18,105.51	7,746.51	10,359.00	943,056.78
13	04-15-2012	18,105.51	7,662.33	10,443.18	932,613.60
14	07-15-2012	18,105.51	7,577.49	10,528.02	922,085.58
15	10-15-2012	18,105.51	7,491.95	10,613.56	911,472.02
2012 TOTALS:		**72,422.04**	**30,478.28**	**41,943.76**	
16	01-15-2013	18,105.51	7,405.71	10,699.80	900,772.22
17	04-15-2013	18,105.51	7,318.77	10,786.74	889,985.48
18	07-15-2013	18,105.51	7,231.13	10,874.38	879,111.10
19	10-15-2013	18,105.51	7,142.78	10,962.73	868,148.37
2013 TOTALS:		**72,422.04**	**29,098.39**	**43,323.65**	
20	01-15-2014	18,105.51	7,053.70	11,051.81	857,096.56
21	04-15-2014	18,105.51	6,963.91	11,141.60	845,954.96
22	07-15-2014	18,105.51	6,873.39	11,232.12	834,722.84
23	10-15-2014	18,105.51	6,782.12	11,323.39	823,399.45
2014 TOTALS:		**72,422.04**	**27,673.12**	**44,748.92**	
24	01-15-2015	18,105.51	6,690.12	11,415.39	811,984.06
25	04-15-2015	18,105.51	6,597.37	11,508.14	800,475.92
26	07-15-2015	18,105.51	6,503.87	11,601.64	788,874.28
27	10-15-2015	18,105.51	6,409.60	11,695.91	777,178.37
2015 TOTALS:		**72,422.04**	**26,200.96**	**46,221.08**	
28	01-15-2016	18,105.51	6,314.58	11,790.93	765,387.44
29	04-15-2016	18,105.51	6,218.77	11,886.74	753,500.70
30	07-15-2016	18,105.51	6,122.19	11,983.32	741,517.38
31	10-15-2016	18,105.51	6,024.83	12,080.68	729,436.70
2016 TOTALS:		**72,422.04**	**24,680.37**	**47,741.67**	
32	01-15-2017	18,105.51	5,926.68	12,178.83	717,257.87
33	04-15-2017	18,105.51	5,827.72	12,277.79	704,980.08
34	07-15-2017	18,105.51	5,727.96	12,377.55	692,602.53
35	10-15-2017	18,105.51	5,627.39	12,478.12	680,124.41
2017 TOTALS:		**72,422.04**	**23,109.75**	**49,312.29**	
36	01-15-2018	18,105.51	5,526.01	12,579.50	667,544.91
37	04-15-2018	18,105.51	5,423.81	12,681.70	654,863.21
38	07-15-2018	18,105.51	5,320.76	12,784.75	642,078.46
39	10-15-2018	18,105.51	5,216.89	12,888.62	629,189.84

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2018 TOTALS:		**72,422.04**	**21,487.47**	**50,934.57**	
40	01-15-2019	18,105.51	5,112.17	12,993.34	616,196.50
41	04-15-2019	18,105.51	5,006.59	13,098.92	603,097.58
42	07-15-2019	18,105.51	4,900.17	13,205.34	589,892.24
43	10-15-2019	18,105.51	4,792.87	13,312.64	576,579.60
2019 TOTALS:		**72,422.04**	**19,811.80**	**52,610.24**	
44	01-15-2020	18,105.51	4,684.71	13,420.80	563,158.80
45	04-15-2020	18,105.51	4,575.67	13,529.84	549,628.96
46	07-15-2020	18,105.51	4,465.73	13,639.78	535,989.18
47	10-15-2020	18,105.51	4,354.92	13,750.59	522,238.59
2020 TOTALS:		**72,422.04**	**18,081.03**	**54,341.01**	
48	01-15-2021	18,105.51	4,243.18	13,862.33	508,376.26
49	04-15-2021	18,105.51	4,130.56	13,974.95	494,401.31
50	07-15-2021	18,105.51	4,017.01	14,088.50	480,312.81
51	10-15-2021	18,105.51	3,902.54	14,202.97	466,109.84
2021 TOTALS:		**72,422.04**	**16,293.29**	**56,128.75**	
52	01-15-2022	18,105.51	3,787.15	14,318.36	451,791.48
53	04-15-2022	18,105.51	3,670.80	14,434.71	437,356.77
54	07-15-2022	18,105.51	3,553.53	14,551.98	422,804.79
55	10-15-2022	18,105.51	3,435.29	14,670.22	408,134.57
2022 TOTALS:		**72,422.04**	**14,446.77**	**57,975.27**	
56	01-15-2023	18,105.51	3,316.09	14,789.42	393,345.15
57	04-15-2023	18,105.51	3,195.93	14,909.58	378,435.57
58	07-15-2023	18,105.51	3,074.79	15,030.72	363,404.85
59	10-15-2023	18,105.51	2,952.66	15,152.85	348,252.00
2023 TOTALS:		**72,422.04**	**12,539.47**	**59,882.57**	
60	01-15-2024	18,105.51	2,829.55	15,275.96	332,976.04
61	04-15-2024	18,105.51	2,705.43	15,400.08	317,575.96
62	07-15-2024	18,105.51	2,580.30	15,525.21	302,050.75
63	10-15-2024	18,105.51	2,454.17	15,651.34	286,399.41
2024 TOTALS:		**72,422.04**	**10,569.45**	**61,852.59**	
64	01-15-2025	18,105.51	2,326.99	15,778.52	270,620.89
65	04-15-2025	18,105.51	2,198.80	15,906.71	254,714.18
66	07-15-2025	18,105.51	2,069.55	16,035.96	238,678.22
67	10-15-2025	18,105.51	1,939.26	16,166.25	222,511.97
2025 TOTALS:		**72,422.04**	**8,534.60**	**63,887.44**	
68	01-15-2026	18,105.51	1,807.91	16,297.60	206,214.37
69	04-15-2026	18,105.51	1,675.49	16,430.02	189,784.35
70	07-15-2026	18,105.51	1,542.00	16,563.51	173,220.84
71	10-15-2026	18,105.51	1,407.42	16,698.09	156,522.75
2026 TOTALS:		**72,422.04**	**6,432.82**	**65,989.22**	
72	01-15-2027	18,105.51	1,271.75	16,833.76	139,688.99
73	04-15-2027	18,105.51	1,134.97	16,970.54	122,718.45
74	07-15-2027	18,105.51	997.09	17,108.42	105,610.03
75	10-15-2027	18,105.51	858.08	17,247.43	88,362.60
2027 TOTALS:		**72,422.04**	**4,261.89**	**68,160.15**	
76	01-15-2028	18,105.51	717.94	17,387.57	70,975.03
77	04-15-2028	18,105.51	576.68	17,528.83	53,446.20
78	07-15-2028	18,105.51	434.25	17,671.26	35,774.94
79	10-15-2028	18,105.51	290.67	17,814.84	17,960.10
2028 TOTALS:		**72,422.04**	**2,019.54**	**70,402.50**	
80	01-15-2029	18,105.51	145.41	17,960.10	0.00
2029 TOTALS:		**18,105.51**	**145.41**	**17,960.10**	
TOTALS:		**1,448,440.80**	**386,440.80**	**1,062,000.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CW #4
11-14-08

AMORTIZATION SCHEDULE

Terms

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$950,000.00		04-15-2030					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Dell Rapids - Clean Water #4

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
.
.
PIERRE, SD

Lift Station

Disbursement Date:
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 ** 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest Paid	Principal Paid	Remaining Balance
1	07-15-2010	16,196.08	7,718.75	8,477.33	941,522.67
2	10-15-2010	16,196.08	7,649.87	8,546.21	932,976.46
2010 TOTALS:		**32,392.16**	**15,368.62**	**17,023.54**	
3	01-15-2011	16,196.08	7,580.43	8,615.65	924,360.81
4	04-15-2011	16,196.08	7,510.43	8,685.65	915,675.16
5	07-15-2011	16,196.08	7,439.86	8,756.22	906,918.94
6	10-15-2011	16,196.08	7,368.72	8,827.36	898,091.58
2011 TOTALS:		**64,784.32**	**29,899.44**	**34,884.88**	
7	01-15-2012	16,196.08	7,296.99	8,899.09	889,192.49
8	04-15-2012	16,196.08	7,224.69	8,971.39	880,221.10
9	07-15-2012	16,196.08	7,151.80	9,044.28	871,176.82
10	10-15-2012	16,196.08	7,078.31	9,117.77	862,059.05
2012 TOTALS:		**64,784.32**	**28,751.79**	**36,032.53**	
11	01-15-2013	16,196.08	7,004.23	9,191.85	852,867.20
12	04-15-2013	16,196.08	6,929.55	9,266.53	843,600.67
13	07-15-2013	16,196.08	6,854.25	9,341.83	834,258.84
14	10-15-2013	16,196.08	6,778.35	9,417.73	824,841.11
2013 TOTALS:		**64,784.32**	**27,566.38**	**37,217.94**	
15	01-15-2014	16,196.08	6,701.84	9,494.24	815,346.87
16	04-15-2014	16,196.08	6,624.69	9,571.39	805,775.48
17	07-15-2014	16,196.08	6,546.93	9,649.15	796,126.33
18	10-15-2014	16,196.08	6,468.52	9,727.56	786,398.77
2014 TOTALS:		**64,784.32**	**26,341.98**	**38,442.34**	
19	01-15-2015	16,196.08	6,389.49	9,806.59	776,592.18
20	04-15-2015	16,196.08	6,309.82	9,886.26	766,705.92
21	07-15-2015	16,196.08	6,229.48	9,966.60	756,739.32
22	10-15-2015	16,196.08	6,148.51	10,047.57	746,691.75
2015 TOTALS:		**64,784.32**	**25,077.30**	**39,707.02**	
23	01-15-2016	16,196.08	6,066.87	10,129.21	736,562.54
24	04-15-2016	16,196.08	5,984.57	10,211.51	726,351.03
25	07-15-2016	16,196.08	5,901.60	10,294.48	716,056.55
26	10-15-2016	16,196.08	5,817.96	10,378.12	705,678.43
2016 TOTALS:		**64,784.32**	**23,771.00**	**41,013.32**	
27	01-15-2017	16,196.08	5,733.64	10,462.44	695,215.99
28	04-15-2017	16,196.08	5,648.63	10,547.45	684,668.54
29	07-15-2017	16,196.08	5,562.93	10,633.15	674,035.39
30	10-15-2017	16,196.08	5,476.54	10,719.54	663,315.85
2017 TOTALS:		**64,784.32**	**22,421.74**	**42,362.58**	
31	01-15-2018	16,196.08	5,389.44	10,806.64	652,509.21
32	04-15-2018	16,196.08	5,301.64	10,894.44	641,614.77
33	07-15-2018	16,196.08	5,213.12	10,982.96	630,631.81
34	10-15-2018	16,196.08	5,123.88	11,072.20	619,559.61
2018 TOTALS:		**64,784.32**	**21,028.08**	**43,756.24**	
35	01-15-2019	16,196.08	5,033.92	11,162.16	608,397.45
36	04-15-2019	16,196.08	4,943.23	11,252.85	597,144.60
37	07-15-2019	16,196.08	4,851.80	11,344.28	585,800.32
38	10-15-2019	16,196.08	4,759.63	11,436.45	574,363.87

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2019 TOTALS:		**64,784.32**	**19,588.58**	**45,195.74**	
39	01-15-2020	16,196.08	4,666.70	11,529.38	562,834.49
40	04-15-2020	16,196.08	4,573.03	11,623.05	551,211.44
41	07-15-2020	16,196.08	4,478.60	11,717.48	539,493.96
42	10-15-2020	16,196.08	4,383.39	11,812.69	527,681.27
2020 TOTALS:		**64,784.32**	**18,101.72**	**46,682.60**	
43	01-15-2021	16,196.08	4,287.41	11,908.67	515,772.60
44	04-15-2021	16,196.08	4,190.65	12,005.43	503,767.17
45	07-15-2021	16,196.08	4,093.11	12,102.97	491,664.20
46	10-15-2021	16,196.08	3,994.77	12,201.31	479,462.89
2021 TOTALS:		**64,784.32**	**16,565.94**	**48,218.38**	
47	01-15-2022	16,196.08	3,895.63	12,300.45	467,162.44
48	04-15-2022	16,196.08	3,795.70	12,400.38	454,762.06
49	07-15-2022	16,196.08	3,694.94	12,501.14	442,260.92
50	10-15-2022	16,196.08	3,593.37	12,602.71	429,658.21
2022 TOTALS:		**64,784.32**	**14,979.64**	**49,804.68**	
51	01-15-2023	16,196.08	3,490.97	12,705.11	416,953.10
52	04-15-2023	16,196.08	3,387.75	12,808.33	404,144.77
53	07-15-2023	16,196.08	3,283.67	12,912.41	391,232.36
54	10-15-2023	16,196.08	3,178.77	13,017.31	378,215.05
2023 TOTALS:		**64,784.32**	**13,341.16**	**51,443.16**	
55	01-15-2024	16,196.08	3,072.99	13,123.09	365,091.96
56	04-15-2024	16,196.08	2,966.38	13,229.70	351,862.26
57	07-15-2024	16,196.08	2,858.88	13,337.20	338,525.06
58	10-15-2024	16,196.08	2,750.51	13,445.57	325,079.49
2024 TOTALS:		**64,784.32**	**11,648.76**	**53,135.56**	
59	01-15-2025	16,196.08	2,641.27	13,554.81	311,524.68
60	04-15-2025	16,196.08	2,531.14	13,664.94	297,859.74
61	07-15-2025	16,196.08	2,420.11	13,775.97	284,083.77
62	10-15-2025	16,196.08	2,308.18	13,887.90	270,195.87
2025 TOTALS:		**64,784.32**	**9,900.70**	**54,883.62**	
63	01-15-2026	16,196.08	2,195.35	14,000.73	256,195.14
64	04-15-2026	16,196.08	2,081.58	14,114.50	242,080.64
65	07-15-2026	16,196.08	1,966.91	14,229.17	227,851.47
66	10-15-2026	16,196.08	1,851.29	14,344.79	213,506.68
2026 TOTALS:		**64,784.32**	**8,095.13**	**56,689.19**	
67	01-15-2027	16,196.08	1,734.74	14,461.34	199,045.34
68	04-15-2027	16,196.08	1,617.24	14,578.84	184,466.50
69	07-15-2027	16,196.08	1,498.79	14,697.29	169,769.21
70	10-15-2027	16,196.08	1,379.38	14,816.70	154,952.51
2027 TOTALS:		**64,784.32**	**6,230.15**	**58,554.17**	
71	01-15-2028	16,196.08	1,258.99	14,937.09	140,015.42
72	04-15-2028	16,196.08	1,137.62	15,058.46	124,956.96
73	07-15-2028	16,196.08	1,015.28	15,180.80	109,776.16
74	10-15-2028	16,196.08	891.93	15,304.15	94,472.01
2028 TOTALS:		**64,784.32**	**4,303.82**	**60,480.50**	
75	01-15-2029	16,196.08	767.59	15,428.49	79,043.52
76	04-15-2029	16,196.08	642.22	15,553.86	63,489.66
77	07-15-2029	16,196.08	515.86	15,680.22	47,809.44
78	10-15-2029	16,196.08	388.45	15,807.63	32,001.81
2029 TOTALS:		**64,784.32**	**2,314.12**	**62,470.20**	
79	01-15-2030	16,196.08	260.01	15,936.07	16,065.74
80	04-15-2030	16,196.08	130.34	16,065.74	0.00
2030 TOTALS:		**32,392.16**	**390.35**	**32,001.81**	
TOTALS:		**1,295,686.40**	**345,686.40**	**950,000.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

CW #5

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$344,550.00	4-15-11	10-15-2032					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Dell Rapids - Clean Water 5
Total Advances $742,564.00
Principal Forgiveness $398,014.00
Principal Payments $00.00

15th St - Phase I

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
PIERRE, SD
604-4325-44200 604-4325-44100

Disbursement Date:
Interest Rate: 3.000

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest ** Paid	Principal Paid	Remaining Balance
1	01-15-2013	5,743.03	2,584.12	3,158.91	341,391.09
2	04-15-2013	5,743.03	2,560.43	3,182.60	338,208.49
3	07-15-2013	5,743.03	2,536.57	3,206.46	335,002.03
4	10-15-2013	5,743.03	2,512.51	3,230.52	331,771.51
2013 TOTALS:		**22,972.12**	**10,193.63**	**12,778.49**	
5	01-15-2014	5,743.03	2,488.29	3,254.74	328,516.77
6	04-15-2014	5,743.03	2,463.87	3,279.16	325,237.61
7	07-15-2014	5,743.03	2,439.29	3,303.74	321,933.87
8	10-15-2014	5,743.03	2,414.50	3,328.53	318,605.34
2014 TOTALS:		**22,972.12**	**9,805.95**	**13,166.17**	
9	01-15-2015	5,743.03	2,389.54	3,353.49	315,251.85
10	04-15-2015	5,743.03	2,364.39	3,378.64	311,873.21
11	07-15-2015	5,743.03	2,339.05	3,403.98	308,469.23
12	10-15-2015	5,743.03	2,313.52	3,429.51	305,039.72
2015 TOTALS:		**22,972.12**	**9,406.50**	**13,565.62**	
13	01-15-2016	5,743.03	2,287.80	3,455.23	301,584.49
14	04-15-2016	5,743.03	2,261.88	3,481.15	298,103.34
15	07-15-2016	5,743.03	2,235.77	3,507.26	294,596.08
16	10-15-2016	5,743.03	2,209.47	3,533.56	291,062.52
2016 TOTALS:		**22,972.12**	**8,994.92**	**13,977.20**	
17	01-15-2017	5,743.03	2,182.97	3,560.06	287,502.46
18	04-15-2017	5,743.03	2,156.27	3,586.76	283,915.70
19	07-15-2017	5,743.03	2,129.37	3,613.66	280,302.04
20	10-15-2017	5,743.03	2,102.27	3,640.76	276,661.28
2017 TOTALS:		**22,972.12**	**8,570.88**	**14,401.24**	
21	01-15-2018	5,743.03	2,074.95	3,668.08	272,993.20
22	04-15-2018	5,743.03	2,047.45	3,695.58	269,297.62
23	07-15-2018	5,743.03	2,019.74	3,723.29	265,574.33
24	10-15-2018	5,743.03	1,991.80	3,751.23	261,823.10
2018 TOTALS:		**22,972.12**	**8,133.94**	**14,838.18**	
25	01-15-2019	5,743.03	1,963.68	3,779.35	258,043.75
26	04-15-2019	5,743.03	1,935.32	3,807.71	254,236.04
27	07-15-2019	5,743.03	1,906.78	3,836.25	250,399.79
28	10-15-2019	5,743.03	1,877.99	3,865.04	246,534.75
2019 TOTALS:		**22,972.12**	**7,683.77**	**15,288.35**	
29	01-15-2020	5,743.03	1,849.01	3,894.02	242,640.73
30	04-15-2020	5,743.03	1,819.81	3,923.22	238,717.51
31	07-15-2020	5,743.03	1,790.38	3,952.65	234,764.86
32	10-15-2020	5,743.03	1,760.74	3,982.29	230,782.57
2020 TOTALS:		**22,972.12**	**7,219.94**	**15,752.18**	
33	01-15-2021	5,743.03	1,730.87	4,012.16	226,770.41
34	04-15-2021	5,743.03	1,700.77	4,042.26	222,728.15
35	07-15-2021	5,743.03	1,670.47	4,072.56	218,655.59
36	10-15-2021	5,743.03	1,639.91	4,103.12	214,552.47
2021 TOTALS:		**22,972.12**	**6,742.02**	**16,230.10**	
37	01-15-2022	5,743.03	1,609.15	4,133.88	210,418.59
38	04-15-2022	5,743.03	1,578.14	4,164.89	206,253.70

** INTEREST PAID also includes Admin Surcharge amts

AMORTIZATION SCHEDULE
(Continued)

39	07-15-2022	5,743.03	1,546.90	4,196.13	202,057.57
40	10-15-2022	5,743.03	1,515.43	4,227.60	197,829.97
2022 TOTALS:		**22,972.12**	**6,249.62**	**16,722.50**	
41	01-15-2023	5,743.03	1,483.72	4,259.31	193,570.66
42	04-15-2023	5,743.03	1,451.78	4,291.25	189,279.41
43	07-15-2023	5,743.03	1,419.60	4,323.43	184,955.98
44	10-15-2023	5,743.03	1,387.17	4,355.86	180,600.12
2023 TOTALS:		**22,972.12**	**5,742.27**	**17,229.85**	
45	01-15-2024	5,743.03	1,354.50	4,388.53	176,211.59
46	04-15-2024	5,743.03	1,321.59	4,421.44	171,790.15
47	07-15-2024	5,743.03	1,288.42	4,454.61	167,335.54
48	10-15-2024	5,743.03	1,255.02	4,488.01	162,847.53
2024 TOTALS:		**22,972.12**	**5,219.53**	**17,752.59**	
49	01-15-2025	5,743.03	1,221.36	4,521.67	158,325.86
50	04-15-2025	5,743.03	1,187.44	4,555.59	153,770.27
51	07-15-2025	5,743.03	1,153.28	4,589.75	149,180.52
52	10-15-2025	5,743.03	1,118.85	4,624.18	144,556.34
2025 TOTALS:		**22,972.12**	**4,680.93**	**18,291.19**	
53	01-15-2026	5,743.03	1,084.17	4,658.86	139,897.48
54	04-15-2026	5,743.03	1,049.24	4,693.79	135,203.69
55	07-15-2026	5,743.03	1,014.02	4,729.01	130,474.68
56	10-15-2026	5,743.03	978.56	4,764.47	125,710.21
2026 TOTALS:		**22,972.12**	**4,125.99**	**18,846.13**	
57	01-15-2027	5,743.03	942.83	4,800.20	120,910.01
58	04-15-2027	5,743.03	906.83	4,836.20	116,073.81
59	07-15-2027	5,743.03	870.55	4,872.48	111,201.33
60	10-15-2027	5,743.03	834.01	4,909.02	106,292.31
2027 TOTALS:		**22,972.12**	**3,554.22**	**19,417.90**	
61	01-15-2028	5,743.03	797.19	4,945.84	101,346.47
62	04-15-2028	5,743.03	760.10	4,982.93	96,363.54
63	07-15-2028	5,743.03	722.73	5,020.30	91,343.24
64	10-15-2028	5,743.03	685.07	5,057.96	86,285.28
2028 TOTALS:		**22,972.12**	**2,965.09**	**20,007.03**	
65	01-15-2029	5,743.03	647.14	5,095.89	81,189.39
66	04-15-2029	5,743.03	608.92	5,134.11	76,055.28
67	07-15-2029	5,743.03	570.42	5,172.61	70,882.67
68	10-15-2029	5,743.03	531.62	5,211.41	65,671.26
2029 TOTALS:		**22,972.12**	**2,358.10**	**20,614.02**	
69	01-15-2030	5,743.03	492.53	5,250.50	60,420.76
70	04-15-2030	5,743.03	453.16	5,289.87	55,130.89
71	07-15-2030	5,743.03	413.48	5,329.55	49,801.34
72	10-15-2030	5,743.03	373.51	5,369.52	44,431.82
2030 TOTALS:		**22,972.12**	**1,732.68**	**21,239.44**	
73	01-15-2031	5,743.03	333.24	5,409.79	39,022.03
74	04-15-2031	5,743.03	292.66	5,450.37	33,571.66
75	07-15-2031	5,743.03	251.79	5,491.24	28,080.42
76	10-15-2031	5,743.03	210.60	5,532.43	22,547.99
2031 TOTALS:		**22,972.12**	**1,088.29**	**21,883.83**	
77	01-15-2032	5,743.03	169.11	5,573.92	16,974.07
78	04-15-2032	5,743.03	127.31	5,615.72	11,358.35
79	07-15-2032	5,743.03	85.18	5,657.85	5,700.50
80	10-15-2032	5,743.03	42.53	5,700.50	0.00
2032 TOTALS:		**22,972.12**	**424.13**	**22,547.99**	
TOTALS:		**459,442.40**	**114,892.40**	**344,550.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CW-06

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$612,000.00	2/5/13	01-15-2035					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "****" has been omitted due to text length limitations.

Borrower: Dell Rapid - Clean Water 6

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
.
.
PIERRE, SD

Principal Advance:	$612,000.00
Amount Financed:	$612,000.00
Finance Charge:	$204,075.72
APR:	3.0000%
Total Principal:	$612,000.00
Total Interest:	$204,075.72
Total of Payments:	$816,075.72

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Apr 15, 2015	Quarterly	79	$10,200.96
Regular Payment	Jan 15, 2035	Quarterly	1	$10,199.88

* Interest Payment also includes Admin Surcharge amounts

CW #6

604-4325-4

604-4325-4

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
Jan 15, 2015	Beginning Balance					612,000.00
Apr 15, 2015	Regular Payment	10,200.96	10,200.96	5,610.95	4,590.01	606,389.05
Jul 15, 2015	Regular Payment	10,200.96	10,200.96	5,653.04	4,547.92	600,736.01
Oct 15, 2015	Regular Payment	10,200.96	10,200.96	5,695.43	4,505.53	595,040.58
2015 Totals		**30,602.88**	**30,602.88**	**16,959.42**	**13,643.46**	
Jan 15, 2016	Regular Payment	10,200.96	10,200.96	5,738.15	4,462.81	589,302.43
Apr 15, 2016	Regular Payment	10,200.96	10,200.96	5,781.19	4,419.77	583,521.24
Jul 15, 2016	Regular Payment	10,200.96	10,200.96	5,824.55	4,376.41	577,696.69
Oct 15, 2016	Regular Payment	10,200.96	10,200.96	5,868.23	4,332.73	571,828.46
2016 Totals		**40,803.84**	**40,803.84**	**23,212.12**	**17,591.72**	
Jan 15, 2017	Regular Payment	10,200.96	10,200.96	5,912.24	4,288.72	565,916.22
Apr 15, 2017	Regular Payment	10,200.96	10,200.96	5,956.58	4,244.38	559,959.64
Jul 15, 2017	Regular Payment	10,200.96	10,200.96	6,001.26	4,199.70	553,958.38
Oct 15, 2017	Regular Payment	10,200.96	10,200.96	6,046.27	4,154.69	547,912.11
2017 Totals		**40,803.84**	**40,803.84**	**23,916.35**	**16,887.49**	
Jan 15, 2018	Regular Payment	10,200.96	10,200.96	6,091.61	4,109.35	541,820.50
Apr 15, 2018	Regular Payment	10,200.96	10,200.96	6,137.30	4,063.66	535,683.20
Jul 15, 2018	Regular Payment	10,200.96	10,200.96	6,183.33	4,017.63	529,499.87
Oct 15, 2018	Regular Payment	10,200.96	10,200.96	6,229.71	3,971.25	523,270.16
2018 Totals		**40,803.84**	**40,803.84**	**24,641.95**	**16,161.89**	
Jan 15, 2019	Regular Payment	10,200.96	10,200.96	6,276.43	3,924.53	516,993.73
Apr 15, 2019	Regular Payment	10,200.96	10,200.96	6,323.50	3,877.46	510,670.23
Jul 15, 2019	Regular Payment	10,200.96	10,200.96	6,370.93	3,830.03	504,299.30
Oct 15, 2019	Regular Payment	10,200.96	10,200.96	6,418.71	3,782.25	497,880.59
2019 Totals		**40,803.84**	**40,803.84**	**25,389.57**	**15,414.27**	
Jan 15, 2020	Regular Payment	10,200.96	10,200.96	6,466.85	3,734.11	491,413.74
Apr 15, 2020	Regular Payment	10,200.96	10,200.96	6,515.35	3,685.61	484,898.39
Jul 15, 2020	Regular Payment	10,200.96	10,200.96	6,564.22	3,636.74	478,334.17
Oct 15, 2020	Regular Payment	10,200.96	10,200.96	6,613.45	3,587.51	471,720.72
2020 Totals		**40,803.84**	**40,803.84**	**26,159.87**	**14,643.97**	
Jan 15, 2021	Regular Payment	10,200.96	10,200.96	6,663.05	3,537.91	465,057.67
Apr 15, 2021	Regular Payment	10,200.96	10,200.96	6,713.02	3,487.94	458,344.65
Jul 15, 2021	Regular Payment	10,200.96	10,200.96	6,763.37	3,437.59	451,581.28
Oct 15, 2021	Regular Payment	10,200.96	10,200.96	6,814.10	3,386.86	444,767.18
2021 Totals		**40,803.84**	**40,803.84**	**26,953.54**	**13,850.30**	
Jan 15, 2022	Regular Payment	10,200.96	10,200.96	6,865.20	3,335.76	437,901.98
Apr 15, 2022	Regular Payment	10,200.96	10,200.96	6,916.69	3,284.27	430,985.29
Jul 15, 2022	Regular Payment	10,200.96	10,200.96	6,968.57	3,232.39	424,016.72
Oct 15, 2022	Regular Payment	10,200.96	10,200.96	7,020.83	3,180.13	416,995.89
2022 Totals		**40,803.84**	**40,803.84**	**27,771.29**	**13,032.55**	
Jan 15, 2023	Regular Payment	10,200.96	10,200.96	7,073.49	3,127.47	409,922.40

Apr 15, 2023	Regular Payment	10,200.96	10,200.96	7,126.54	3,074.42	402,795.86
Jul 15, 2023	Regular Payment	10,200.96	10,200.96	7,179.99	3,020.97	395,615.87
Oct 15, 2023	Regular Payment	10,200.96	10,200.96	7,233.84	2,967.12	388,382.03
2023 Totals		**40,803.84**	**40,803.84**	**28,613.86**	**12,189.98**	
Jan 15, 2024	Regular Payment	10,200.96	10,200.96	7,288.09	2,912.87	381,093.94
Apr 15, 2024	Regular Payment	10,200.96	10,200.96	7,342.75	2,858.21	373,751.19
Jul 15, 2024	Regular Payment	10,200.96	10,200.96	7,397.82	2,803.14	366,353.37
Oct 15, 2024	Regular Payment	10,200.96	10,200.96	7,453.30	2,747.66	358,900.07
2024 Totals		**40,803.84**	**40,803.84**	**29,481.96**	**11,321.88**	
Jan 15, 2025	Regular Payment	10,200.96	10,200.96	7,509.20	2,691.76	351,390.87
Apr 15, 2025	Regular Payment	10,200.96	10,200.96	7,565.52	2,635.44	343,825.35
Jul 15, 2025	Regular Payment	10,200.96	10,200.96	7,622.26	2,578.70	336,203.09
Oct 15, 2025	Regular Payment	10,200.96	10,200.96	7,679.43	2,521.53	328,523.66
2025 Totals		**40,803.84**	**40,803.84**	**30,376.41**	**10,427.43**	
Jan 15, 2026	Regular Payment	10,200.96	10,200.96	7,737.03	2,463.93	320,786.63
Apr 15, 2026	Regular Payment	10,200.96	10,200.96	7,795.06	2,405.90	312,991.57
Jul 15, 2026	Regular Payment	10,200.96	10,200.96	7,853.52	2,347.44	305,138.05
Oct 15, 2026	Regular Payment	10,200.96	10,200.96	7,912.42	2,288.54	297,225.63
2026 Totals		**40,803.84**	**40,803.84**	**31,298.03**	**9,505.81**	
Jan 15, 2027	Regular Payment	10,200.96	10,200.96	7,971.76	2,229.20	289,253.87
Apr 15, 2027	Regular Payment	10,200.96	10,200.96	8,031.55	2,169.41	281,222.32
Jul 15, 2027	Regular Payment	10,200.96	10,200.96	8,091.79	2,109.17	273,130.53
Oct 15, 2027	Regular Payment	10,200.96	10,200.96	8,152.48	2,048.48	264,978.05
2027 Totals		**40,803.84**	**40,803.84**	**32,247.58**	**8,556.26**	
Jan 15, 2028	Regular Payment	10,200.96	10,200.96	8,213.62	1,987.34	256,764.43
Apr 15, 2028	Regular Payment	10,200.96	10,200.96	8,275.22	1,925.74	248,489.21
Jul 15, 2028	Regular Payment	10,200.96	10,200.96	8,337.29	1,863.67	240,151.92
Oct 15, 2028	Regular Payment	10,200.96	10,200.96	8,399.82	1,801.14	231,752.10
2028 Totals		**40,803.84**	**40,803.84**	**33,225.95**	**7,577.89**	
Jan 15, 2029	Regular Payment	10,200.96	10,200.96	8,462.81	1,738.15	223,289.29
Apr 15, 2029	Regular Payment	10,200.96	10,200.96	8,526.29	1,674.67	214,763.00
Jul 15, 2029	Regular Payment	10,200.96	10,200.96	8,590.23	1,610.73	206,172.77
Oct 15, 2029	Regular Payment	10,200.96	10,200.96	8,654.66	1,546.30	197,518.11
2029 Totals		**40,803.84**	**40,803.84**	**34,233.99**	**6,569.85**	
Jan 15, 2030	Regular Payment	10,200.96	10,200.96	8,719.57	1,481.39	188,798.54
Apr 15, 2030	Regular Payment	10,200.96	10,200.96	8,784.97	1,415.99	180,013.57
Jul 15, 2030	Regular Payment	10,200.96	10,200.96	8,850.85	1,350.11	171,162.72
Oct 15, 2030	Regular Payment	10,200.96	10,200.96	8,917.23	1,283.73	162,245.49
2030 Totals		**40,803.84**	**40,803.84**	**35,272.62**	**5,531.22**	
Jan 15, 2031	Regular Payment	10,200.96	10,200.96	8,984.11	1,216.85	153,261.38
Apr 15, 2031	Regular Payment	10,200.96	10,200.96	9,051.49	1,149.47	144,209.89
Jul 15, 2031	Regular Payment	10,200.96	10,200.96	9,119.38	1,081.58	135,090.51

Oct 15, 2031	Regular Payment	10,200.96	10,200.96	9,187.78	1,013.18	125,902.73
2031 Totals		**40,803.84**	**40,803.84**	**36,342.76**	**4,461.08**	
Jan 15, 2032	Regular Payment	10,200.96	10,200.96	9,256.68	944.28	116,646.05
Apr 15, 2032	Regular Payment	10,200.96	10,200.96	9,326.11	874.85	107,319.94
Jul 15, 2032	Regular Payment	10,200.96	10,200.96	9,396.06	804.90	97,923.88
Oct 15, 2032	Regular Payment	10,200.96	10,200.96	9,466.53	734.43	88,457.35
2032 Totals		**40,803.84**	**40,803.84**	**37,445.38**	**3,358.46**	
Jan 15, 2033	Regular Payment	10,200.96	10,200.96	9,537.52	663.44	78,919.83
Apr 15, 2033	Regular Payment	10,200.96	10,200.96	9,609.06	591.90	69,310.77
Jul 15, 2033	Regular Payment	10,200.96	10,200.96	9,681.12	519.84	59,629.65
Oct 15, 2033	Regular Payment	10,200.96	10,200.96	9,753.73	447.23	49,875.92
2033 Totals		**40,803.84**	**40,803.84**	**38,581.43**	**2,222.41**	
Jan 15, 2034	Regular Payment	10,200.96	10,200.96	9,826.89	374.07	40,049.03
Apr 15, 2034	Regular Payment	10,200.96	10,200.96	9,900.59	300.37	30,148.44
Jul 15, 2034	Regular Payment	10,200.96	10,200.96	9,974.84	226.12	20,173.60
Oct 15, 2034	Regular Payment	10,200.96	10,200.96	10,049.65	151.31	10,123.95
2034 Totals		**40,803.84**	**40,803.84**	**39,751.97**	**1,051.87**	
Jan 15, 2035	Regular Payment	10,199.88	10,199.88	10,123.95	75.93	
2035 Totals		**10,199.88**	**10,199.88**	**10,123.95**	**75.93**	
Grand Total		**816,075.72**	**816,075.72**	**612,000.00**	**204,075.72**	

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Primary Government		
	Governmental Activities	Business-Type Activities	Total
ASSETS:			
Cash and Cash Equivalents	$ 3,020,308	$ 2,272,095	$ 5,292,403
Receivables	303,231	347,501	650,732
Restricted Assets:			
Deposits	40,625		40,625
Capital Assets:			
Land and Construction in Progress	2,339,693	1,060,135	3,399,828
Other Capital Assets, Net of Depreciation	6,962,495	7,961,736	14,924,231
TOTAL ASSETS	$ 12,666,352	$ 11,641,467	$ 24,307,819
LIABILITIES:			
Accounts Payable	$ 201,750	$ 248,090	$ 449,840
Other Current Liabilities	24,331	86,627	110,958
Noncurrent Liabilities:			
Due Within One Year	-	240,097	240,097
Due in More than One Year	19,544	5,429,068	5,448,612
TOTAL LIABILITIES	245,625	6,003,882	6,249,507
NET POSITION:			
Net Investment in Capital Assets	9,302,188	3,390,622	12,692,810
Restricted for:			
Library Building	203,582		203,582
Library Fines	1,498		1,498
City Promotion	190,311		190,311
Insurance Cumulative Reserve	40,625		40,625
Unrestricted	2,682,523	2,246,963	4,929,486
TOTAL NET POSITION	12,420,727	5,637,585	18,058,312
TOTAL LIABILITIES AND NET POSITION	$ 12,666,352	$ 11,641,467	$ 24,307,819

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2014

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Governmental Activities	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Business-Type Activities	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Total
Primary Government:							
Governmental Activities:							
General Government	$ 371,156	$ 3,690	$ ~~62,400~~ 24,400	$ -	$ (305,066)	$ -	$ (305,066)
Public Safety	368,810	32,113			(336,697)		(336,697)
Public Works	656,748	26,730	83,917	253	(545,848)		(545,848)
Health and Welfare	48,594				(48,594)		(48,594)
Culture and Recreation	376,636	32,869	58,000	50,986	(292,781)		(292,781)
Conservation and Development	253,732				(253,732)		(253,732)
Total Governmental Activities	2,075,676	95,402	146,317	51,239	(1,782,718)	-	(1,782,718)
Business-type Activities:							
Water	535,153	566,586		47,619		79,052	79,052
Wastewater	475,230	537,595	22,012			84,377	84,377
Liquor	958,115	1,059,498				101,383	101,383
Total Business-type Activities:	1,968,498	2,163,679	22,012	47,619	-	264,812	264,812
TOTAL PRIMARY GOVERNMENT	$ 4,044,174	$ 2,259,081	$ 168,329	$ 98,858	(1,782,718)	264,812	(1,517,906)
General Revenues:							
Taxes:							
Property Taxes					962,500		962,500
Sales Tax					987,496		987,496
State Shared Revenues					45,824		45,824
Unrestricted Investment Earnings					4,569	2,857	7,426
Miscellaneous Revenue					175,421	102,856	278,277
Transfers					3,520	(3,520)	-
Total General Revenues and Transfers					2,179,330	102,193	2,281,523
Change in Net Position					396,612	367,005	763,617
Net Position-Beginning					12,024,115	5,270,580	17,294,695
NET POSITION - ENDING					$ 12,420,727	$ 5,637,585	$ 18,058,312

The notes to the financial statements are an integral part of this statement.

WORKING DRAFT
For Discussion Purposes

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	General Fund	Library Building Fund	Nonmajor Funds	Governmental Funds
ASSETS:				
Cash and Cash Equivalents	$ 1,692,266	$ 605,695	$ 71,422	$ 2,369,383
Taxes Receivable - Delinquent	13,981			13,981
Accounts Receivable, Net	16,439			16,439
Special Assessments Receivable - Current	3,611			3,611
Special Assessments Receivable - Delinquent	2,474			2,474
Special Assessments Receivable - Deferred	3,770			3,770
Interest Receivable - Special Assessments	460			460
Notes Receivable			238,600	238,600
Deposits	40,625			40,625
Due from Library Building Fund	258,120			258,120
Due from State Government	23,509		387	23,896
TOTAL ASSETS	$ 2,055,255	$ 605,695	$ 310,409	$ 2,971,359
LIABILITIES AND FUND BALANCES:				
Liabilities:				
Accounts Payable	$ 57,757	$ 143,993	$ -	$ 201,750
Due to General Fund		258,120		258,120
Accrued Wages Payable	22,037			22,037
Accrued Taxes Payable	2,294			2,294
TOTAL LIABILITIES	82,088	402,113	-	484,201
DEFERRED INFLOWS OF RESOURCES:				
Unavailable Revenue - Property Taxes	13,981			13,981
Unavailable Revenue - Special Assessments	10,315			10,315
TOTAL DEFERRED INFLOWS OF RESOURCES	24,296	-	-	24,296
Fund Balances:				
Nonspendable				
Deposits	40,625			40,625
Restricted				
City Promotion			190,311	190,311
Library Fines			1,498	1,498
Library Building		203,582		203,582
Assigned for City Promotion			118,600	118,600
Unassigned	1,908,246			1,908,246
TOTAL FUND BALANCES	1,948,871	203,582	310,409	2,462,862
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 2,055,255	$ 605,695	$ 310,409	$ 2,971,359

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE
SHEET TO THE STATEMENT OF NET POSITION
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

Total Fund Balances - Governmental Funds		$ 2,462,862
Amounts reported for governmental activities in the statement of net assets are different because:		
Capital assets used in governmental activities are not current financial resources and therefore are not reported in the funds.		8,963,618
Assets such as taxes receivable and special assessment receivables are not available to pay for current period expenditures and therefore are deferred in the funds.		
Property Taxes	$ 13,981	
Special Assessments	10,315	
		24,296
Long-term liabilities, including bonds payable and accrued leave payable are not due and payable in the current period and therefore are not reported in the funds.		
Accrued Leave	$ 19,544	
Total long-term liabilities		(19,544)
Internal service funds are used by management to charge the cost of activities to individual funds. The assets and liabilities of internal service funds are included in governmental activities in the statement of net position.		989,495
Net Position - Governmental Activities		$ 12,420,727

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	General Fund	Library Building Fund	Nonmajor Funds	Governmental Funds
REVENUES:				
Taxes:				
General Property Taxes	$ 957,206	$ -	$ -	$ 957,206
General Sales and Use Taxes	937,431		50,065	987,496
Amusement Taxes	396			396
Penalties and Interest on Delinquent Taxes	731			731
Licenses and Permits	29,505			29,505
Intergovernmental Revenue	192,141			192,141
Charges for Goods and Services	60,734			60,734
Fines and Forfeits	2,914		2,250	5,164
Special Assessments	5,263		7,001	12,264
Investment Earnings	3,345	404	93	3,842
Contributions from Private Sources	35	49,853	1,098	50,986
Miscellaneous Revenue	36,490		35	36,525
TOTAL REVENUE	2,226,191	50,257	60,542	2,336,990
EXPENDITURES:				
Current:				
General Government	354,990			354,990
Public Safety	338,716			338,716
Public Works	431,102			431,102
Health and Welfare	48,594			48,594
Culture and Recreation	278,978	6,641	4,489	290,108
Conservation and Development	214,996		38,736	253,732
Capital Outlay	146,745	1,144,811		1,291,556
TOTAL EXPENDITURES	1,814,121	1,151,452	43,225	3,008,798
Excess of Revenue Over (Under) Expenditures	412,070	(1,101,195)	17,317	(671,808)
Other Financing Sources:				
Sale of Municipal Property			16	16
Transfer In	116,331	847,000		963,331
Transfer Out	(942,000)		(17,811)	(959,811)
Compensation for Losses	6,780			6,780
TOTAL OTHER FINANCING SOURCES (USES)	(818,889)	847,000	(17,795)	10,316
Net Changes in Fund Balance	(406,819)	(254,195)	(478)	(661,492)
Fund Balance - Beginning	2,355,690	457,777	310,887	3,124,354
FUND BALANCE - ENDING	$ 1,948,871	$ 203,582	$ 310,409	$ 2,462,862

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES
IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

Net Change in Fund Balances - Total Governmental Funds	$ (661,492)
Amounts reported for governmental activities in the statement of activities are different because:	
This amount represents capital asset purchases which are reported as expenditures on the fund financial statements but increase assets on the government wide statements.	1,291,556
This amount represents the current year depreciation expense reported in the statement of activities which is not reported on the fund financial statements because it does not require the use of current financial resources.	(299,618)
The fund financial statement governmental fund property tax accruals differ from the government wide statement property tax accruals in that the fund financial statements require the amounts to be "available".	4,167
Governmental funds report special assessments as revenue when "available", but the statement of activities includes the full amount of special assessments as revenue upon completion of the project at the point when an enforceable legal claim arises.	(12,011)
Governmental funds recognize expenditures for amounts of compensated absences actually paid to employees with current financial resources during the fiscal year. Amounts of compensated absences earned by employees are not recognized in the funds. In the statement of activities, expenses for these benefits are recognized when the employees earn leave credits.	3,347
Internal service funds are used by management to charge the cost of certain activities to individual funds. The net revenue (expense) of the internal service funds is reported with governmental activities.	70,663
Change in Net Assets of Governmental Activities	$ 396,612

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
PROPRIETARY FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Enterprise Funds				Internal Service Fund
	Water Fund	Wastewater Fund	Liquor Fund	Totals	
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	$ 1,151,623	$ 937,229	$ 183,243	$ 2,272,095	$ 650,925
Accounts Receivable, Net	42,120	46,770	107,780	196,670	
Due from Other Government		150,149		150,149	
Interest Receivable	405	277		682	
Total Current Assets	1,194,148	1,134,425	291,023	2,619,596	650,925
Noncurrent Assets:					
Capital Assets:					
Land	45,128	37,029	3,000	85,157	
Buildings	2,625,463	3,780,845	154,977	6,561,285	
Improvements Other than Buildings	1,715,342	2,111,830		3,827,172	
Machinery and Equipment	546,197	59,185	58,571	663,953	846,498
Construction Work in Progress	-	974,978		974,978	
Less: Accumulated Depreciation	(1,607,391)	(1,284,727)	(198,556)	(3,090,674)	(507,928)
Total Noncurrent Assets	3,324,739	5,679,140	17,992	9,021,871	338,570
TOTAL ASSETS	$ 4,518,887	$ 6,813,565	$ 309,015	$ 11,641,467	$ 989,495
LIABILITIES:					
Current Liabilities:					
Accounts Payable	$ 10,102	$ 139,694	$ 98,294	$ 248,090	$ -
Customer Deposits	5,460			5,460	
Accrued Interest Payable	29,543	38,004		67,547	
Accrued Wages Payable	6,442	6,329		12,771	
Accrued Taxes Payable	419	430		849	
Bonds Payable Current:					
Revenue	97,771	142,326		240,097	
Total Current Liabilities	149,737	326,783	98,294	574,814	-
Noncurrent Liabilities:					
Revenue Bonds Payable	1,625,877	3,765,275		5,391,152	
Accrued Leave Payable	18,958	18,958		37,916	
Total Noncurrent Liabilities	1,644,835	3,784,233	-	5,429,068	-
NET POSITION:					
Net Investment in Capital Assets	1,601,091	1,771,539	17,992	3,390,622	338,570
Unrestricted Net Position	1,123,224	931,010	192,729	2,246,963	650,925
Total Net Position	2,724,315	2,702,549	210,721	5,637,585	989,495
TOTAL LIABILITIES AND NET POSITION	$ 4,518,887	$ 6,813,565	$ 309,015	$ 11,641,467	$ 989,495

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes

	Enterprise Funds				Internal Service Fund
	Water Fund	Wastewater Fund	Liquor Fund	Totals	
Operating Revenue:					
Charges for Goods and Services	$ 519,180	$ 537,595	$ 1,017,768	$ 2,074,543	$ 132,100
Revenue Dedicated to Servicing Debt	47,406			47,406	
Lottery Sales			41,730	41,730	
Miscellaneous	9,253	44,051		53,304	
TOTAL OPERATING REVENUE	575,839	581,646	1,059,498	2,216,983	132,100
Operating Expenses:					
Personal Services	149,899	145,424		295,323	
Other Current Expense	97,557	114,783	3,026	215,366	
Materials	116,717		951,850	1,068,567	
Depreciation	112,483	116,373	3,239	232,095	63,164
TOTAL OPERATING EXPENSES	476,656	376,580	958,115	1,811,351	63,164
Operating Income (Loss)	99,183	205,066	101,383	405,632	68,936
Nonoperating Revenue (Expense):					
Operating Grants		22,012		22,012	
Investment Earnings	1,486	1,055	316	2,857	727
Rental Revenue	41,061		15,000	56,061	
Sale of Surplus Property	1,568			1,568	1,000
Interest Expense and Fiscal Charges	(58,498)	(98,650)		(157,148)	
Other	(4,296)	(3,780)		(8,076)	
TOTAL NONOPERATING REVENUE (EXPENSE)	(18,679)	(79,363)	15,316	(82,726)	1,727
Income (Loss) Before Contributions and Transfers	80,504	125,703	116,699	322,906	70,663
Capital Contributions	47,619			47,619	
Transfers In		95,000		95,000	
Transfers Out			(98,520)	(98,520)	
Change in Net Position	128,123	220,703	18,179	367,005	70,663
Net Position - Beginning	2,596,192	2,481,846	192,542	5,270,580	918,832
NET POSITION - ENDING	$ 2,724,315	$ 2,702,549	$ 210,721	$ 5,637,585	$ 989,495

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Enterprise Funds				
	Water Fund	Wastewater Fund	Liquor Fund	Total	Internal Service Fund
Cash Flows from Operating Activities:					
Receipts from Customers	$ 695,119	$ 563,864	$ 1,170,375	$ 2,429,358	$ -
Payments to Employees for Services	(145,005)	(140,659)		(285,664)	
Payments to Suppliers of Goods and Services	(272,031)	(66,687)	(1,055,891)	(1,394,609)	
Receipts for Interfund Services Provided				-	132,100
Net Cash Provided (Used) by Operating Activities	278,083	356,518	114,484	749,085	132,100
Cash Flows from Noncapital Financing Activities:					
Transfers from Other Funds	-	95,000	(98,520)	(3,520)	
Net Cash Provided (Used) by Noncapital Financing Activities	-	95,000	(98,520)	(3,520)	-
Cash Flows from Capital and Related Financing Activities:					
Proceeds from Capital Debt	52,829	1,007,254		1,060,083	
Purchase of Capital Assets	(3,452)	(999,150)		(1,002,602)	-
Principal Paid on Capital Debt	(78,101)	(121,407)		(199,508)	
Interest Paid on Capital Debt	(34,886)	(77,079)		(111,965)	
Other Receipts	38,333	18,233	15,000	71,566	
Net Cash Provided (Used) by Capital and Related Financing Activities	(25,277)	(172,149)	15,000	(182,426)	-
Cash Flows from Investing Activities:					
Interest Earnings	1,081	778	316	2,175	728
Net Cash Provided by Investing Activities	1,081	778	316	2,175	728
Net Increase (Decrease) in Cash and Cash Equivalents	253,887	280,147	31,280	565,314	132,828
Cash and Cash Equivalents at Beginning of Year	897,736	657,082	151,963	1,706,781	518,097
Cash and Cash Equivalents at End of Year	$ 1,151,623	$ 937,229	$ 183,243	$ 2,272,095	$ 650,925
RECONCILIATION OF OPERATING INCOME (LOSS) TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES:					
Operating Income (Loss)	$ 99,183	$ 205,066	$ 101,383	$ 405,632	$ 68,936
Net Cash Provided (Used) by Operating Activities:					
Depreciation Expense	112,483	116,373	3,240	232,096	63,164
Change in Assets and Liabilities:					
Receivables	1,378	1,008	110,877	113,263	
Due From Other Governments	117,852	(18,790)		99,062	
Customer Deposits	50			50	
Accounts and Other Payables	(57,757)	48,096	(101,016)	(110,677)	
Accrued Leave Payable	2,047	2,047		4,094	
Accrued Taxes Payable	419	414			
Accrued Wages Payable	2,428	2,304		4,732	
Net Cash Provided (Used) by Operating Activities	$ 278,083	$ 356,518	$ 114,484	$ 749,085	$ 132,100
Noncash Investing, Capital and Financing Activities:					
Debt Forgiveness	$ 47,620				

The notes to the financial statements are an integral part of this statement.

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
Beginning Balance	$ 2,481,512.33	$ 457,776.50	$ 58,899.36	$ 2,586.95	$ 10,800.65	$ 3,011,575.79
Revenues and Other Sources:						
Property Taxes	957,206.18	-	-	-	-	957,206.18
General Sales and Use Taxes	998,975.21	-	53,925.13	-	-	1,052,900.34
Amusement Taxes	396.00	-	-	-	-	396.00
Penalties and Interest on Delinquent Taxes	731.22	-	-	-	-	731.22
Licenses and Permits	29,504.50	-	-	-	-	29,504.50
Federal Grants	24,399.59	-	-	-	-	24,399.59
Federal Shared Revenue	38,000.00	-	-	-	-	38,000.00
State Shared Revenue:						
Bank Franchise Tax	25,220.01	-	-	-	-	25,220.01
Motor Vehicle Commercial Prorate	2,958.61	-	-	-	-	2,958.61
Liquor Tax Reversion	20,604.41	-	-	-	-	20,604.41
Motor Vehicle Licenses (5%)	24,581.75	-	-	-	-	24,581.75
Local Government Highway and Bridge Fund	50,881.39	-	-	-	-	50,881.39
County Shared Revenue:						
County Wheel Tax	5,495.50	-	-	-	-	5,495.50
Charges for Goods and Services:						
General Government	1,000.00	-	-	-	-	1,000.00
Public Safety	135.00	-	-	-	-	135.00
Highways and Streets	13,444.34	-	-	-	-	13,444.34
Culture and Recreation	32,869.22	-	-	-	-	32,869.22
Other	13,285.21	-	-	-	-	13,285.21
Court Fines and Costs	286.00	-	-	-	-	286.00
Forfeits	102.56	-	-	-	-	102.56
Parking Meter Fines	2,085.00	-	-	-	-	2,085.00
Library	-	-	-	2,250.06	-	2,250.06
Other Fines and Forfeits	440.00	-	-	-	-	440.00
Investment Earnings	3,770.38	403.71	68.25	0.34	9.31	4,251.99
Rentals	2,400.00	-	-	-	-	2,400.00
Special Assessments	5,262.82	-	-	-	7,001.48	12,264.30
Contributions and Donations						

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
from Private Sources	35.00	49,853.35	-	1,097.86	-	50,986.21
Sale of Municipal Property	-	-	-	15.70	-	15.70
Compensation for Loss or Damage to Capital Assets	6,780.19	-	-	-	-	6,780.19
Other	20,321.20	-	-	35.68	-	20,356.88
Total Revenue and Other Sources	2,281,171.29	50,257.06	53,993.38	3,399.64	7,010.79	2,395,832.16
Expenditures and Other Uses:						
Legislative	44,536.35	-	-	-	-	44,536.35
Executive	143,548.71	-	-	-	-	143,548.71
Financial Administration	93,780.88	-	-	-	-	93,780.88
Other General Government	75,047.01	-	-	-	-	75,047.01
Police	240,650.40	-	-	-	-	240,650.40
Fire	56,129.17	-	-	-	-	56,129.17
Protective Inspection	40,298.30	-	-	-	-	40,298.30
Highways and Streets	424,142.46	-	-	-	-	424,142.46
Sanitation	5,610.85	-	-	-	-	5,610.85
Transit	44,523.80	-	-	-	-	44,523.80
Health	6,820.67	-	-	-	-	6,820.67
Humane Society	1,769.74	-	-	-	-	1,769.74
Ambulance	40,000.00	-	-	-	-	40,000.00
Recreation	86,862.26	-	-	-	-	86,862.26
Parks	127,467.69	-	-	-	-	127,467.69
Libraries	151,241.53	5,011.66	-	4,488.95	-	160,742.14
Economic Development and Assistance (Industrial Development)	214,995.63	-	38,736.25	-	-	253,731.88
Capital Outlay	-	1,011,273.99	-	-	-	1,011,273.99
Total Expenditures and Other Uses	1,797,425.45	1,016,285.65	38,736.25	4,488.95	-	2,856,936.30
Transfers In (Out)	(825,668.56)	847,000.00	-	-	(17,811.44)	3,520.00
Increase/Decrease in Fund Balance	(341,922.72)	(119,028.59)	15,257.13	(1,089.31)	(10,800.65)	(457,584.14)
Ending Balance:						
Nonspendable	40,624.89	-	-	-	-	40,624.89
Restricted	-	338,747.91	74,156.49	-	-	412,904.40
Assigned	-	-	238,600.00	-	-	238,600.00
Unassigned	1,992,817.52	-	-	1,497.64	-	1,994,315.16

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
Governmental Long-term Debt						

PROPRIETARY FUNDS	Liquor Fund	Water Fund	Wastewater Fund
Beginning Balance	192,541.58	2,516,282.88	2,478,224.97
Revenues	1,074,765.18	690,761.15	567,064.37
Expenses	958,113.69	530,067.99	499,337.64
Transfers In (Out)	(98,520.00)	-	95,000.00
Ending Balance:			
Net Investment in Capital Assets	17,992.08	1,601,091.54	1,960,826.33
Restricted for Debt Service	-	112,988.12	198,485.60
Unrestricted	192,680.99	957,339.69	457,209.16
Long-term Debt	-	1,723,647.49	3,648,697.33

The preceding financial data does not include fiduciary funds or component units. Information pertaining to those activities may be obtained by contacting the municipal finance officer at 605-428-3595

Municipal funds are deposited as follows:

Depository	Amount
Home Federal	3,908,008.37
1st National Bank	1,222,858.42

Exhibit III

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Assets:				
Cash and Cash Equivalents	$ 1,820,452.96	$ 605,695.01	$ 71,407.01	$ 2,497,554.98
110 Taxes Receivable--Delinquent	150,957.46	-	-	150,957.46
115 Accounts Receivable, Net	2,601.33	-	-	2,601.33
121 Special Assessments Receivable--Current	3,610.70	-	-	3,610.70
122 Special Assessments Receivable--Delinquent	2,473.98	-	-	2,473.98
123 Special Assessments Receivable--Deferred	3,770.47	-	-	3,770.47
125 Interest Receivable--Special Assessments	460.32	-	-	460.32
128 Notes Receivable	-	-	238,600.00	238,600.00
132 Due from State Governments	85,053.00	-	4,247.12	89,300.12
154 Deposits	40,624.89	-	-	40,624.89
Total Assets	2,110,005.11	605,695.01	314,254.13	3,029,954.25
Deferred Outflows of Resources:				
198 Other Deferred Outflows of Resources	$ -	$ -	$ -	$ -
Total Deferred Outflows of Resources:	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	$ 2,110,005.11	$ 605,695.01	$ 314,254.13	$ 3,029,954.25
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:				
Liabilities:				
202 Accounts Payable	$ 57,638.81	$ 266,947.10	$ -	$ 324,585.91
216 Accrued Wages Payable	5,341.72	-	-	5,341.72
217 Accrued Taxes Payable	2,225.31	-	-	2,225.31
Total Liabilities	65,205.84	266,947.10	-	332,152.94

Exhibit III

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Deferred Inflows of Resources:				
245 Unavailable Revenue-Property Taxes	1,041.39	-	-	1,041.39
246 Unavailable Revenue-Special Assessments	10,315.47	-	-	10,315.47
Total Deferred Inflows of Resources:	11,356.86	-	-	11,356.86
Fund Balances:				
263 Nonspendable	40,624.89	-	-	40,624.89
264 Restricted	-	338,747.91	74,156.49	412,904.40
266 Assigned	-	-	238,600.00	238,600.00
267 Unassigned	1,992,817.52	-	1,497.64	1,994,315.16
Total Fund Balances	2,033,442.41	338,747.91	314,254.13	2,686,444.45
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 2,110,005.11	$ 605,695.01	$ 314,254.13	$ 3,029,954.25

The notes to the financial statements are an integral part of this statement.

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
Revenues:				
310 Taxes:				
311 General Property Taxes	$ 957,206.18	$ -	$ -	$ 957,206.18
313 General Sales and Use Taxes	998,975.21	-	53,925.13	1,052,900.34
315 Amusement Taxes	396.00	-	-	396.00
319 Penalties and Interest on Delinquent Taxes	731.22	-	-	731.22
320 Licenses and Permits	29,504.50	-	-	29,504.50
330 Intergovernmental Revenue:				
331 Federal Grants	24,399.59	-	-	24,399.59
332 Federal Shared Revenue	38,000.00	-	-	38,000.00
335 State Shared Revenue:				
335.01 Bank Franchise Tax	25,220.01	-	-	25,220.01
335.02 Motor Vehicle Commercial Prorate	2,958.61	-	-	2,958.61
335.03 Liquor Tax Reversion	20,604.41	-	-	20,604.41
335.04 Motor Vehicle Licenses (5%)	24,581.75	-	-	24,581.75
335.08 Local Government Highway and Bridge Fund	50,881.39	-	-	50,881.39
338.03 County Wheel Tax	5,495.50	-	-	5,495.50
340 Charges for Goods and Services:				
341 General Government	1,000.00	-	-	1,000.00
342 Public Safety	135.00	-	-	135.00
343 Highways and Streets	13,444.34	-	-	13,444.34
346 Culture and Recreation	32,869.22	-	-	32,869.22
349 Other	13,285.21	-	-	13,285.21
350 Fines and Forfeits:				

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
351 Court Fines and Costs	286.00	-	-	286.00
352 Animal Control Fines	102.56	-	-	102.56
353 Parking Meter Fines	2,085.00	-	-	2,085.00
354 Library	-	-	2,250.06	2,250.06
359 Other	440.00	-	-	440.00
360 Miscellaneous Revenue:				
361 Investment Earnings	3,770.38	403.71	77.90	4,251.99
362 Rentals	2,400.00	-	-	2,400.00
363 Special Assessments	5,262.82	-	7,001.48	12,264.30
367 Contributions and Donations from Private Sources	35.00	49,853.35	1,097.86	50,986.21
369 Other	20,321.20	-	35.68	20,356.88
Total Revenue	2,274,391.10	50,257.06	64,388.11	2,389,036.27
Expenditures:				
410 General Government:				
411 Legislative	44,536.35	-	-	44,536.35
412 Executive	143,548.71	-	-	143,548.71
414 Financial Administration	93,780.88	-	-	93,780.88
419 Other	75,047.01	-	-	75,047.01
Total General Government	356,912.95	-	-	356,912.95
420 Public Safety:				
421 Police	240,650.40	-	-	240,650.40
422 Fire	56,129.17	-	-	56,129.17
423 Protective Inspection	40,298.30	-	-	40,298.30
Total Public Safety	337,077.87	-	-	337,077.87
430 Public Works:				

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
431 Highways and Streets	424,142.46	-	-	424,142.46
432 Sanitation	5,610.85	-	-	5,610.85
439 Transit	44,523.80	-	-	44,523.80
Total Public Works	474,277.11	-	-	474,277.11
440 Health and Welfare:				
441 Health	6,820.67	-	-	6,820.67
444 Humane Society	1,769.74	-	-	1,769.74
446 Ambulance	40,000.00	-	-	40,000.00
Total Health and Welfare	48,590.41	-	-	48,590.41
450 Culture and Recreation:				
451 Recreation	86,862.26	-	-	86,862.26
452 Parks	127,467.69	-	-	127,467.69
455 Libraries	151,241.53	5,011.66	4,488.95	160,742.14
Total Culture and Recreation	365,571.48	5,011.66	4,488.95	375,072.09
460 Conservation and Development:				
465 Economic Development and Assistance (Industrial Development)	214,995.63	-	38,736.25	253,731.88
Total Conservation and Development	214,995.63	-	38,736.25	253,731.88
485 Capital Outlay		1,011,273.99	-	1,011,273.99
Total Expenditures	1,797,425.45	1,016,285.65	43,225.20	2,856,936.30
Excess of Revenues Over (Under) Expenditures	476,965.65	(966,028.59)	21,162.91	(467,900.03)

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
Other Financing Sources (Uses):				
391.01 Transfers In	116,331.44	847,000.00	-	963,331.44
391.03 Sale of Municipal Property	-	-	15.70	15.70
391.04 Compensation for Loss or Damage to Capital Assets	6,780.19	-	-	6,780.19
511 Transfers Out (Enter as Negative)	(942,000.00)	-	(17,811.44)	(959,811.44)
Total Other Financing Sources (Uses)	(818,888.37)	847,000.00	(17,795.74)	10,315.89
Net Change in Fund Balances	(341,922.72)	(119,028.59)	3,367.17	(457,584.14)
Fund Balance - Beginning	2,481,512.33	457,776.50	72,286.96	3,011,575.79
Adjustments:				
Prior year Auditor adjustments	(106,147.20)	-	238,600.00	132,452.80
Adjusted Fund Balance - Beginning	2,375,365.13	457,776.50	310,886.96	3,144,028.59
FUND BALANCE- ENDING	$ 2,033,442.41	$ 338,747.91	$ 314,254.13	$ 2,686,444.45

The notes to the financial statements are an integral part of this statement.

Exhibit V

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:					
Current Assets:					
Cash and Cash Equivalents	$ 183,194.93	$ 1,088,181.72	$ 974,090.40	$ 2,245,467.05	$ 650,924.92
115 Accounts Receivable, Net	107,779.73	42,119.40	46,769.56	196,668.69	-
135 Interest Receivable	-	405.35	276.72	682.07	-
Total Current Assets	290,974.66	1,130,706.47	1,021,136.68	2,442,817.81	650,924.92
Noncurrent Assets:					
107.1 Restricted Cash and Cash Equivalents	-	5,460.00	-	5,460.00	-
Capital Assets:					
160 Land	3,000.00	45,128.25	37,029.48	85,157.73	-
162 Buildings	154,977.23	2,625,463.19	3,780,845.27	6,561,285.69	-
164 Improvements Other Than Buildings	-	1,415,341.71	2,121,142.13	3,536,483.84	-
166 Machinery and Equipment	58,571.17	546,197.26	59,184.95	663,953.38	845,998.57
168 Construction Work in Progress	-	-	729,235.40	729,235.40	
Less: Accumulated Depreciation (Credit)	(198,556.32)	(1,439,391.38)	(1,284,912.89)	(2,922,860.59)	(507,928.16)
190 Intangible Assets	-	300,000.00	-	300,000.00	-
191 Accumulated Amortization (Credit)	-	(168,000.00)	-	(168,000.00)	-
Total Noncurrent Assets	17,992.08	3,330,199.03	5,442,524.34	8,790,715.45	338,070.41
Total Assets	308,966.74	4,460,905.50	6,463,661.02	11,233,533.26	988,995.33
Deferred Outflows of Resources:					
198 Other Deferred Outflows of Resources				-	
Total Deferred Outflows of Resources:	-	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	308,966.74	4,460,905.50	6,463,661.02	11,233,533.26	988,995.33
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:					
Current Liabilities:					
202 Accounts Payable	$ 98,293.67	$ 10,102.07	$ 139,694.01	$ 248,089.75	$ -
215 Accrued Interest Payable	-	29,542.53	38,003.85	67,546.38	-
216 Accrued Wages Payable	-	1,356.93	1,356.93	2,713.86	-

Exhibit V

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
217 Accrued Taxes Payable	-	419.03	429.71	848.74	-
220 Customer Deposits	-	5,460.00	-	5,460.00	-
226.02 Revenue	-	97,770.69	142,326.32	240,097.01	-
Total Current Liabilities	98,293.67	144,651.25	321,810.82	564,755.74	-
Noncurrent Liabilities:					
231 Bonds Payable:					
231.02 Revenue	-	1,625,876.80	3,506,371.01	5,132,247.81	-
233 Accrued Leave Payable	-	18,958.10	18,958.10	37,916.20	-
Total Noncurrent Liabilities	-	1,644,834.90	3,525,329.11	5,170,164.01	-
Total Liabilities	98,293.67	1,789,486.15	3,847,139.93	5,734,919.75	-
Deferred Inflows of Resources:					
247 Other Deferred Inflows of Resources	-	-	-	-	-
Total Deferred Inflows of Resources:	-	-	-	-	-
NET POSITION:					
253.10 Net Investment in Capital Assets	17,992.08	1,601,091.54	1,960,826.33	3,579,909.95	338,570.41
253.20 Restricted for:					
253.21 Revenue Bond Debt Service	-	112,988.12	198,485.60	311,473.72	-
253.90 Unrestricted	192,680.99	957,339.69	457,209.16	1,607,229.84	650,424.92
Total Net Position	210,673.07	2,671,419.35	2,616,521.09	5,498,613.51	988,995.33
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION	$ 308,966.74	$ 4,460,905.50	$ 6,463,661.02	$ 11,233,533.26	$ 988,995.33

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	**Water Fund**	**Wastewater Fund**	**Totals**	**Internal Service Funds**
Operating Revenue:					
370/380 Charges for Goods and Services	$ 1,017,768.32	$ 519,180.13	$ 537,594.56	$ 2,074,543.01	$ -
Revenue Dedicated to Servicing Debt	-	47,406.00	-	47,406.00	-
380.05 Lottery Sales	41,729.60	-	-	41,729.60	-
369 Miscellaneous	-	9,251.82	6,598.66	15,850.48	-
Total Operating Revenue	1,059,497.92	575,837.95	544,193.22	2,179,529.09	-
Operating Expenses:					
410 Personal Services	-	144,913.00	140,552.54	285,465.54	-
420 Other Current Expense	3,024.73	97,456.83	140,575.79	241,057.35	-
426.2 Materials (Cost of Goods Sold)	951,849.75	116,716.56	-	1,068,566.31	-
457 Depreciation	3,239.21	112,483.33	119,559.31	235,281.85	63,164.38
Total Operating Expenses	958,113.69	471,569.72	400,687.64	1,830,371.05	63,164.38
Operating Income (Loss)	101,384.23	104,268.23	143,505.58	349,158.04	(63,164.38)
Nonoperating Revenue (Expense):					
330 Operating Grants	-	71,057.00	22,012.47	93,069.47	-
361 Investment Earnings	267.26	1,237.88	858.68	2,363.82	727.81
362 Rental Revenue	15,000.00	41,060.65	-	56,060.65	132,100.00
442 Interest Expense (Enter as Negative)	-	(58,498.27)	(98,650.00)	(157,148.27)	-
(492)366 Gain (Loss) on Disposition of Assets	-	1,567.67	-	1,567.67	-
(429)369.01 Other	-	(4,294.40)	(3,780.58)	(8,074.98)	-
Total Nonoperating Revenue (Expense)	15,267.26	52,130.53	(79,559.43)	(12,161.64)	132,827.81
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	116,651.49	156,398.76	63,946.15	336,996.40	69,663.43
391.1 Transfers In	-	-	95,000.00	95,000.00	-
511 Transfers Out (Enter as Negative)	(98,520.00)	-	-	(98,520.00)	-
Change in Net Position	18,131.49	156,398.76	158,946.15	333,476.40	69,663.43
Net Position - Beginning	192,541.58	2,516,282.88	2,478,224.97	5,187,049.43	919,331.90
Adjustments:					
Prior year Auditor adjustments	-	(1,262.29)	(20,650.03)	(21,912.32)	-
Adjusted Net Position - Beginning	192,541.58	2,515,020.59	2,457,574.94	5,165,137.11	919,331.90

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
NET POSITION - ENDING	$ 210,673.07	$ 2,671,419.35	$ 2,616,521.09	$ 5,498,613.51	$ 988,995.33

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
COMBINING BALANCE SHEET
NONMAJOR GOVERNMENTAL FUNDS
December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Assets:				
Cash and Cash Equivalents	$ 69,909.37	$ 1,497.64	$ -	$ 71,407.01
128 Notes Receivable	238,600.00	-	-	238,600.00
132 Due from State Government	4,247.12	-	-	4,247.12
Total Assets	312,756.49	1,497.64	-	314,254.13
Deferred Outflows of Resources:				
198 Other Deferred Outflows of Resources	-	-	-	-
Total Deferred Outflows of Resources:	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	312,756.49	1,497.64	-	314,254.13
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:				
Liabilities:				
202 Accounts Payable	-	-	-	-
Total Liabilities	-	-	-	-
Deferred Inflows of Resources:				
245 Unavailable Revenue-Property Taxes	-	-	-	-
246 Unavailable Revenue-Special Assessments	-	-	-	-
Total Deferred Inflows of Resources:	-	-	-	-
Fund Balances:				
264 Restricted	74,156.49	-	-	74,156.49
266 Assigned	238,600.00	-	-	238,600.00
267 Unassigned	-	1,497.64	-	1,497.64
Total Fund Balances	312,756.49	1,497.64	-	314,254.13
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 312,756.49	$ 1,497.64	$ -	$ 314,254.13

MUNICIPALITY OF DELL RAPIDS
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
NONMAJOR GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
Revenues:				
310 Taxes:				
313 General Sales and Use Taxes	$ 53,925.13	$ -	$ -	$ 53,925.13
350 Fines and Forfeits:				
354 Library	-	2,250.06	-	2,250.06
360 Miscellaneous Revenue:				
361 Investment Earnings	68.25	0.34	9.31	77.90
363 Special Assessments	-	-	7,001.48	7,001.48
367 Contributions and Donations from Private Sources	-	1,097.86	-	1,097.86
369 Other	-	35.68	-	35.68
Total Revenue	53,993.38	3,383.94	7,010.79	64,388.11
Expenditures:				
450 Culture and Recreation:				
455 Libraries	-	4,488.95	-	4,488.95
Total Culture and Recreation	-	4,488.95	-	4,488.95
460 Conservation and Development:				
465 Economic Development and Assistance (Industrial Development)	38,736.25	-	-	38,736.25
Total Conservation and Development	38,736.25	-	-	38,736.25
Total Expenditures	38,736.25	4,488.95	-	43,225.20

MUNICIPALITY OF DELL RAPIDS
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
NONMAJOR GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
Excess of Revenues Over (Under) Expenditures	15,257.13	(1,105.01)	7,010.79	21,162.91
Other Financing Sources (Uses):				
391.03 Sale of Municipal Property	-	15.70	-	15.70
511 Transfers Out (Enter as Negative)	-	-	(17,811.44)	(17,811.44)
Total Other Financing Sources (Uses)	-	15.70	(17,811.44)	(17,795.74)
Net Change in Fund Balances	15,257.13	(1,089.31)	(10,800.65)	3,367.17
Fund Balance - Beginning	58,899.36	2,586.95	10,800.65	72,286.96
Adjustments:				
Prior year Auditor adjustments	238,600.00	-	-	238,600.00
Adjusted Fund Balance - Beginning	297,499.36	2,586.95	10,800.65	310,886.96
FUND BALANCE- ENDING	$ 312,756.49	$ 1,497.64	$ 0.00	$ 314,254.13

MUNICIPALITY OF DELL RAPIDS
SCHEDULE OF CHANGES IN LONG-TERM DEBT
For the Year Ended December 31, 2014

Indebtedness	Long-Term Debt January 1, 2014	Add New Debt	Less Debt Retired	Long-Term Debt December 31, 2014
Enterprise Long-Term Debt:				
231.02 Revenue Bonds	$ 4,894,559.10	$ 748,349.84	$ 270,564.12	$ 5,372,344.82
Total	$ 4,894,559.10	$ 748,349.84	$ 270,564.12	$ 5,372,344.82

(Do not include interest in the above figures)

11-20-15 4:08 PM G/L BUDGET REPORT

2015 BUDGET

BUDGET : 15-2015 BUDGET
FUND : 101 GENERAL FUND
ITEMS PRINTED: ANNUAL BUDGET AMOUNTS

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
101-31101	GENERAL PROPERTY TAXES	1,012,801.00CR
101-31102	PRIOR YEARS' PROPERTY TAXES	2,000.00CR
101-31107	MOBILE HOME TAX	200.00CR
101-31108	PRIOR YEARS TAX ON MOBILE HOME	0.00
101-31300	SALES TAX	800,000.00CR
101-31500	AMUSEMENT LICENSES	400.00CR
101-31800	TAX DEED REVENUE	0.00
101-31900	PENALTY & INTEREST PRIOR YEARS	1,000.00CR
101-32010	MALT BEVERAGE LICENSES	1,450.00CR
101-32020	LIQUOR LICENCES	7,000.00CR
101-32025	GOLF CART LICENSE	0.00
101-32030	PET LICENSES	400.00CR
101-32040	BUILDING PERMITS	10,000.00CR
101-32050	GARBAGE HAULERS' LICENCES	800.00CR
101-32060	BICYCLE LICENSES	0.00
101-32070	PEDDLERS LICENSE	500.00CR
101-32080	CONCESSION STAND PERMIT	0.00
101-32090	OUTDOOR DANCE PERMITS	300.00CR
101-33000	INTERGOVERNMENTAL REVENUE	0.00
101-33110	FED TRANS GRANT-5311-UM3684	25,240.96CR
101-33111	FED REC TRAILS PROG GRANT	0.00
101-33113	TITLE IIIB TRANSIT FUNDS	1,131.00CR
101-33114	5309 FEDERAL FUNDS-UM03	0.00
101-33400	STATE GRANTS	0.00
101-33501	BANK FRANCHISE TAX	25,000.00CR
101-33502	PORT OF ENTRY	2,000.00CR
101-33503	LIQUOR TAX REVERSION	17,000.00CR
101-33504	MOTOR VEHICLE LICENSES	12,000.00CR
101-33506	FIRE INSURANCE PREMIUM REV	0.00
101-33508	LOCAL GOVT HIGHWAY & BRIDGE	30,000.00CR
101-33520	STATE SHARED OTHER	500.00CR
101-33803	COUNTY WHEEL TAX	4,000.00CR
101-33899	COUNTY SHARED - OTHER	0.00
101-33900	OTHER INTERGOVENMENTAL	2,000.00CR
101-34101	ZONING & SUBDIVISION FEES	500.00CR
101-34299	PUBLIC SAFETY - OTHER	0.00
101-34402	MOWING & SNOW REMOVAL	800.00CR
101-34403	RUBBLE SITE CHARGES	8,000.00CR
101-34502	ANIMAL CONTROL	0.00
101-34602	SWIMMING POOL FEES	20,000.00CR
101-34603	RECREATIONAL FEES	600.00CR
101-34604	SWIMMING POOL CONCESSIONS	5,000.00CR
101-34692	PARKS & RECREATION DONATIONS	0.00
101-34693	SWIMMING LESSONS	7,000.00CR
101-34699	OTHER - RECREATION	0.00
101-34900	OTHER INCOME - TRANSIT	9,000.00CR
101-35100	COURT FINES & COSTS	750.00CR
101-35200	ANIMAL CONTROL FINES	0.00
101-35300	PARKING FINES	1,000.00CR
101-35900	OTHER FINES & FORFEITS-NSF	300.00CR

602- drinking water
604- wastewater

PAGE TOTAL: 2,008,672.96CR

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
604-4325-41100	WAGES	101,320.00
604-4325-41120	OVERTIME	1,000.00
604-4325-41200	FICA	7,828.00
604-4325-41300	RETIREMENT	6,140.00
604-4325-41400	WORKERS' COMPENSATION	2,100.00
604-4325-41500	HEALTH/DENTAL INSURANCE	16,524.00
604-4325-41600	UNEMPLOYMENT COMPENSATION	35.00
604-4325-42100	INSURANCE	3,200.00
604-4325-42200	PROFESSIONAL SERVICES & FEES	50,000.00
604-4325-42210	TESTING	0.00
604-4325-42220	STATE FEES	0.00
604-4325-42300	PUBLISHING & ADVERTISING	200.00
604-4325-42400	EQUIPMENT REPLACEMENT	0.00
604-4325-42500	REPAIR & MAINTENANCE	20,000.00
604-4325-42610	SUPPLIES	7,000.00
604-4325-42680	UNIFORMS	300.00
604-4325-42700	TRAVEL & TRAINING	200.00
604-4325-42800	UTILITIES	30,000.00
604-4325-42900	OTHER EXPENSE	2,000.00
604-4325-43301	15TH STREET PHASE TWO	0.00
604-4325-43310	TREATMENT LAGOONS	0.00
604-4325-43320	COLLECTION SYSTEM	200,000.00
604-4325-43330	15TH STREET	0.00
604-4325-43340	SE SANITARY SEWER EXTENSION	0.00
604-4325-43341	BEACH RR CROSSING UTIL REPLACE	0.00
604-4325-43400	FURNITURE & MINOR EQUIPMENT	100.00
604-4325-43410	COMPUTER SOFTWARE	0.00
604-4325-43420	NORTHVIEW/10 ST IMPROVEMENTS	0.00
604-4325-43430	NEW INDUSTRIAL STREET	0.00
604-4325-43440	10TH STREET	0.00
604-4325-44100	PRINCIPAL	150,720.00
604-4325-44200	INTEREST	127,200.00
604-4325-45300	TRANSFER TO WW RESERVE	2,000.00
604-4325-45700	DEPRECIATION	100,000.00
604-4325-45900	LOSS ON DISPOSE OF CAP ASSETS	0.00
604-4328-41100	WAGES	20,200.00
604-4328-41200	FICA	1,546.00
604-4328-41300	RETIREMENT	1,212.00
604-4328-41400	WORKERS' COMPENSATION	20.00
604-4328-41500	INSURANCE	4,400.00
604-4328-42100	INSURANCE	0.00
604-4328-42200	PROFESSIONAL SERVICES & FEES	500.00
604-4328-42300	PUBLISHING AND ADVERTISING	0.00
604-4328-42510	EQUIPMENT REPAIR & MAINTENANCE	1,000.00
604-4328-42610	SUPPLIES	4,000.00
604-4328-42700	TRAVEL & TRAINING	400.00
604-4328-42800	UTILITIES	2,600.00
604-4328-42900	OTHER	2,700.00
604-4328-43400	FURNITURE & MINOR EQUIPMENT	500.00
	PAGE TOTAL:	866,945.00

11-20-15 4:06 PM G/L BUDGET REPORT 2016 BUDGET

BUDGET : 16-2016 BUDGET
FUND : 101 GENERAL FUND
ITEMS PRINTED: ANNUAL BUDGET AMOUNTS

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
101-31101	GENERAL PROPERTY TAXES	1,038,154.49CR
101-31102	PRIOR YEARS' PROPERTY TAXES	2,000.00CR
101-31107	MOBILE HOME TAX	200.00CR
101-31108	PRIOR YEARS TAX ON MOBILE HOME	0.00
101-31300	SALES TAX	850,000.00CR
101-31500	AMUSEMENT LICENSES	400.00CR
101-31800	TAX DEED REVENUE	0.00
101-31900	PENALTY & INTEREST PRIOR YEARS	1,000.00CR
101-32010	MALT BEVERAGE LICENSES	1,450.00CR
101-32020	LIQUOR LICENCES	7,000.00CR
101-32025	GOLF CART LICENSE	0.00
101-32030	PET LICENSES	400.00CR
101-32040	BUILDING PERMITS	10,000.00CR
101-32050	GARBAGE HAULERS' LICENCES	800.00CR
101-32060	BICYCLE LICENSES	0.00
101-32070	PEDDLERS LICENSE	500.00CR
101-32080	CONCESSION STAND PERMIT	0.00
101-32090	OUTDOOR DANCE PERMITS	300.00CR
101-33000	INTERGOVERNMENTAL REVENUE	0.00
101-33110	FED TRANS GRANT-5311-UM3684	27,928.00CR
101-33111	FED REC TRAILS PROG GRANT	116,000.00CR
101-33113	TITLE IIIB TRANSIT FUNDS	1,131.00CR
101-33114	5309 FEDERAL FUNDS-UM03	0.00
101-33400	STATE GRANTS	900,000.00CR
101-33501	BANK FRANCHISE TAX	25,000.00CR
101-33502	PORT OF ENTRY	2,000.00CR
101-33503	LIQUOR TAX REVERSION	17,000.00CR
101-33504	MOTOR VEHICLE LICENSES	15,000.00CR
101-33506	FIRE INSURANCE PREMIUM REV	0.00
101-33508	LOCAL GOVT HIGHWAY & BRIDGE	30,000.00CR
101-33520	STATE SHARED OTHER	500.00CR
101-33803	COUNTY WHEEL TAX	4,000.00CR
101-33899	COUNTY SHARED - OTHER	0.00
101-33900	OTHER INTERGOVENMENTAL	2,000.00CR
101-34101	ZONING & SUBDIVISION FEES	500.00CR
101-34299	PUBLIC SAFETY - OTHER	0.00
101-34402	MOWING & SNOW REMOVAL	800.00CR
101-34403	RUBBLE SITE CHARGES	8,000.00CR
101-34502	ANIMAL CONTROL	0.00
101-34602	SWIMMING POOL FEES	20,000.00CR
101-34603	RECREATIONAL FEES	600.00CR
101-34604	SWIMMING POOL CONCESSIONS	5,000.00CR
101-34692	PARKS & RECREATION DONATIONS	0.00
101-34693	SWIMMING LESSONS	7,000.00CR
101-34699	OTHER - RECREATION	0.00
101-34900	OTHER INCOME - TRANSIT	6,500.00CR
101-35100	COURT FINES & COSTS	750.00CR
101-35200	ANIMAL CONTROL FINES	0.00
101-35300	PARKING FINES	2,000.00CR
101-35900	OTHER FINES & FORFEITS-NSF	300.00CR

PAGE TOTAL: 3,104,213.49CR

602- drinking water
604- wastewater

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
604-4325-41100	WAGES	95,000.00
604-4325-41120	OVERTIME	1,000.00
604-4325-41200	FICA	7,280.00
604-4325-41300	RETIREMENT	6,140.00
604-4325-41400	WORKERS' COMPENSATION	2,100.00
604-4325-41500	HEALTH/DENTAL INSURANCE	17,290.00
604-4325-41600	UNEMPLOYMENT COMPENSATION	35.00
604-4325-42100	INSURANCE	3,200.00
604-4325-42200	PROFESSIONAL SERVICES & FEES	200,000.00
604-4325-42210	TESTING	0.00
604-4325-42220	STATE FEES	0.00
604-4325-42300	PUBLISHING & ADVERTISING	200.00
604-4325-42400	EQUIPMENT REPLACEMENT	10,000.00
604-4325-42500	REPAIR & MAINTENANCE	20,000.00
604-4325-42610	SUPPLIES	7,000.00
604-4325-42680	UNIFORMS	300.00
604-4325-42700	TRAVEL & TRAINING	200.00
604-4325-42800	UTILITIES	35,000.00
604-4325-42900	OTHER EXPENSE	2,000.00
604-4325-43301	15TH STREET PHASE TWO	0.00
604-4325-43310	TREATMENT LAGOONS	0.00
604-4325-43320	COLLECTION SYSTEM	0.00
604-4325-43330	15TH STREET	0.00
604-4325-43340	SE SANITARY SEWER EXTENSION	0.00
604-4325-43341	BEACH RR CROSSING UTIL REPLACE	0.00
604-4325-43400	FURNITURE & MINOR EQUIPMENT	100.00
604-4325-43410	COMPUTER SOFTWARE	0.00
604-4325-43420	NORTHVIEW/10 ST IMPROVEMENTS	0.00
604-4325-43430	NEW INDUSTRIAL STREET	0.00
604-4325-43440	10TH STREET	420,000.00
604-4325-44100	PRINCIPAL	187,668.67
604-4325-44200	INTEREST	146,620.77
604-4325-45300	TRANSFER TO WW RESERVE	2,000.00
604-4325-45700	DEPRECIATION	100,000.00
604-4325-45900	LOSS ON DISPOSE OF CAP ASSETS	0.00
604-4328-41100	WAGES	22,000.00
604-4328-41200	FICA	1,760.00
604-4328-41300	RETIREMENT	1,320.00
604-4328-41400	WORKERS' COMPENSATION	20.00
604-4328-41500	INSURANCE	4,400.00
604-4328-42100	INSURANCE	0.00
604-4328-42200	PROFESSIONAL SERVICES & FEES	500.00
604-4328-42300	PUBLISHING AND ADVERTISING	0.00
604-4328-42510	EQUIPMENT REPAIR & MAINTENANCE	1,000.00
604-4328-42610	SUPPLIES	4,000.00
604-4328-42700	TRAVEL & TRAINING	400.00
604-4328-42800	UTILITIES	2,600.00
604-4328-42900	OTHER	2,700.00
604-4328-43400	FURNITURE & MINOR EQUIPMENT	500.00
	PAGE TOTAL:	1,304,334.44

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DELL RAPIDS CITY

Argus Leader Media
AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA } ss

Linda Schulte being duly sworn, says: That the **Dell Rapids Tribune** is, and during all the times hereinafter mentioned was, a weekly legal newspaper as defined by SDCL 17-2-2.1 through 17-2-2.4, as amended published at Dell Rapids, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper upon

Wednesday ,the 25 day of November 2015 ,

_____ the _____ day of _____ 2015 ,

_____ ,the _____ day of _____ 2015 ,

_____ ,the _____ day of _____ 2015 ,

_____ ,the _____ day of _____ 2015 ,

and that $32.77 was charged for publishing the same

Linda Schulte

Subscribed and sworn to before me 11/25/2015 .

Betty Gates

Notary Public, South Dakota

My Commission expires March 11, 2016

BETTY GATES
NOTARY PUBLIC
SOUTH DAKOTA
SEAL SEAL

NOTICE OF PUBLIC HEARING for the CITY OF DELL RAPIDS WASTE WATER TREATMENT FACILITY PROJECT

Notice is hereby given that the Town of Dell Rapids will hold a Public Hearing on December 7th, 2015, regarding improvements to the Wastewater System. The Town is seeking up to $7,184,000 of funding from the Board of Water and Natural Resources for improvements to the Waste Water Treatment Facility. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the Clean Water State Revolving Fund (SRF) Program. The expected Clean Water SRF loan terms are 3.00 percent for 20 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal. The amount and source

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City of Dell Rapids

Public Hearing For CW-SRF Applications
Wastewater Treatment Facility
7:30 PM, Monday, December 7, 2015
Dell Rapids City Hall

Please sign in:

NAME	ADDRESS / REPRESENTING
[illegible]	City of Dell Rapids
[illegible]	City Attorney Dell Rapids
[illegible]	Comb Marketing Dell Rapids
Thomas J Early	Com Member, City of Dell Rapids
[illegible]	101 E 12th St Dells
Mary Klad	Council Member, City of Dells
[illegible]	DGR Engineering
Michael J Geraets	city council
[illegible]	City Council
[illegible]	City Council
[illegible]	City Council
[illegible]	609 E 7th St Dell Rapids
[illegible]	607 E 4TH ST DELL RAPIDS
[illegible]	506 5th St DRSD 57022
Jesse Christen	Dell Rapids Tribune
[illegible]	City Council
Claire Boardman	City of Dell Rapids
Janice Gravning	SECOG

DELL RAPIDS CITY COUNCIL MINUTES
Monday, December 7, 2015 at 7:30

Mayor Fiegen called the Dell Rapids City Council meeting to order at 7:30 p.m. at the City Hall Council Chambers. The Roll was called finding the following members present: Mike Geraets, Mike Sterud, Mary Klockman, Mark Crisp, Tom Earley, Lee Burggraff, Gary Haak and Dave Sommerfeld.
Staff present: Administrator Justin Weiland, Finance Officer Claire Baartman, and City Attorney Dean Hammer

Pledge of Allegiance was recited.

Approval of Agenda: Burggraff motioned to approve the agenda, seconded by Haak. Motion carried.

Approval of Minutes November 16, 2015 Regular Session:
Geraets requested Dave Sommerfeld be listed as absent. Mayor Fiegen noted the Sioux Falls Humane Society 2016 Contract should be changed from 2061 to 2016. Mayor Fiegen also noted 'Christmas at the Dells' was misspelled in the minutes. Earley motioned to approve the minutes of the regular session on November 16, 2015, with the changes stated as above, seconded by Crisp. Motion carried.

Approval of Minutes November 23, 2015 Special Session:
Geraets requested Earley be added to those present and Miles be removed. Geraets also requested the following be added: During the discuss of the motion made by Councilman Earley and before the roll call vote was taken Councilman Geraets asked Public Works Director Larry Schildhauer if he felt current city staff could handle the additional responsibilities of the SBR system. Mr. Schildhauer replied that with additional training he was confident that the present staff could handle the additional responsibility. Sommerfeld motioned to approve the minuets of the special session on November 23, 2015, with the changes as stated above, seconded by Geraets. Motion carried.

Visitors to be Heard: None

Public Hearing – Ordinance No. 826: Re-Zone Lot 6 of Herding Addition From NRC: Natural Resource Conservation District to B-2: General Business District – First Reading
Sommerfeld motioned to approve Ordinance No. 826, Seconded by Klockman. Motion carried. Burggraff abstained.

Public Hearing – DENR State Water Plan Loan Application Resolutions

A.) 2015-18: 10th Street/HWY 115 Project Drinking Water Application
Janice Gravning with SECOG addressed the Council and answered questions. The City, with SECOG's assistance, will be submitting applications to the Department of Environment & Natural Resources (DENR) for a $705,000 Drinking Water State Revolving Fund (DW-SRF) Loan for the 10th Street and Highway 115 Project. The interest Rate for the loan is 3.25% for a term of 30 years. Burggraff motioned to approve Resolution 2015-18, seconded by Haak. Motion carried.

B.) 2015-19: 10th Street/HWY 115 Project Clean Water Application
Janice Gravning with SECOG addressed the Council and answered questions. The City, with SECOG's assistance, will be submitting applications to the Department of Environment & Natural Resources (DENR) for a $1,037,000 Clean Water State Revolving Fund (CW-SRF)

Loan. The interest Rate for the loan is 3.25% for a term of 30 years. Haak motioned to approve Resolution 2015-19, seconded by Sommerfeld. Motion Carried.

C.) 2015-20: Waste Water Treatement Facility Clean Water Application
Janice Gravning with SECOG addressed the Council and answered questions. Trent with DGR was also available to answer questions from the Council. The City, with SECOG's assistance, will be submitting an application to the Department of Environment & Natural Resources (DENR) for a $5,758,000 Clean Water State Revolving Fund (CW-SRF) Loan for the Wastewater Treatment Facility Project. The interest rate for the loan is 3.25% for a 30 year term. Sommerfeld motioned to approve Resolution 2015-20, seconded by Crisp. Motion carried.

Old Business
Ordinance No. 822 – Accept Referendum Petitions/Set Election Date

Accept Referendum - The floor was open to community members for questions. The questions revolved around what the referendum petition was for. City Administrator Weiland stated that the petitions received by the City of Dell Rapids were a formal, written request that Ordinance 822, as passed by the governing board of the municipality on October 19th, 2015, be submitted to the voters for their approval or rejection. Crisp motioned to accept the referendum petitions, seconded by sommerfeld. Motion carried.

Set Election Date – Crisp motioned to set the election date to coincide with the Municipal Election on April 12, 2016, seconded by Sommerfeld. Motion Carried.

Resolution No. 2015-13: 2016 Grand Opera House Operating Agreement
Burggraff motioned to table, seconded by Haak. Motion Carried.

Ordinance No. 825 Amend Section 21-39 Increase the Deposit for Water Service – 2nd Reading and Adoption
The Ordinance reflects a new deposit of $125.00 for renting or leasing property. Haak motioned to approve the 2nd reading of Ordinance No. 825, seconded by Klockman. Roll Call: Geraets – Aye, Sterud – Aye, Klockman – Aye, Crisp – Aye, Earley – Aye, Burggraff – Aye, Haak – Aye, Sommerfeld – Aye. Motion Carried 8-0.

New Business
Fire Department 2016 Agreement –
The City established a service agreement with the Dell Rapids Fire Department in 2013. This agreement for 2016 remains the same as 2015 with the contribution to the Fire Department set at $43,558.00.Burggraff moved to approve, seconded by Earley. Motion carried.

Minnehaha County Sherriff Department 2016 Agreement –
Minnehaha County gave notice prior to the 2016 Budget acceptance of a 2.8% increase for 2016 services. The Council discussed the agreement and asked questions on the service provided. Haak motioned to approve the 2016 agreement, seconded by Sterud. Motion carried.

Ordinance No. 827: Waste Water Rate Increase – First Reading

The City Council approved a 20% increase in sewer rates in the 2016 adopted budget. The Council agreed to the rate increase because of the impending wastewater treatment facility project. This increase will be the first of a phased in increase to cover the costs of the new treatment facility. The total increase will not be known until the City receives the final funding package from the DENR. The increase recommended is as follows:

- Increase base rate from $15.25 to $18.34.
- Increase per 1,000 gallons rate from $4.22 to $5.06
- Total increase 5,000 gallon user $7.26 per month.

Haak motioned to approve the first reading of Ordinance No. 827, seconded by Sommerfeld. Motion carried.

Chamber of Commerce Update

Dan Ahlers with the Chamber of Commerce addressed the Council. Mr. Ahlers updated the Council on their most recent accomplishments and events and provided plans for upcoming Chamber activities and events. The Chamber produces a newsletter for Chamber members, Christmas at the Dells was a bigger success than prior years, and they have holiday punch cards distributed in the community for a chance to win a Samsung Galaxy Tablet (purchased locally). The Chamber is also in the process of lining up vendors and entertainment for Quarry Days 2016 as well as working on a Shop Local Campaign.

Hwy 115 Project Phase 2 – T&C's Intersection Design

Mike Park of T&C's addressed the Council and has requested the Council consider the design for the south side of his property at the intersection of 4th Street and Hwy 115. Mr. Park is concerned that with the angle of the intersection large trucks and semis will have a hard time accessing the gas tanks if the entrance is reduced in size. However, Mr. Park is in favor of dressing up the corner and is willing to consider other types of curb such as rollover or gutter type curbs. Administration has had conversations with the DOT and it is their opinion that a 50 foot approach provides all the access that is needed and is the largest they allow anywhere in the state. The difference with this area is that it is within the City's jurisdiction. As such, they will follow the City's direction to a certain extent. The City and the DOT will need to work together to come to a mutual agreement on the T&C entrance footage. Burggraff motioned to work with the DOT to leave T&C's entrance as wide as it currently is to allow adequate access for Semi's and other large vehicles, seconded by Sommerfeld. Motion carried.

HWY 115 Project – DOT Temporary Construction Easements

The DOT is seeking signature of temporary construction easements on the following three properties 1.) City Shop, 2.) Dells Drive Overlook area 3.) leaf drop property. The DOT is offering $1,315.00 for the temporary easements which expire one year after the project is completed. Burggraff motioned to approve signature of the three requested temporary construction easements, seconded by Klockman. Motion carried.

Christmas Eve – City Hall Hours

Recommend the Council discusss and make a decision whether or not to allow the closure of the City officer on December 24th at 12:00 noon. Haak motioned to allow City Hall to close at 12:00 noon and the City employees to take 4 hours accrued vacation time, seconded by Sommerfeld. Motion carried.

Claims Payable

Earley moved to approve the claims as presented, seconded by Sommerfeld. Motion carried.

A-OX WELDING SUPPLY COMPANY, INC	NOVEMBER CYLINDER RENTAL	GENERAL FUND	28.27
ARGUS LEADER	NOVEMBER BILL	GENERAL FUND	691.54
BAARTMAN, CLAIRE	REIMB. FOR DUMP TRUCK LICE	GENERAL FUND	14.00
BEAL DISTRIBUTING, INC	NOVEMBER MALT	LIQUOR FUND	26,479.36
BORNS GROUP	NOVEMBER BILLING	WATER FUND	303.87
	NOVEMBER BILLING	WASTEWATER FUND	303.87
CEDAR SHORE RESORT	SAFETY TRAINING	GENERAL FUND	110.45
CENGAGE LEARNING, INC	2 BOOKS	GENERAL FUND	54.96
CITY OF DELL RAPIDS	NOVEMBER WATER BILL	GENERAL FUND	168.29
DAKOTA BEVERAGE CO, INC.	NOVEMBER MALT	LIQUOR FUND	17,550.21
DAKOTA SUPPLY GROUP	WATER SUPPLIES	WATER FUND	1,010.66
DAKOTA TECHNOLOGY CONSULTING	CH MANAGED SERVICES/BACKUP	GENERAL FUND	1,106.02
DELL RAPIDS ACE	STREET SUPPLIES	GENERAL FUND	144.06
	WATER SUPPLIES	WATER FUND	26.46
DELL RAPIDS LUMBER COMPANY	STREET SUPPLIES	GENERAL FUND	5.96
DELLS ELECTRIC, INC	STREET R&M	GENERAL FUND	192.00
	SEWER R&M	WASTEWATER FUND	107.94
DELLS FARM & TIRE	STREET R&M	GENERAL FUND	35.00
	TRANSIT ROTATE TIRES	GENERAL FUND	30.00
DELLS MATERIALS	STREET SUPPLIES	GENERAL FUND	96.00
DELTA DENTAL	DENTAL INS	GENERAL FUND	419.25
	DENTAL INS	WATER FUND	115.13
	DENTAL INS	WASTEWATER FUND	115.12
DGR	QUARTZITE STREET IMPROVEME	GENERAL FUND	7,878.00
	MISCELLANEOUS ENGINEERING	GENERAL FUND	240.00
	HWY 115 UTILITY REPPLACEME	WATER FUND	1,540.75
	HWY 115 UTILITY REPPLACEME	WASTEWATER FUND	1,540.75
	NORTHVIEW/10TH STREET	WASTEWATER FUND	1,439.63
	WWTF IMPROVEMENTS	WASTEWATER FUND	6,327.00
ED'S PRODUCE	STREET DEPARTMENT GLOVES	GENERAL FUND	121.00
EFTPS	FEDERAL WITHHOLDING	GENERAL FUND	7,194.84
	FEDERAL WITHHOLDING	WATER FUND	2,026.13
	FEDERAL WITHHOLDING	WASTEWATER FUND	2,026.16
ENTRINGER BACKHOE & TRENCHING, LLC	WATER R&M	WATER FUND	714.12
FIRST BANK CARD	CITY CAR - FUEL	GENERAL FUND	59.22
	BOOKS/SUPPLIES	GENERAL FUND	228.76
	OFFICE/SHOP SUPPLIES	GENERAL FUND	148.49
	OFFICE/SHOP SUPPLIES	WATER FUND	37.12
	OFFICE/SHOP SUPPLIES	WASTEWATER FUND	37.12
GARBAGE N MORE	DECEMBER GARBAGE SERVICE	GENERAL FUND	75.00
GEOTEK ENGINEERING & TESTING SERVICES,	QUARTZITE STREET	GENERAL FUND	2,537.50

	WWTF IMPROVEMENTS	WASTEWATER FUND	1,480.00
GLOBAL DISTRIBUTING	NOVEMBER LIQUOR	LIQUOR FUND	425.50
GOLDEN WEST TELECOMMUNICATIONS	NOVEMBER PHONE BILL	GENERAL FUND	428.31
	NOVEMBER PHONE BILL	LIQUOR FUND	46.09
	NOVEMBER PHONE BILL	WATER FUND	170.28
	NOVEMBER PHONE BILL	WASTEWATER FUND	211.05
GRUIS, KARLA	CLEAN CH/LIB	GENERAL FUND	960.00
HANSON LOGOWEAR INC	CLOTHING	GENERAL FUND	62.28
HD SUPPLY WATERWORKS	WATER SUPPLIES	WATER FUND	465.84
J D'S HOUSE OF TROPHIES	EARLEY NAME PLATE	GENERAL FUND	11.25
JOHNSON BROTHERS FAMOUS BRANDS INC	NOVEMBER LIQUOR	LIQUOR FUND	10,320.41
LG EVERIST, INC	SALT/SAND	GENERAL FUND	2,357.70
	SALT/SAND	GENERAL FUND	2,931.82
	STREET - CRUSHED ROAD STON	GENERAL FUND	356.76
	STREET SUPPLIES	GENERAL FUND	372.77
	STREET - CRUSHED ROAD STON	GENERAL FUND	271.67
LINWELD, INC	STREET SUPPLIES	GENERAL FUND	38.70
MIDAMERICAN ENERGY COMPANY	UTILITY BILL	GENERAL FUND	212.86
	UTILITY BILL	WATER FUND	14.99
	UTILITY BILL	WASTEWATER FUND	14.99
MINNEHAHA COMMUNITY WATER, CORP	NOVEMBER SHOP WATER	GENERAL FUND	12.17
	NOVEMBER WATER 6,057K @1.4	WATER FUND	8,843.22
	NOVEMBER SHOP WATER	WATER FUND	12.17
	NOVEMBER SHOP WATER	WASTEWATER FUND	12.16
MINNEHAHA COUNTY REGISTER OF DEEDS	REGISTER OF DEEDS	GENERAL FUND	90.00
NAPA AUTO PARTS	STREET SUPPLIES	GENERAL FUND	188.21
NORTHERN TRUCK EQUIPMENT CORP.	SNOW SUPPLIES	GENERAL FUND	500.82
PENWORTHY	BOOKS	GENERAL FUND	451.41
REPUBLIC NATIONAL DISTRIBUTING CO	LIQUOR 2ND HALF NOVEMBER	LIQUOR FUND	9,043.61
ROEMEN'S AUTOMOTIVE	TRANSIT BUS - OIL CHG AND	GENERAL FUND	137.10
SCHADE VINEYARD	NOVEMBER WINE	LIQUOR FUND	528.00
SCHUNEMAN EQUIPMENT COMPANY	SNOW SUPPLIES	GENERAL FUND	196.90
SD STATE TREASURER, DEPT OF REVENUE	OCTOBER RECREATION TAX	GENERAL FUND	119.86
	LOTTERY 11.01.15-11.15.15	LIQUOR FUND	1,459.37
SDRS SUPPLEMENTAL RETIREMENT PLAN	ROTH RETIREMENT	GENERAL FUND	290.00
	ROTH RETIREMENT	WATER FUND	50.00
	ROTH RETIREMENT	WASTEWATER FUND	50.00
SEATING AND ATHLETIC FACILITY ENTERPRI	RICKEMAN FIELD - GRANDSTAN	GENERAL FUND	58,112.00
SOUTH DAKOTA RETIREMENT SYSTEM	RETIREMENT	GENERAL FUND	3,387.49
	RETIREMENT	WATER FUND	999.22
	RETIREMENT	WASTEWATER FUND	999.21
SOUTH EASTERN COUNCIL OF GOVERNMENTS	2016 SECOG DUES	GENERAL FUND	4,870.00
STAN HOUSTON EQUIP.CO.INC.	WATER SUPPLIES	WATER FUND	475.00

THOMPSON REUTERS, PROFESSIONAL SOFTWAR	CS FA SYSTEM - PAYMENT 1 O	GENERAL FUND	1,012.30
A.J. SWANSON	A.J. SWANSON: KOMMES ATTY	GENERAL FUND	2,054.89
PRAIRIE BERRY WINERY	NOV WINE	LIQUOR FUND	714.00
WILDERMUTH, PAUL	CLOTHING	WATER FUND	97.97
	CLOTHING	WASTEWATER FUND	97.97
XCEL ENERGY	NOV UTILITY BILL	GENERAL FUND	3,762.32
	NOV UTILITY BILL	WATER FUND	621.85
	NOV UTILITY BILL	WASTEWATER FUND	573.11
PAYROLL EXPENSES	11/01/2015 - 11/30/2015	GENERAL FUND	31,436.93
		WATER FUND	8,326.63
		WASTEWATER FUND	8,326.65
			48,090.21

Administrator Report:

Personnel Annual Review(s) - Update: Public Works Director Schildhauer conducted personnel performance reviews for Public Works Equipment Operators, Paul Wildermuth, Les Fennicle and Chris Mergen. Based on performance Administrator Weiland and PW Director Schildhauer are recommending the following merit increases; Paul Wildermuth currently $18.60 per hour recommend 2% increase to $18.97, Les Fenicle currently $23.22 per hour recommend 2% increase to $23.66, and Chris Megen currently $17.70 per hour recommend 2% increase to $18.05. Each effective to anniversary dates of November 11th, November 14th, and November 10th, respectively. We thank these employees for their hard work and for their service making our community better.

SE Sewer Extension Connection District: The City has identified approximately 70 properties to connect to the SE sewer extension. Notice of hearings will be published, and hearings will be held for the property owners the first part of 2016.

10th Street Project – DOT Community Access Grant: The City has successfully received a $400,000 Community Access Grant from the Department of Transportation for the 10th Street project. Administration is working with Lance Mayer (DGR) to distribute the grant proceeds across the project and determine how this will affect the property owners. City Administration plans to present a proposed assessment plan to the Council at the December 21st meeting. Following approval from the Council Administration will communicate these newly proposed assessments with the property owners and begin the assessment process.

Xcel Energy Community Grant: The City was successful at obtaining a grant award of $6,250.00 from Xcel Energy to assist the City with the costs associated with the construction of Quartzite Street. Administration applied for the annual grant in October and wanted to take the opportunity to provide Xcel with a thank you and recognition for their grant. Administration also wanted to ask the Council if they wanted to keep the grant for the City or potentially forward the funds to the Economic Development Corporation to cover their costs associated with Quartzite Street and their recent efforts to attract Midwest Fresh Logistics. Sommerfeld motioned to forward the funds to the Dell Rapids EDC, seconded by Geraets. Motion carried.

Motion to adjourn at 9:22 by Burggraff, second by Haak. Motion carried.

Jean Crowe
LOGOUT

SAM.gov will be down for scheduled maintenance Saturday 10/31/2015 from 6:00 PM to 11:30 PM (EDT).

Entity Dashboard

Entity Overview

- Entity Record
  - Core Data
  - Assertions
  - Reps & Certs
  - POCs
- Reports
  - Service Contract Report
  - BioPreferred Report
- Exclusions
  - Active Exclusions
  - Inactive Exclusions
  - Excluded Family Members

RETURN TO SEARCH

Dell Rapids, City Of
DUNS: 170381602 CAGE Code: 5HE93
Status: Active

302 E 4th St
Dell Rapids, SD, 57022-1926 ,
UNITED STATES

Expiration Date: 10/27/2016
Purpose of Registration: Federal Assistance Awards Only

Entity Overview

Entity Information

Name: Dell Rapids, City Of
Doing Business As: City Hall
Business Type: US Local Government
POC Name: Claire Baartman
Registration Status: Active
Activation Date: 10/28/2015
Expiration Date: 10/27/2016

Exclusions

Active Exclusion Records? No

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.

Dell Rapids

Dell Rapids Wastewater Treatment Facility Plan

Dell Rapids, SD

July 2015

STOCKWELL
ENGINEERS

Contact:
Stockwell Engineers, Inc.
Sioux Falls, South Dakota
605.338.6668 phone
605.338.8750 fax

WASTEWATER TREATMENT FACILITY PLAN

FOR THE

CITY OF DELL RAPIDS

JULY 2015

SEI NO: 0915

I hereby certify that this report was prepared

by me or under my direct supervision and that

I am a duly Registered Professional Engineer

under the laws of the State of South Dakota.

7-17-15

Jon R. Brown, P.E.

S.D. Registration No. 6853

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 6853
JON R. BROWN
SOUTH DAKOTA

STOCKWELL
ENGINEERS

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INTRODUCTION

PURPOSE OF STUDY

The City of Dell Rapids selected Stockwell Engineers, Inc. (SEI) to complete a Wastewater Treatment Facility Plan. The City is under a compliance schedule to make improvements to their wastewater treatment system. This study identifies the deficiencies that the system has based on the South Dakota Design Criteria Manual and presents options to fix these deficiencies. The City of Dell Rapids can use this plan to budget for future projects and to obtain grant and loan funding for the proposed improvements.

SCOPE OF STUDY

The scope of the agreement is as follows:

1) Provide existing maps, plans, relevant information, wastewater fund financial records, customer connections, billed water records, number and size of existing water meters, building permits and lift station pumping records.
2) Complete a general population analysis.
3) Evaluate existing wastewater treatment system for 180-day storage with upgrades to aeration, submerged attached growth reactor, 210-day storage with irrigation, cursory review of mechanical treatment and cursory review of regionalization with Sioux Falls.
4) Assist is State Water Plan and DENR funding applications.
5) Outline need for improvements.
6) Make recommendations for improvements to meet future growth requirements.
7) Prepare "Engineers Estimate" of probable construction cost for the Project.
8) Present "draft" study at special Council meeting.
9) Address Clients comments.
10) Submit 10 copies of final study Client.

COMMUNITY INFORMATION

GENERAL

The City of Dell Rapids is a Class 2 Municipality located in north central Minnehaha County east of Interstate 29. Minnehaha County is located in southeastern South Dakota. The City is governed by a Mayor and eight council members. The City has an Administrator, Finance Officer and Public Works Director that oversee the day-to-day activities. Dell Rapids was incorporated as a City in 1917.

FINANCIAL STATISTICS

Based on the 2000 Census, Dell Rapids has a median household income of $42,572 compared to the state average of $35,282. The 2000 Census also reported that 1.9% of the families in Dell Rapids had incomes below the poverty level compared to the state average of 9.3%.

POPULATION STATISTICS

Based on the 2010 census, Dell Rapids has a population of 3,633. The City's population has remained steady and shown a strong growth since 1950. Most of the other communities in South Dakota have seen a decline in recent years. The 2010 census indicated that 15.0% of the people living in Dell Rapids were over the age of 65 compared to 14.3% for the State of South Dakota. It is anticipated that the population will continue to increase due to Dell Rapids close proximity to Sioux Falls and their long history of growth. The population for 2015 was based on the building permits since 2010. SECOG completed a comprehensive plan in 2008 and projected the population would be 4,149 in 2028. The 2010 census produced a higher population than SECOG used in their projection. Therefore, the more conservation projection will be used. The future projections were based on the average population increase of 2% since 1990.

Table 1 Population Statistics

Year	Population	Year	Population
1890	993	1990	2,484
1900	1,255	2000	2,980
1910	1,367	2010	3,633
1920	1,677	2014	3,769
1930	1,657	2015 (proj.)	3,816
1940	1,706	2020 (proj.)	4,214
1950	1,650	2025 (proj.)	4,653
1960	1,863	2030 (proj.)	5,138
1970	1,991	2035 (proj.)	5,673
1980	2,389		

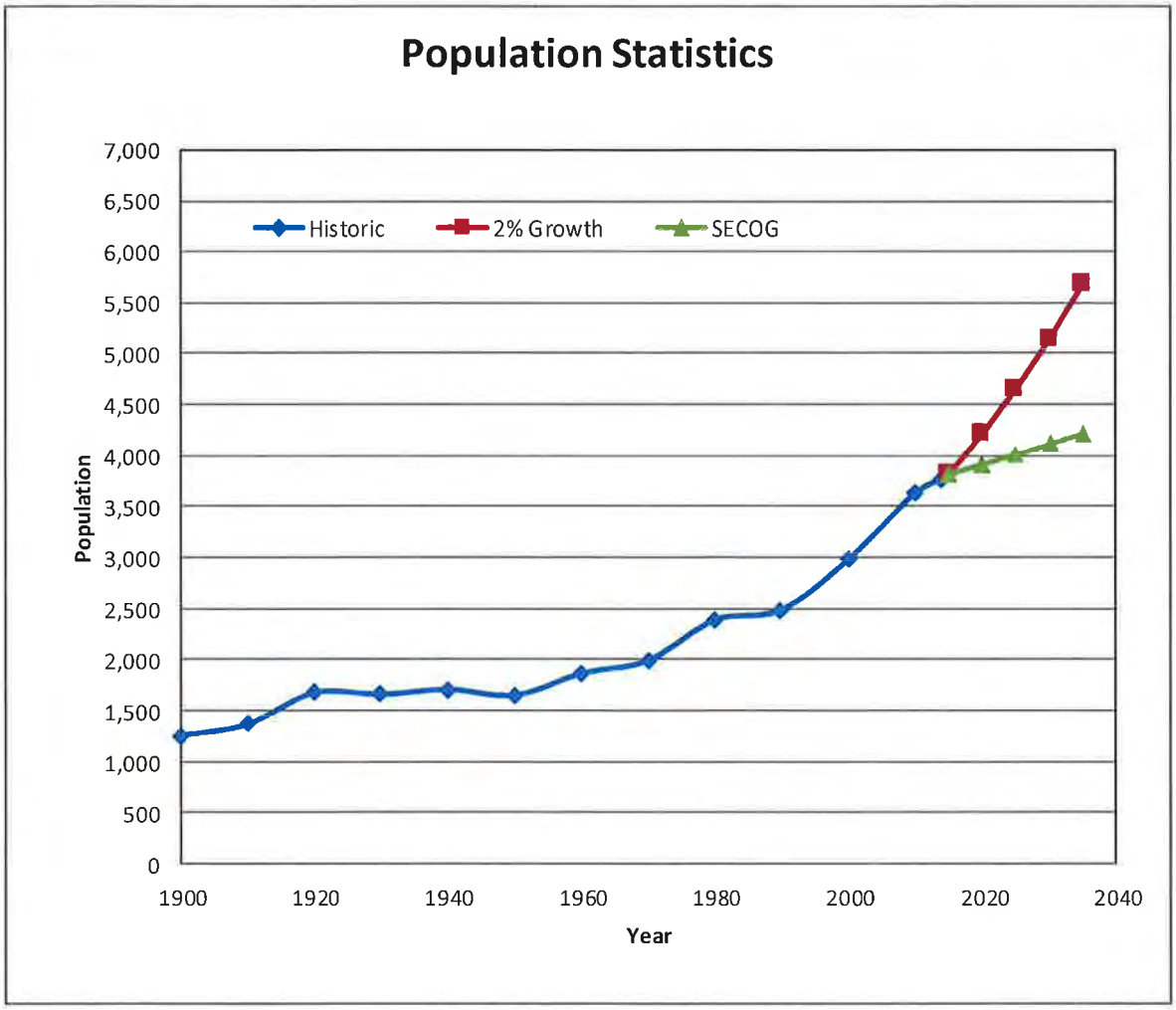

Figure 1 Population Statistics

EXISTING WASTEWATER SYSTEM

WASTEWATER FLOWS

The wastewater flows in a collection system are comprised of domestic water and clear water. Domestic water comes from homes and businesses while clear water comes from rain water and ground water. Clear water is also called infiltration and inflow (I & I). Infiltration is ground water leaking through joints and cracks in the pipe as well as manhole walls. Inflow which consists of sump pumps, roof drains, perforated manhole covers and storm sewer that are connected to the sanitary collection system. Every system is subject to some level of I & I. When I & I becomes excessive, there is potential for sewage backups and flooding of basements.

Domestic wastewater flow can be determined using water use records. The SD Design Criteria states that projected wastewater flows for a community could be calculated by using 80% of the actual water consumption. This is typically applied to the winter months of December, January and February. These months are used because there is little water usage that does not reach the collection system. During these winter months it can be assumed that 100% of metered water at the homes reaches the collection system. The City didn't have actual monthly billed gallons but they did provide monthly purchased records from Minnehaha Community Water Corporation (MCWC). Based on these records for the last two years, the City purchased 210,158 gallons per day (gpd). Since 2006 the City has average 7.3% water loss. This results is 194,834 gpd that can be assumed to be going down the sewer.

Based on these records, the average daily flow is 52 gallons per capita per day (gpcpd) in the winter months. Chapter I.C.2 of the SD Design Criteria states that an alternate method to determine design capacity could be justified by local water consumption records but shall not be less than 60 gpcpd. For purposes of this study 60 gpcpd or 228,960 gpd will be used for the current population and 340,380 gpd will be used for the future population.

The City has a main lift station that pumps all the wastewater flow to the treatment system. The City provided lift station records dating back to May of 2010. SEI used the records to determine average flows. The amount of I & I can be determined by comparing the calculated domestic wastewater flows to the pumping records. This results in an average I & I flow rate of -10,902 gpd (218,058 gpd – 228,960 gpd). Typically this value will not be negative because systems are experiencing some level of I & I. A potential reason for the negative number is the flow meter is not reading accurately at the main lift station. It was contemplated to calibrate the lift station and use the hours meter readings. However, the pumps are on variable frequency drives causing the pumps to ramp up and down which changes the pumping rate. In addition the pumps are not

running at full hertz so the hour meter readings would shows a higher pumping grate. In order to account for some I & I the DENR minimum flow of 75 gpcpd for communities with daily flows of less than 1 MGD will be used.

Typically infiltration is considered constant during the winter months because the ground is frozen and the water table is stable. During the summer months, wet periods and dry periods can affect the ground water table having a significant effect on the I & I rates. As the ground water table rises, more of the collection system becomes submerged and therefore, the amount of infiltration increases. The higher the groundwater table, the higher the pressure is on the sewer, forcing more water into the system.

The Environmental Protection Agency (EPA) has established guidelines to determine dry weather flow and wet weather flow. The dry weather flow is 120 gpcpd and the wet weather flow is 275 gpcpd. Wastewater flows over these amounts are considered excessive. The dry weather period is during the winter months when the collection system is subject to domestic flow and infiltration. The wet weather period is during the summer when the collection system is subject to domestic flow, infiltration and inflow. Based on these limits, the City of Dell Rapids should not have experienced flows over 457,920 gpd (120 gpcpd x 3,816) during December, January and February. The wet weather flows should not exceed 1,049,400 gpd (275 gpcpd x 3,816). The lift station records show the wet weather flow was exceeded 7 days since May of 2010.

WASTEWATER TREATMENT

Dell Rapids' wastewater treatment system was built in 1974 and it is located southwest of the community. In 2000 cell three was added and the depth of cell two was increased. The system operates under Surface Water Discharge (SWD) Permit #SD0022101 and is permitted to "Discharge" to the Big Sioux River. A copy of the permit can be found in Appendix A. The aeration cell has a water surface area of 1.1 acres, cell two has a water surface area of 9.2 acres, cell three has a water surface area of 4.99 acres and cell four has a water surface area of 3.4 acres. Cell two has an effective storage depth of six feet, cell three has an effective storage depth of six feet and cell four has an effective storage depth of eight feet. Typically, the dikes are built with the top three feet for freeboard and the bottom two feet for residual storage resulting in an effective storage depth of three feet. Freeboard is used as a safety factor and the water level should never reach the freeboard. The freeboard also keeps wave action from overtopping the berm and creating a breach of the berm. The SD Design Criteria allows the effective storage depth to be three feet in the primary, four feet in the secondary and six feet in all subsequent cells. However, the depth can be increased due to the aeration cell. The aeration cell has a total water depth of 11 feet. The existing treatment system is shown in the following figure.

EXISTING WASTEWATER SYSTEM

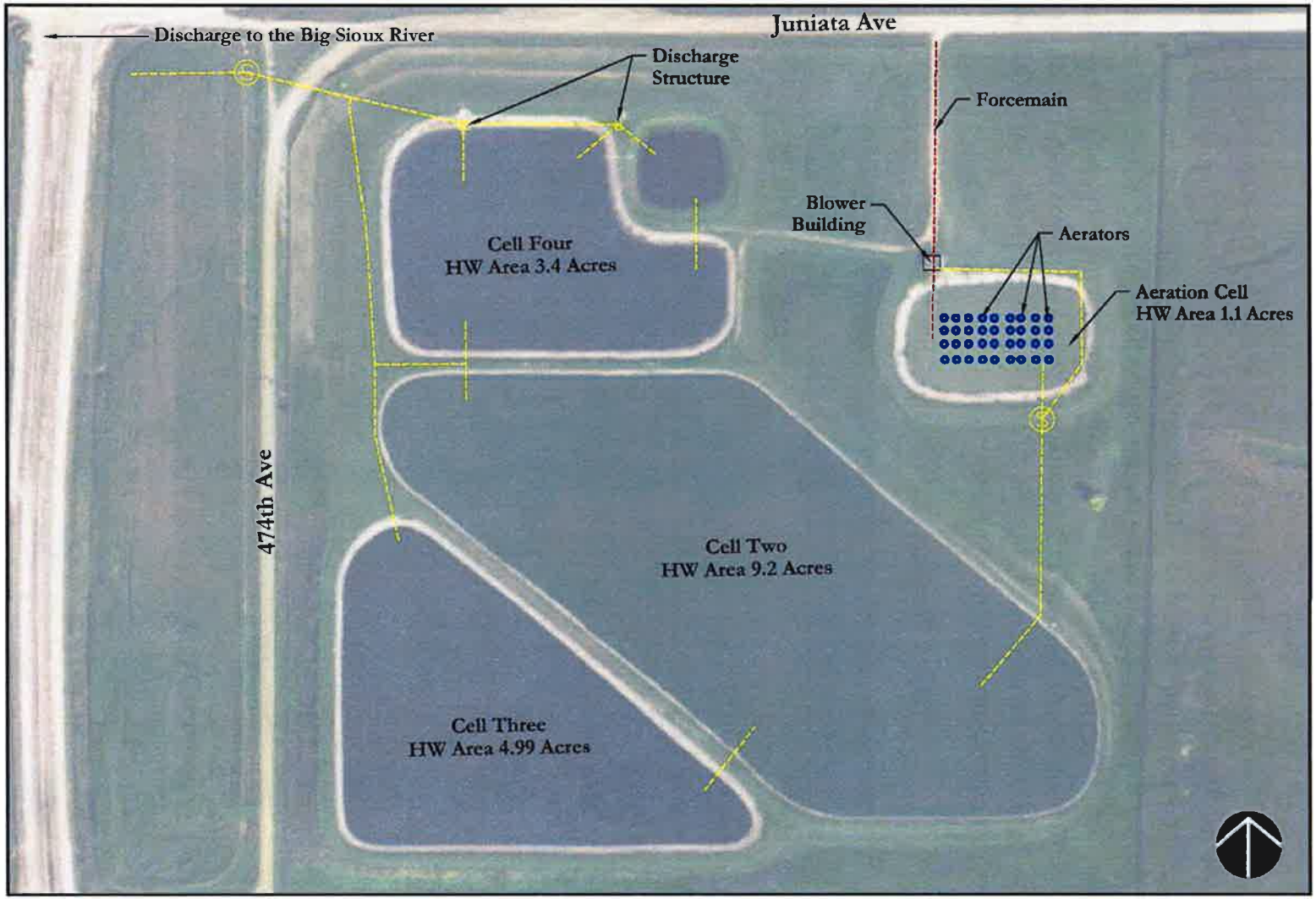

Figure 2 Existing Treatment System

WASTEWATER TREATMENT HYDRAULIC LOADING

There are two elements to consider when sizing a treatment system. The element that provides the larger size governs. The first way is to calculate the hydraulic loading or the amount of wastewater that is flowing to the treatment system. The following table shows the wastewater flows that the treatment system is experiencing. Due to the low per capita flows that were recorded at the lift station an additional 15 gpcpd is add as infiltration and inflow in order to increase the per capita flows to the DENR minimum of 75 gpcpd for communities with flows of less than 1 MGD. The table also shows the projected hydraulic loading for the treatment system. The current treatment system is overloaded hydraulically as shown by the negative values.

Table 2 Treatment System Hydraulic Loading

	Current 2015	Future 2035
Population	3,816	5,673
Wastewater Flow (gpcpd)	60	60
Infiltration & Inflow (gpd)	57,240	85,095
Design Storage Time (days)	180	180
Total Pond Influent (gal)	51,516,000	76,585,500
Aeration		
0.75 ac x 43560 x 11 x 7.48	2,670,823	2,670,823
Cell Two		
7.96 ac x 43560 x 6 x 7.48	15,569,935	15,569,935
Cell Three		
4.47 ac x 43560 x 6 x 7.48	8,747,472	8,747,472
Cell Four		
2.41 ac x 43560 x 8 x 7.48	6,293,255	6,293,255
Total Storage (gal)	33,281,485	33,281,485
Remaining Storage (gal)	-18,234,515	-43,304,015
Additional Storage Req. @ 6'(ac)	**9.3**	**22.1**

WASTEWATER TREATMENT ORGANIC LOADING

The second way to size a treatment system is to calculate the organic loading. The SD Design Criteria states in Section B.1.a of Chapter IV that the maximum design loading on the primary cell shall not exceed 30 pounds of Biochemical Oxygen Demand (BOD_5) per acre. Based on this criteria, the primary pond should receive less than 276 pounds of BOD_5. Furthermore, Section B.1.d states the total organic loading for the total surface area shall not exceed 20 pounds BOD_5 per acre per day. Based on this criteria, the treatment system should receive less than 352 pounds of BOD_5. The SD Design Criteria also states that on average a person will generate 0.17 pounds of BOD_5. Wastewater sampling completed in February of 2015 indicated the average influent composite BOD sample was 304 mg/L. This results in a per capita loading of 0.11 lbs per person per day. In order to be conservative, the DENR minimum of 0.17 lbs will be used. Results of the influent sampling are shown in the following table.

Table 3 Influent Samples

Date	BOD5 (mg/L)	TSS (mg/L)	TDS (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total Phosphorus (mg/L)	Alkalinity (mg/L)	Fecal (col/100 ml)
2/2/2015	250	100	920	47	58	6.7	230	2,750,000
2/3/2015	250	160	940	43	56	6.8	240	3,840,000
2/4/2015	400	250	900	43	60	8.0	230	4,170,000
2/5/2015	370	210	960	41	59	5.0	230	2,700,000
2/6/2015	250	250	970	47	58	7.8	510	4,280,000
Average	304	194	938	44	58	7	288	3,548,000

The following table shows the treatment system is currently overloaded organically. The treatment system is still overloaded even if the influent sampling value of 0.11 lbs is used.

Table 4 Treatment System Organic Loading

	Current 2015	Projected 2035
Population	3,816	5,673
Per Capita Loading (lbs)	0.17	0.17
Total Loading (lbs)	649	964
Aerated Effluent (lbs)* assumed	546	861
Primary Loading Limit (lbs/ac)	30	30
Primary Size Required (ac)	18.2	28.7
Total System Loading Limit (lbs/ac)	20	20
Total System Size Required (ac)	32.4	48.2

PERMIT VIOLATIONS

A review of the Discharge Monitoring reports (DMR) indicated that the City has had six ammonia violations since 2007. These violations have typically happened in the spring and winter. This would be consistent with the reduced treatment that the system would provide over the winter. Typically the colder water temperatures and ice covering the cells reduces the treatment capability in a facultative system. The violations are shown in the following table.

Table 5 Ammonia Violations

Date	30-Day Average (mg/L)	Daily Max (mg/L)
5/31/2008	20.6	
9/30/2010	2.6	
12/31/2010	21.6	27.9
5/31/2011	21.4	
5/31/2013	19.2	

Due to the violations the DENR has included a compliance schedule in the City's new Surface Water Discharge Permit. The compliance schedule is shown below.

a) The city shall submit quarterly progress updates to the SDDENR until construction is completed. The first update is due by January 1, 2015.
b) The city shall hire a professional engineer to conduct a study to determine the steps they will take to upgrade their wastewater treatment facility in order to meet effluent limits. The study shall be submitted to SDDENR by April 1, 2015

c) The city shall submit plans and specifications for any required upgrades to SDDENR for review and approval by April 1, 2016. The plans and specifications must be prepared by a professional engineer.
d) The city shall begin construction by July 1, 2017.
e) The city shall complete construction by October 1, 2018.

In order to comply with funding rounds the City is asking the DENR to revise the interim date for the plan submittal from April 1, 2016 to December 1, 2016.

AERATION

An aeration cell was constructed when the treatment system was built in 1974. This coarse bubble aeration cell has a water surface area of 1.1 acres and is 11' deep. The inside side slopes are a 4:1. Current engineering practices and the SD Design Criteria have been updated since the aeration cell was constructed. Some of the deficiencies of the aeration system are as follows:

1. The detention time is not long enough.
2. There should be a minimum of two cells for increased treatment and operational flexibility.
3. The inside slopes should be increased to prevent short circuiting of the wastewater around the diffusers.
4. The cell should be deeper.

Figure 3 Aeration Cell

SLUDGE

On March 10, 2015, SEI conducted a sludge survey of ponds two and three. Holes were drilled through the ice and the top of the sludge and bottom of the pond were measured. The survey determined the average sludge depth was 0.62 ft in cell two and cell three had a very limited amount if any sludge in it. The City should continue to monitor the sludge depth. If the depth becomes excessive then the sludge can be removed by dredging and the biosolids can be land applied as fertilizer.

FUTURE CONDITIONS

Population and connection information for the City of Dell Rapids is shown in the Community Information Section. Based on that information, it is anticipated that the population will continue to grow. The City has room to accommodate any future growth that may occur.

DEVELOPMENT OF WASTEWATER ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

Each of the following alternatives includes an estimate of the total project cost. Included in the total project cost are the construction cost, contingencies, legal and administration, engineering and testing costs. It should be noted that these are only estimates and does not guarantee the cost of actual construction. Field measurements will be taken during the design phase to complete a more accurate estimate. Contract prices can be affected by project location, year built, contractor work load, project size, contract time and the time of year that the project is built. These estimates should be updated on a yearly basis to reflect current industry conditions. Inflation factors have not been included in the estimates.

EQUIVALENT UNIFORM ANNUAL COST

When choosing the most cost effective solution to a problem, you have to consider the initial cost, long term cost and lifetime of the system. The alternative that reflects the cheapest initial cost may not be the least expensive alternative when operation and maintenance cost are taken into account. The capital cost and equivalent uniform annual cost (EUAC) are provided for some of the alternatives. The EUAC is evaluated over 20 years and an interest rate of 3.0% to provide the long term costs. The salvage value at the end of 20 years will be 0% or 60% except land cost will be 100%. The EUAC will provide the owner with the best long term solution.

WASTEWATER TREATMENT ALTERNATIVES

The following alternatives were developed to correct the deficiencies listed below:

1) The treatment system has had several discharge violations.
2) The treatment system is overloaded hydraulically.
3) The treatment system is overloaded organically.
4) The aeration system is undersized and has potential for short circuiting.
5) The pond piping has the potential for short circuiting.

PERMIT LIMITS

The Environmental Protection Agency directs the SD DENR on what they want the Water Quality Standards to be. The DENR renews their Water Quality Standards every three years. The latest revision just occurred just last year. The following table shows Dell Rapids current discharge limits. These limit will be in effect until the permit expires on September 30, 2019.

Table 6 Current Discharge Limits

	30-Day Average	7-Day Average	Daily Maximum
BOD5 (mg/L)	30	45	N/A
Total Suspended Solids (mg/L)	90	135	N/A
E. coli (#/100mL)	126	N/A	235
Total Coliform (#/100mL)	5,000	N/A	20,000
Ammonia-Nitrogen (mg/L)			
January	4.6	N/A	8.1
February	4.6	N/A	8.1
March	2.9	N/A	8.1
April	15.9	N/A	69.3
May	15.9	N/A	69.3
June	1.6	N/A	2.9
July	1.6	N/A	2.9
August	1.6	N/A	2.9
September	1.6	N/A	2.9
October	3.8	N/A	6.6
November	3.8	N/A	6.6
December	4.6	N/A	8.1
pH	6.5 - 9.0		

Kathleen Grigg with the SD DENR was contacted about what the future discharge limits would be. Projected flows for 180-day storage and continuous discharge were provided to Kathleen. She calculated the following limits based on the proposed ammonia criteria the DENR plans to implement in two years. Each community would have an implementation schedule added to their permit when they renew. Proposed alternatives to the wastewater treatment system will be designed for these lower treatment limits.

Table 7 Future 180-Day Discharge Ammonia Limits

Month	30-Day Average @ 2.44 cfs
January	3.1
February	1.6
March	1.2
April	8.5
May	7.2
June	4.9
July	1.7
August	1.5
September	2.3
October	4.4
November	4.2
December	4.5

Table 8 Future Continuous Discharge Ammonia Limits

Month	30-Day Average @ 0.66 cfs
January	7.1
February	2.7
March	2.2
April	30.4
May	25.5
June	16.8
July	5.6
August	4.9
September	7.9
October	14.9
November	13.4
December	13.2

The DENR also indicated that nutrient removal would be required when their Water Quality Standards renew in 2020. Preliminary indications are that total nitrogen would be less than ten and phosphorus would be less than one. These removal processes are not included in the estimates but the City should be aware of the future requirements.

ENVIRONMENTAL CONSTRAINTS

The construction of a new wastewater treatment facility or the expansion of the existing facility requires the setback requirements of the Design Criteria to be met. These requirements include environmental constraints and setbacks. The following figure shows floodplains and wetlands.

Existing potable wells and water source protection districts can also cause location constraints. The DENR Design Criteria requires ponds be 1,000 from a potable well. If irrigation is considered then the site needs to be one mile from a municipal water supply and one-fourth mile from a private domestic water supply. The water source protection district is governed by the county. The following figure shows the protection district surrounds the existing ponds. Once an area is annexed the county doesn't have the authority to enforce the protection district.

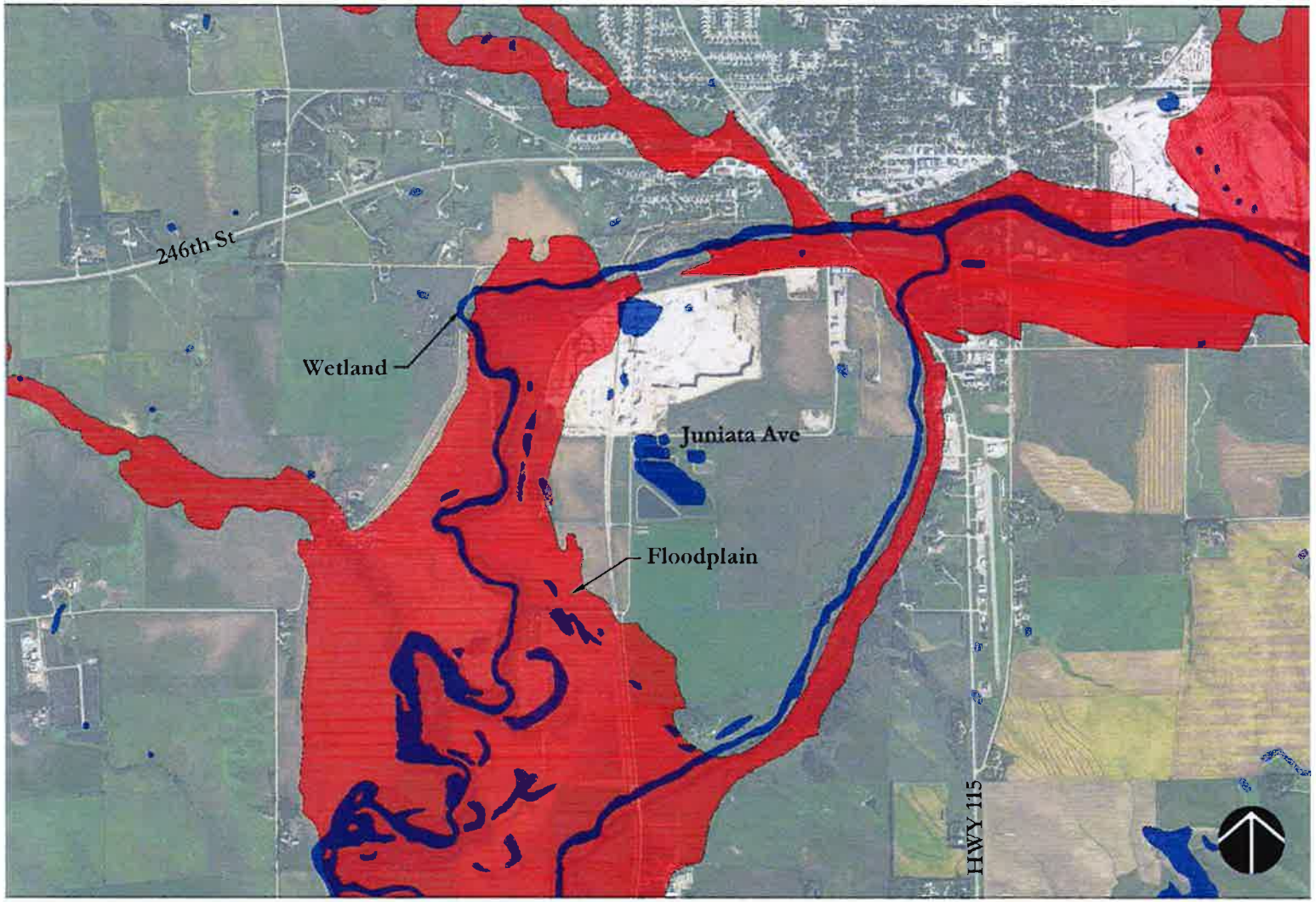

Figure 4 Floodplain and Wetlands

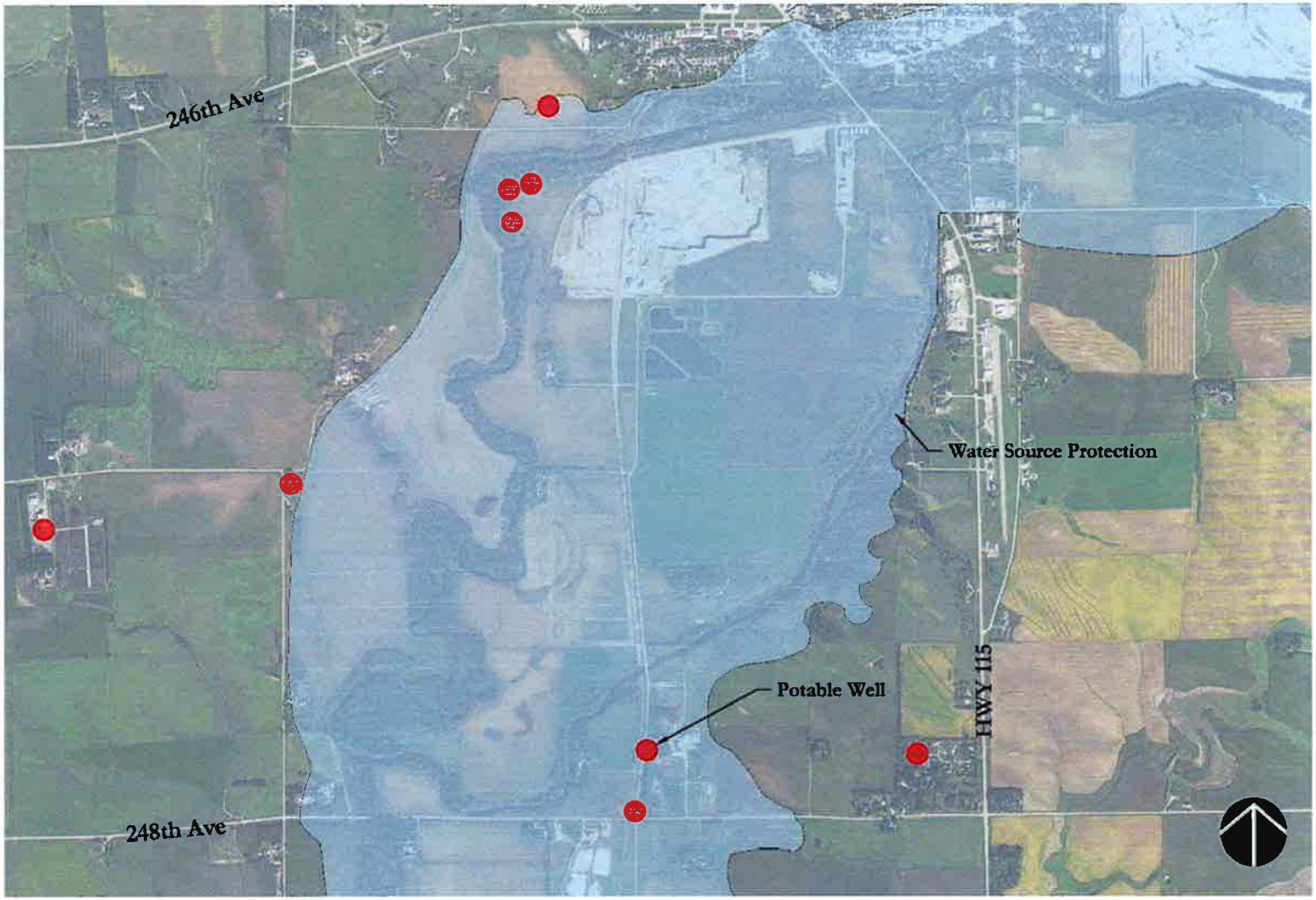

Figure 5 Potable Wells and Water Source Protection District

TREATMENT ALTERNATIVE 1: DO NOTHING

The first treatment alternative is the "Do Nothing" alternative. This alternative is not considered acceptable because it will not address the negative deficiencies.

TREATMENT ALTERNATIVE 2: 180-DAY STORAGE WITH AERATION

Treatment Alternative 2 proposes the City add additional storage to meet the 20-year design flows and add new fine bubble aeration cells. The treatment process in traditional facultative ponds is limited by water temperature and oxygen. Aeration systems do not rely on natural surface aeration or algae to provide oxygen in the water. Diffusers on the bottom of the cell allow the air bubbles to rise that causes mixing and convection between the diffusers. The solids settle out and the air bubbles rise. The solids that accumulate on the bottom have more oxygen because of the placement of the diffusers therefore increasing biodegradation. This mixing process also helps reduce the temperature stratification in the cells that causes turnover and smell in the spring.

The proposed hydraulic loading and cost estimate are shown in the following tables. The operation and maintenance costs are based on the manufacturer's recommendation at full build-out. Future nutrient removal costs have not been included. This alternative would abandon the existing aeration cell and blower building, build new aeration cells, a new 16 acre cell and expand the existing cell four. Thirty acres of land would need to be purchased in order to build the new cells. It is anticipated that land acquisition will be difficult. This system would continue to discharge twice a year to the Big Sioux River.

Table 9 Hydraulic Loading for 180-Day Storage

	Proposed
Population	5,673
Wastewater Flow (gpcpd)	60
Infiltration & Inflow (gpd)	85,095
Design Storage Time (days)	180
Total Pond Influent (gal)	76,585,500
Aeration	
2.8 ac x 43560 x 15 x 7.48	13,685,724
Cell Two	
15 ac x 43560 x 6 x 7.48	29,326,552
Cell Three	
7.96 ac x 43560 x 6 x 7.48	15,569,935
Cell Four	
4.47 ac x 43560 x 6 x 7.48	8,747,472
Cell Five	
5.3 ac x 43560 x 6 x 7.48	10,363,664
Total Storage (gal)	77,693,348
Remaining Storage (gal)	1,107,848

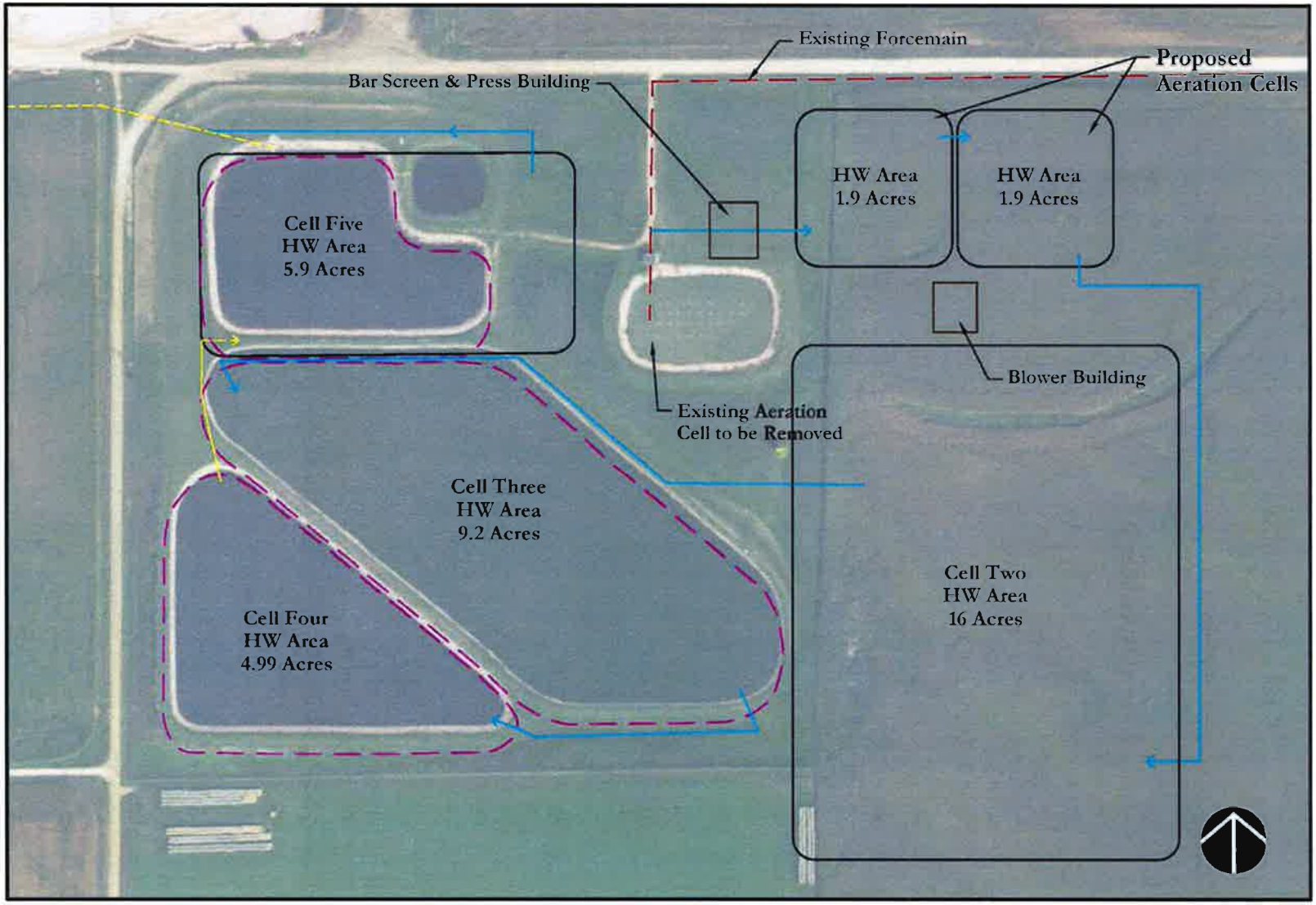

Figure 6 Treatment Alternative 2

Table 10 Cost Estimate for Treatment Alternative 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$328,000.00	$328,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Traffic Control	1	LS	$5,000.00	$5,000.00
5	Gravel Surfacing	3,000	TON	$15.00	$45,000.00
6	Unclassified Excavation	221,000	CY	$3.00	$663,000.00
7	Salvage & Place Topsoil	15,000	CY	$5.00	$75,000.00
8	Scarify & Recompact Liner	112,000	SY	$1.00	$112,000.00
9	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
10	Class B Rip Rap	25,000	TON	$35.00	$875,000.00
11	Type B Drainage Fabric	34,000	SY	$3.00	$102,000.00
12	Dewatering	1	LS	$15,000.00	$15,000.00
13	12" DIP Piping	170	LF	$75.00	$12,750.00
14	12" Gate Valve & Box	6	EA	$3,500.00	$21,000.00
15	Concrete Water Stop	12	EA	$500.00	$6,000.00
16	Pond Inlet Structure	4	EA	$3,000.00	$12,000.00
17	Pond Outlet Structure	4	EA	$4,000.00	$16,000.00
18	Pond Depth Indicators	4	EA	$4,000.00	$16,000.00
19	12" PVC Gravity Sewer	4,300	FT	$45.00	$193,500.00
20	12" Sanitary Bedding Material	4,300	FT	$5.00	$21,500.00
21	Bar Screen & Press	1	LS	$212,000.00	$212,000.00
22	Blower & Bar Screen Buildings	2	EA	$70,000.00	$140,000.00
23	Control & SCADA System	1	LS	$50,000.00	$50,000.00
24	Electrical Service	1	LS	$25,000.00	$25,000.00
25	Aeration System	1	LS	$318,000.00	$318,000.00
26	Aeration Site Piping	500	LF	$30.00	$15,000.00
27	Concrete Anchor Posts	20	EA	$200.00	$4,000.00
28	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
29	Connect to Existing Piping	1	EA	$2,500.00	$2,500.00
30	Sanitary Sewer Manhole	5	EA	$3,500.00	$17,500.00
31	Sludge Removal	6,800	CY	$30.00	$204,000.00
32	Woven Wire Fence	4,600	FT	$6.00	$27,600.00
33	Seeding, Fertilizing & Mulching	28,000	SY	$1.50	$42,000.00
				Subtotal	$3,606,850.00
				Contingencies (15%)	$542,000.00
		Total Estimated Construction Costs			**$4,148,850.00**
				ENGINEERING	**$558,000.00**
				LAND PURCHASE (30 AC.)	**$600,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$166,000.00**
				TOTAL ESTIMATED PROJECT COST	**$5,472,850.00**

Table 11 EUAC for Treatment Alternative 2

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$328,000	$0	$0	$328,000
Clearing	$10,000	$0	$0	$10,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Traffic Control	$5,000	$0	$0	$5,000
Gravel Surfacing	$45,000	$0	$0	$45,000
Unclassified Excavation	$663,000	$0	$0	$663,000
Salvage & Place Topsoil	$75,000	$0	$0	$75,000
Scarify & Recompact Liner	$112,000	$0	$0	$112,000
Pond Site Warning Signs	$3,000	$1,800	$997	$2,003
Class B Rip Rap	$875,000	$525,000	$290,680	$584,320
Type B Drainage Fabric	$102,000	$0	$0	$102,000
Dewatering	$15,000	$0	$0	$15,000
12" DIP Piping	$12,750	$7,650	$4,236	$8,514
12" Gate Valve & Box	$21,000	$12,600	$6,976	$14,024
Concrete Water Stop	$6,000	$3,600	$1,993	$4,007
Pond Inlet Structure	$12,000	$7,200	$3,986	$8,014
Pond Outlet Structure	$16,000	$9,600	$5,315	$10,685
Pond Depth Indicators	$16,000	$9,600	$5,315	$10,685
12" PVC Gravity Sewer	$193,500	$116,100	$64,282	$129,218
12" Sanitary Bedding Material	$21,500	$0	$0	$21,500
Bar Screen & Press	$212,000	$127,200	$70,428	$141,572
Blower & Bar Screen Buildings	$140,000	$84,000	$46,509	$93,491
Control & SCADA System	$50,000	$30,000	$16,610	$33,390
Electrical Service	$25,000	$15,000	$8,305	$16,695
Aeration System	$318,000	$190,800	$105,641	$212,359
Aeration Site Piping	$15,000	$9,000	$4,983	$10,017
Concrete Anchor Posts	$4,000	$2,400	$1,329	$2,671
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Piping	$2,500	$0	$0	$2,500
Sanitary Sewer Manhole	$17,500	$10,500	$5,814	$11,686
Sludge Removal	$204,000	$0	$0	$204,000
Woven Wire Fence	$27,600	$0	$0	$27,600
Seeding, Fertilizing & Mulching	$42,000	$0	$0	$42,000
Land Purchase	$600,000	$600,000	$332,205	$267,795
Remaining Capital Costs	$1,266,000	$0	$0	$1,266,000
Total Construction Cost	**$5,472,850**	**$1,762,050**	**$975,604**	**$4,497,246**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Diffuser Membrane Replacement	$4,000			$59,510
Aeration Blowers	$30,000			$446,324
Labor	$17,000			$252,917
Total Annual Cost	**$51,000**			**$758,751**
			Total Net Present Worth	**$5,255,997**
			EUAC	**$353,286**

TREATMENT ALTERNATIVE 3: SAGR SYSTEM

Treatment Alternative 3 proposes the City add fine bubble aeration and a Submerged Attached Growth Reactor (SAGR). The treatment process in traditional facultative ponds is limited by water temperature and oxygen. Aeration systems do not rely on natural surface aeration or algae to provide oxygen in the water. Diffusers on the bottom of the cell allow the air bubbles to rise that causes mixing and convection between the diffusers. The solids settle out and the air bubbles rise. The solids that accumulate on the bottom have more oxygen because of the placement of the diffusers therefore increasing biodegradation. This mixing process also helps reduce the temperature stratification in the cells that causes turnover and smell in the spring.

The second limiting factor in treatment is water temperature. The SAGR process has developed a way to provide nitrification in cold climates. The SAGR beds are made of clean gravel beds that evenly distribute wastewater flow across the width of the cell. Aeration is added to the floor of the SAGR causing aerobic conditions and nitrification. This process has been proven in Canada and has started to expand south into the United States. Currently, there are several sites in operation or under construction in Iowa. In addition, there is a SAGR in operation at Sylvan Lake in the Black Hills.

The proposed hydraulic loading and cost estimate are shown in the following tables. The operation and maintenance costs are based on the manufacturer's recommendations. These costs are based on full build-out. Future nutrient removal requirements have not been included. This alternative would replace the aeration equipment in cell one, add aeration to the existing cell two and three and build SAGR cells in the existing cell four. This system would be continuous discharge to the Big Sioux River. One huge benefit of this alternative is land acquisition would not be necessary. In addition, the City would not have to deal with annexation and the issue with the water source protection district.

Table 12 Hydraulic Loading for SAGR

	Proposed
Population	5,673
Wastewater Flow (gpcpd)	60
Infiltration & Inflow (gpd)	85,095
Average Annual Influent (gpd)	425,475
Wet Weather Influent (gpd)	1,128,705
Cell One	
0.75 ac x 43560 x 11 x 7.48	2,670,823
Cell Two	
7.96 ac x 43560 x 8x 7.48	20,759,914
Cell Three	
4.47 ac x 43560 x 8 x 7.48	11,663,296
Total Storage (gal)	35,094,033
Aeration Detention Time (days)	31

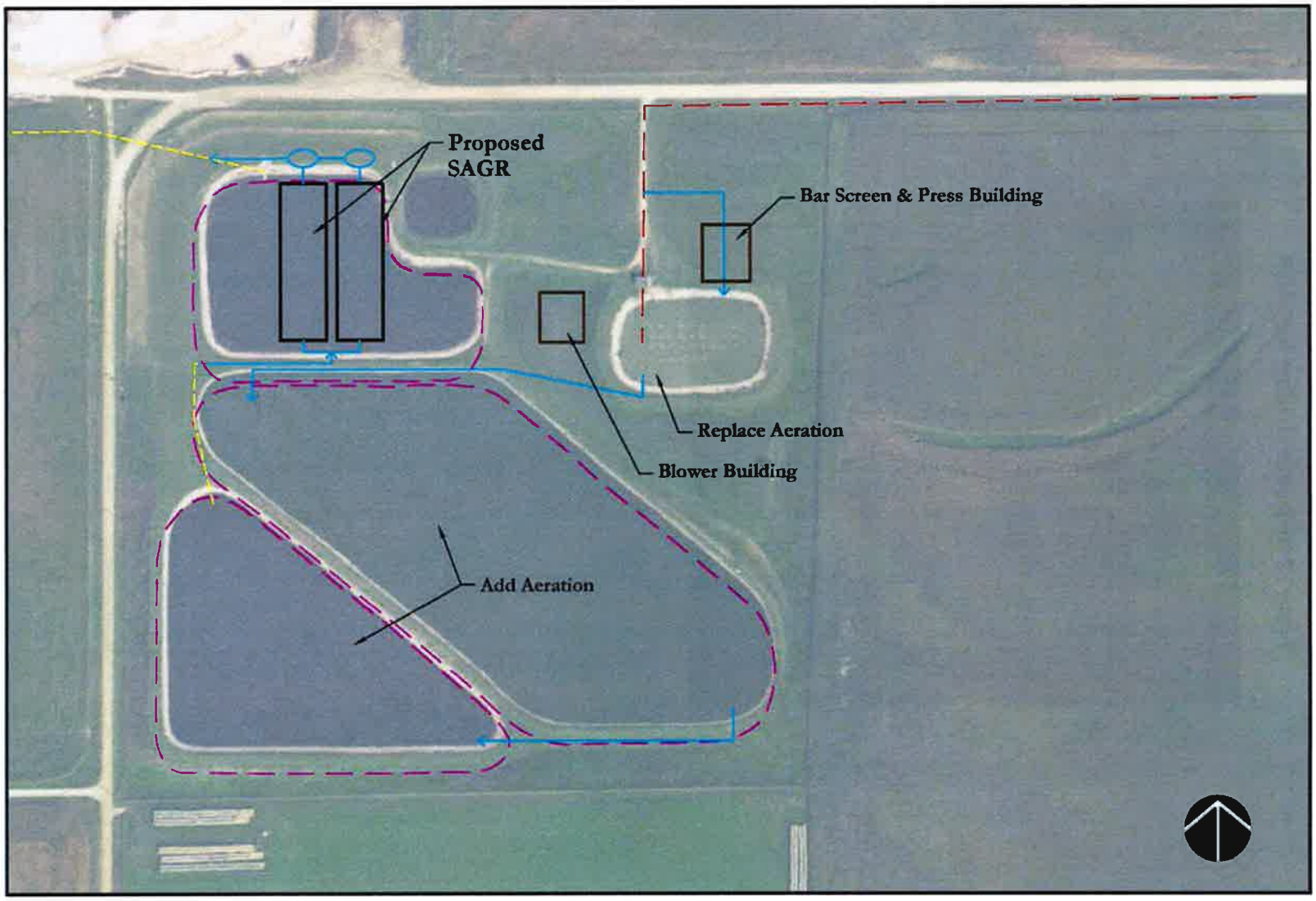

Figure 7 Treatment Alternative 3

Table 13 Cost Estimate for Treatment Alternative 3

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$343,000.00	$343,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Transfer Pumping	1	LS	$10,000.00	$10,000.00
5	Gravel Surfacing	200	TON	$15.00	$3,000.00
6	Unclassified Excavation	17,000	CY	$3.00	$51,000.00
7	Salvage & Place Topsoil	1,000	CY	$5.00	$5,000.00
8	12" DIP Piping	140	FT	$75.00	$10,500.00
9	12" Gate Valve & Box	2	EA	$3,500.00	$7,000.00
10	Concrete Water Stop	4	EA	$500.00	$2,000.00
11	Pond Inlet Structure	2	EA	$3,000.00	$6,000.00
12	Pond Outlet Structure	1	EA	$4,000.00	$4,000.00
13	12" PVC Gravity Sewer	2,000	FT	$45.00	$90,000.00
14	12" Sanitary Bedding Material	2,000	FT	$5.00	$10,000.00
15	Sanitary Sewer Manhole	6	EA	$3,500.00	$21,000.00
16	Connect to Existing Piping	1	EA	$2,500.00	$2,500.00
17	Bar Screen & Press	1	LS	$212,000.00	$212,000.00
18	Blower & Bar Screen Buildings	2	EA	$70,000.00	$140,000.00
19	Control & SCADA System	1	LS	$75,000.00	$75,000.00
20	Electrical Service	1	LS	$25,000.00	$25,000.00
21	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
22	Aeration & SAGR System	1	LS	$1,508,000.00	$1,508,000.00
23	Sludge Removal	6,800	CY	$30.00	$204,000.00
24	Clean Graded Rock	27,000	TON	$20.00	$540,000.00
25	Mulch Insulation	2,400	CY	$10.00	$24,000.00
26	Geotextile Fabric	13,600	SY	$1.50	$20,400.00
27	HDPE Liner	69,200	SF	$1.25	$86,500.00
28	SAGR Bed Walls	1,600	LF	$16.00	$25,600.00
29	Influent Flow Splitter Structure	1	EA	$15,000.00	$15,000.00
30	Piping, Fittings, Valves	1	LS	$45,000.00	$45,000.00
31	Effluent Level Control MH	2	EA	$5,000.00	$10,000.00
32	Aeration Site Piping	2,900	LF	$30.00	$87,000.00
33	Concrete Anchor Posts	30	EA	$200.00	$6,000.00
34	UV Disinfection System	1	LS	$60,000.00	$60,000.00
35	Seeding, Fertilizing & Mulching	28,000	SY	$1.50	$42,000.00
				Subtotal	$3,765,500.00
				Contingencies (15%)	$565,000.00
				Total Estimated Construction Costs	**$4,330,500.00**
				ENGINEERING	**$581,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$174,000.00**
				TOTAL ESTIMATED PROJECT COST	**$5,085,500.00**

Table 14 EUAC for Treatment Alternative 3

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$343,000	$0	$0	$343,000
Clearing	$10,000	$0	$0	$10,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Transfer Pumping	$10,000	$0	$0	$10,000
Gravel Surfacing	$3,000	$0	$0	$3,000
Unclassified Excavation	$51,000	$0	$0	$51,000
Salvage & Place Topsoil	$5,000	$0	$0	$5,000
12" DIP Piping	$10,500	$6,300	$3,488	$7,012
12" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
Concrete Water Stop	$2,000	$1,200	$664	$1,336
Pond Inlet Structure	$6,000	$3,600	$1,993	$4,007
Pond Outlet Structure	$4,000	$2,400	$1,329	$2,671
12" PVC Gravity Sewer	$90,000	$54,000	$29,898	$60,102
12" Sanitary Bedding Material	$10,000	$0	$0	$10,000
Sanitary Sewer Manhole	$21,000	$12,600	$6,976	$14,024
Connect to Existing Piping	$2,500	$0	$0	$2,500
Bar Screen & Press	$212,000	$127,200	$70,428	$141,572
Blower & Bar Screen Buildings	$140,000	$84,000	$46,509	$93,491
Control & SCADA System	$75,000	$45,000	$24,915	$50,085
Electrical Service	$25,000	$15,000	$8,305	$16,695
Standby Generator & Tank	$50,000	$30,000	$16,610	$33,390
Aeration & SAGR System	$1,508,000	$904,800	$500,966	$1,007,034
Sludge Removal	$204,000	$0	$0	$204,000
Clean Graded Rock	$540,000	$324,000	$179,391	$360,609
Mulch Insulation	$24,000	$0	$0	$24,000
Geotextile Fabric	$20,400	$0	$0	$20,400
HDPE Liner	$86,500	$51,900	$28,736	$57,764
SAGR Bed Walls	$25,600	$0	$0	$25,600
Influent Flow Splitter Structure	$15,000	$9,000	$4,983	$10,017
Piping, Fittings, Valves	$45,000	$27,000	$14,949	$30,051
Effluent Level Control MH	$10,000	$6,000	$3,322	$6,678
Aeration Site Piping	$87,000	$52,200	$28,902	$58,098
Concrete Anchor Posts	$6,000	$3,600	$1,993	$4,007
UV Disinfection System	$60,000	$36,000	$19,932	$40,068
Seeding, Fertilizing & Mulching	$42,000	$0	$0	$42,000
Remaining Capital Costs	$1,320,000	$0	$0	$1,320,000
Total Construction Cost	**$5,085,500**	**$1,800,000**	**$996,616**	**$4,088,884**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Aeration Blowers	$30,000			$446,324
SAGR Blowers	$30,000			$446,324
Diffuser Membrane Replacement	$4,000			$59,510
Additional Wastewater Sampling	$5,000			$74,387
Labor	$17,000			$252,917
Total Annual Cost	**$86,000**			**$1,279,463**
			Total Net Present Worth	**$5,368,346**
			EUAC	**$360,837**

TREATMENT ALTERNATIVE 4: 210-DAY STORAGE WITH IRRIGATION

Treatment Alternative 4 proposes the City expands the treatment system to provide more storage and use the treated wastewater to irrigate. The Cities of Sturgis, Custer, Hot Springs and Mitchell all irrigate with their wastewater. This alternative would require the DENR Permit to be changed to add the new discharge point for irrigation.

One of the concerns of irrigation is finding a location that meets the SD DENR setback requirements. The SD DENR requires the location of the irrigation system be one mile from municipal water supply, one-fourth mile from a domestic water supply, one-fourth mile from state parks or recreation areas, 100 feet from neighboring property lines and one-fourth mile from lakes.

A sample was taken of the wastewater on the west end of cell four. The sample determined that the salinity was low. Low salinity water reduces the infiltration rate of soils. Soil crusting and crop emergence can also become a problem. The USDA was contacted to discuss what soil types would be suitable for irrigation. Soils map units starting with a W should be targeted and map units starting with a T or C should be avoided.

The DENR has established the maximum application rate for purposes of irrigation. The maximum rate is two inches per acre per week or 24 inches per acre per year. Based on this requirement the City would need 140 acres to meet the 20 year design flows. The City needs to be cautious on how they structure the irrigation agreements with the farmers. Other communities have had troubles because the City needs to irrigate at a time when the farmer doesn't want them too. This alternative assumes the City purchases the land and pivots so they can control when they want to irrigate. It is assumed the farm ground rent would cover the operation and maintenance costs. The proposed hydraulic loading and cost estimate are shown in the following tables. Future nutrient removal requirements have not been included. The SD DENR requires a minimum of 210 days of storage because the City would only be able to irrigation during the summer. The hydraulic loading requires an additional 30 acres of water surface area.

Table 15 Hydraulic Loading for 210-Day Storage with Irrigation

	Proposed
Population	5,673
Wastewater Flow (gpcpd)	60
Infiltration & Inflow (gpd)	85,095
Design Storage Time (days)	210
Total Pond Influent (gal)	89,349,750
Aeration	
0.75 ac x 43560 x 11 x 7.48	2,670,823
Cell Two	
27 ac x 43560 x 6 x 7.48	52,787,794
Cell Three	
7.96 ac x 43560 x 6 x 7.48	15,569,935
Cell Four	
4.47 ac x 43560 x 6 x 7.48	8,747,472
Cell Five	
5.3 ac x 43560 x 6 x 7.48	10,363,664
Total Storage (gal)	90,139,688
Remaining Storage (gal)	789,938

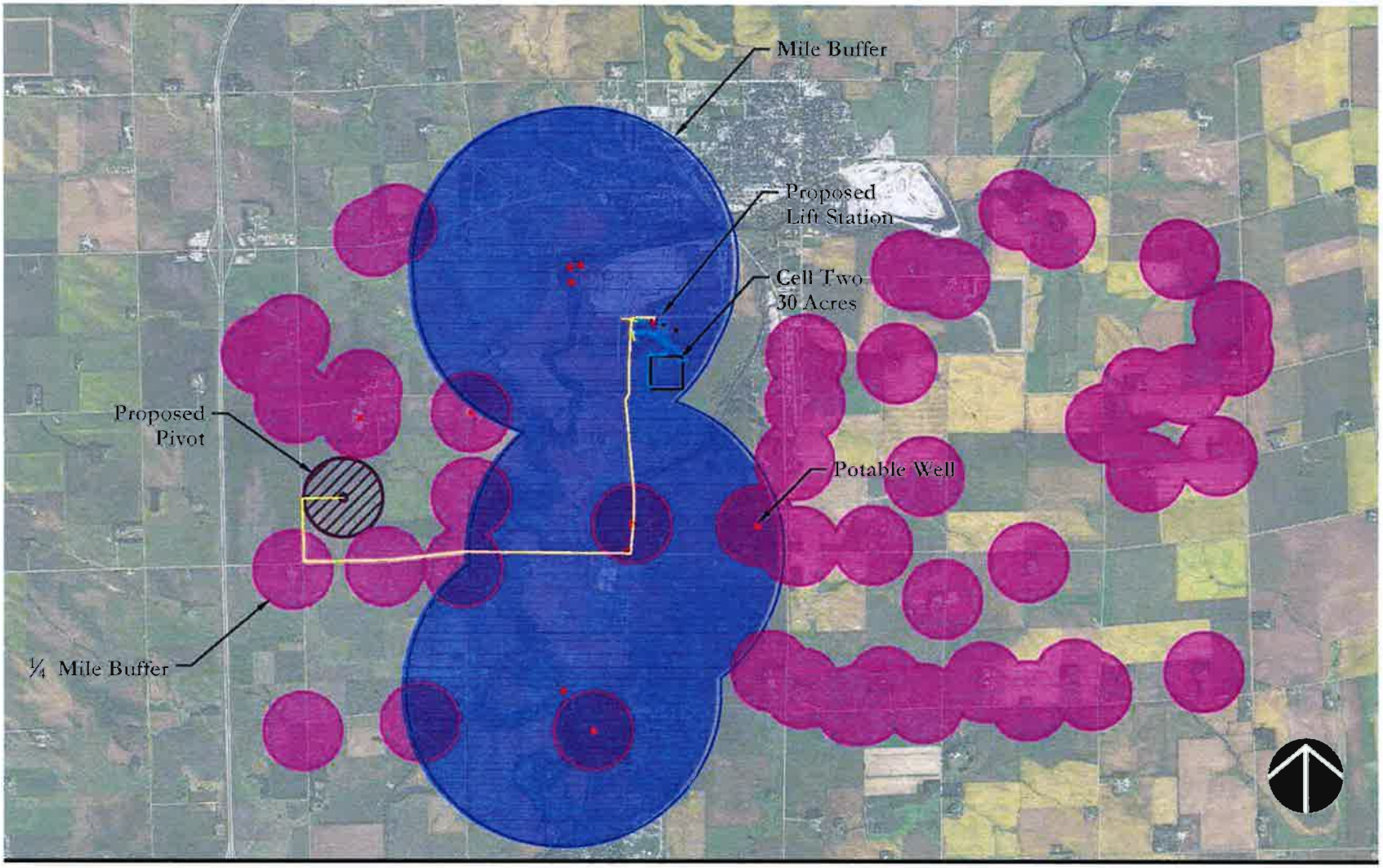

Figure 8 Treatment Alternative 4

Table 16 Cost Estimate for Treatment Alternative 4

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$411,000.00	$411,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Traffic Control	1	LS	$5,000.00	$5,000.00
4	Gravel Surfacing	2,500	TON	$15.00	$37,500.00
5	Unclassified Excavation	287,000	CY	$3.00	$861,000.00
6	Salvage & Place Topsoil	34,000	CY	$5.00	$170,000.00
7	Scarify & Recompact Liner	157,000	SY	$1.00	$157,000.00
8	Sludge Removal	6,800	CY	$30.00	$204,000.00
9	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
10	Class B Rip Rap	17,000	TON	$35.00	$595,000.00
11	Type B Drainage Fabric	23,000	SY	$3.00	$69,000.00
12	Dewatering	1	LS	$15,000.00	$15,000.00
13	12" DIP Piping	400	LF	$75.00	$30,000.00
14	12" Gate Valve & Box	5	EA	$3,500.00	$17,500.00
15	Concrete Water Stop	10	EA	$500.00	$5,000.00
16	Pond Inlet Structure	2	EA	$3,000.00	$6,000.00
17	Pond Outlet Structure	2	EA	$4,000.00	$8,000.00
18	Pond Depth Indicators	2	EA	$4,000.00	$8,000.00
19	12" Force Main	23,000	FT	$45.00	$1,035,000.00
20	Air Release Manhole	2	EA	$6,500.00	$13,000.00
21	12" PVC Gravity Sewer	4,400	FT	$45.00	$198,000.00
22	12" Sanitary Bedding Material	27,400	FT	$5.00	$137,000.00
23	Railroad Crossing	1	EA	$10,000.00	$10,000.00
24	Connect to Existing Piping	1	EA	$2,500.00	$2,500.00
25	Lift Station	1	EA	$200,000.00	$200,000.00
26	Electrical Service	1	LS	$15,000.00	$15,000.00
27	Sanitary Sewer Manhole	6	EA	$3,500.00	$21,000.00
28	Irrigation Pivot	1	EA	$130,000.00	$130,000.00
29	Woven Wire Fence	4,000	FT	$6.00	$24,000.00
30	Seeding, Fertilizing & Mulching	77,000	SY	$1.50	$115,500.00
				Subtotal	$4,513,000.00
				Contingencies (15%)	$677,000.00
				Total Estimated Construction Costs	**$5,190,000.00**
				ENGINEERING	**$689,000.00**
				LAND PURCHASE (200 AC.)	**$3,200,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$208,000.00**
				TOTAL ESTIMATED PROJECT COST	**$9,287,000.00**

Table 17 EUAC for Treatment Alternative 4

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$411,000	$0	$0	$411,000
Clearing	$10,000	$0	$0	$10,000
Traffic Control	$5,000	$0	$0	$5,000
Gravel Surfacing	$37,500	$0	$0	$37,500
Unclassified Excavation	$861,000	$0	$0	$861,000
Salvage & Place Topsoil	$170,000	$0	$0	$170,000
Scarify & Recompact Liner	$157,000	$0	$0	$157,000
Sludge Removal	$204,000	$0	$0	$204,000
Pond Site Warning Signs	$3,000	$1,800	$997	$2,003
Class B Rip Rap	$595,000	$357,000	$197,662	$397,338
Type B Drainage Fabric	$69,000	$0	$0	$69,000
Dewatering	$15,000	$0	$0	$15,000
12" DIP Piping	$30,000	$18,000	$9,966	$20,034
12" Gate Valve & Box	$17,500	$10,500	$5,814	$11,686
Concrete Water Stop	$5,000	$3,000	$1,661	$3,339
Pond Inlet Structure	$6,000	$3,600	$1,993	$4,007
Pond Outlet Structure	$8,000	$4,800	$2,658	$5,342
Pond Depth Indicators	$8,000	$4,800	$2,658	$5,342
12" Force Main	$1,035,000	$621,000	$343,833	$691,167
Air Release Manhole	$13,000.00	$7,800	$4,319	$8,681
12" PVC Gravity Sewer	$198,000	$118,800	$65,777	$132,223
12" Sanitary Bedding Material	$137,000	$0	$0	$137,000
Railroad Crossing	$10,000	$0	$0	$10,000
Connect to Existing Piping	$2,500	$0	$0	$2,500
Lift Station	$200,000	$120,000	$66,441	$133,559
Electrical Service	$15,000	$9,000	$4,983	$10,017
Sanitary Sewer Manhole	$21,000	$12,600	$6,976	$14,024
Irrigation Pivot	$130,000	$78,000	$43,187	$86,813
Woven Wire Fence	$24,000	$0	$0	$24,000
Seeding, Fertilizing & Mulching	$115,500	$0	$0	$115,500
Land Purchase	$3,200,000	$3,200,000	$1,771,762	$1,428,238
Remaining Capital Costs	$1,574,000	$0	$0	$1,574,000
Total Construction Cost	**$9,287,000**	**$4,570,700**	**$2,530,686**	**$6,756,314**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$3,000			$44,632
Supplies	$3,000			$44,632
Utilities	$15,000			$223,162
Labor	$10,000			$148,775
Total Annual Cost	**$31,000**			**$461,202**
			Total Net Present Worth	**$7,217,516**
			EUAC	**$485,130**

TREATMENT ALTERNATIVE 5: MECHANICAL TREATMENT

Treatment Alternative 5 proposes a mechanical plant be built. There is a possibility that this plant could be built on existing City property. However, in order to be conservative land acquisition has been included in case the facility doesn't fit. This alternative would be continuous discharge to the Big Sioux River. This alternative would require the DENR Permit to be changed to continuous discharge.

Currently, in the State of South Dakota there are 375 permitted facilities and approximately 275 are municipal. There are only 23 municipal treatment plants in the entire state. The mechanical treatment process is very robust and would require additional labor force to operate. This alternative does not evaluate the different mechanical treatment processes. Extra processes could be added to the plant to meet future permit limits for nutrient removal. The cost estimate for this alternative is shown on the following table.

Table 18 Cost Estimate for Treatment Alternative 5

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$549,000.00	$549,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Gravel Surfacing	300	TON	$15.00	$4,500.00
5	Remove Existing Dikes	50,000	CY	$4.00	$200,000.00
6	Unclassified Excavation	16,200	CY	$3.00	$48,600.00
7	12" PVC Gravity Sewer	1,000	FT	$45.00	$45,000.00
8	12" Gate Valve & Box	2	EA	$3,500.00	$7,000.00
9	12" Sanitary Bedding Material	1,000	FT	$5.00	$5,000.00
10	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
11	Connect to Existing Outfall Line	1	EA	$2,500.00	$2,500.00
12	Sludge Removal	6,800	CY	$30.00	$204,000.00
13	Sanitary Manhole	2	EA	$3,500.00	$7,000.00
14	Mechanical Treatment Plant	1	LS	$4,600,000.00	$4,600,000.00
15	SCADA System	1	LS	$75,000.00	$75,000.00
16	Electrical Service	1	LS	$35,000.00	$35,000.00
17	Standby Generator & Tank	1	LS	$75,000.00	$75,000.00
18	Woven Wire Fence	3,000	FT	$6.00	$18,000.00
19	Salvage & Place Topsoil	19,000	CY	$3.00	$57,000.00
20	Seeding, Fertilizing & Mulching	49,000	SY	$1.50	$73,500.00
				Subtotal	$6,033,600.00
				Contingencies (15%)	$906,000.00
		Total Estimated Construction Costs			**$6,939,600.00**
				ENGINEERING	**$910,000.00**
				LAND PURCHASE (10 Ac.)	**$200,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$278,000.00**
				TOTAL ESTIMATED PROJECT COST	**$8,327,600.00**

Table 19 EUAC for Treatment Alternative 5

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$472,000	$0	$0	$472,000
Clearing	$10,000	$0	$0	$10,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Gravel Surfacing	$4,500	$0	$0	$4,500
Remove Existing Dikes	$200,000	$0	$0	$200,000
Unclassified Excavation	$48,600	$0	$0	$48,600
12" PVC Gravity Sewer	$45,000	$27,000	$14,949	$30,051
12" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
12" Sanitary Bedding Material	$5,000	$0	$0	$5,000
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Outfall Line	$2,500	$0	$0	$2,500
Sludge Removal	$204,000	$0	$0	$204,000
Sanitary Manhole	$7,000	$4,200	$2,325	$4,675
Mechanical Treatment Plant	$3,830,000	$2,298,000	$1,272,347	$2,557,653
SCADA System	$75,000	$45,000	$24,915	$50,085
Electrical Service	$35,000	$21,000	$11,627	$23,373
Standby Generator & Tank	$75,000	$45,000	$24,915	$50,085
Woven Wire Fence	$18,000	$0	$0	$18,000
Salvage & Place Topsoil	$57,000	$0	$0	$57,000
Seeding, Fertilizing & Mulching	$73,500	$0	$0	$73,500
Land Purchase	$200,000	$200,000	$110,735	$89,265
Remaining Capital Costs	$1,804,000	$0	$0	$1,804,000
Total Construction Cost	**$7,190,600**	**$2,644,400**	**$1,464,140**	**$5,726,460**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$8,000			$119,020
Supplies	$8,000			$119,020
Utilities	$75,000			$1,115,811
Additional Wastewater Sampling	$5,000			$74,387
Sludge Disposal	$20,000			$297,549
Labor (two new employees)	$200,000			$2,975,495
Total Annual Cost	**$316,000**			**$4,701,282**
			Total Net Present Worth	**$10,427,742**
			EUAC	**$700,908**

TREATMENT ALTERNATIVE 6: REGIONALIZATION WITH SIOUX FALLS

In 2013 Sioux Falls established a Regional Wastewater System. The current rate for the pumping charge is $4.01 per 1,000 gallons. The City can receive a $0.44 per 1,000 gallon credit for equalization and $0.55 per 1,000 gallon credit for partial treatment. Based on current flows the City can only keep two foot of storage in cell four and needs to leave two foot of storage in cell three to receive the equalization credit for 30-days of storage. The 20-year projected flows require cell three and four to only have two foot of residual storage to meet this requirement. The City needs to leave two foot of residual storage in the cell to maintain the liner. The strength parameters to meet the partial treatment credit is 20 mg/l for BOD, 10 mg/l for TKN and 45 mg/l for TSS.

Sioux Falls also implemented a new System Development Charge "SDC". The City will be required to pay the City of Sioux Falls for every sewer connection. The charge will range from $2,391 for a 3/4" water meter to $60,000 for a four-inch water meter. Other Regionalization customers have been pumping wastewater to Sioux Falls for several years and the existing customers were grandfathered in. Unfortunately, the City will be required to pay for all existing customers. The calculation for the SDC charge is shown in the following table.

Table 20 System Development Charge

Meter Size	Meter Charge	Customers	Total Charge
5/8" to 3/4"	$2,391	1,217	$2,909,847
1"	$5,978	47	$280,966
1 1/2"	$11,954	9	$107,586
2"	$19,127	8	$153,016
3"	$35,863	3	$107,589
4"	$60,000		$0
		1,284	$3,559,004

A major benefit of pumping wastewater to Sioux Falls is Dell Rapids doesn't need to worry about implementing new treatment processes because Sioux Falls handles the treatment. Treatment requirements will change over time and Sioux Falls will be required to implement these changes at their wastewater treatment plant. Dell Rapids can continue to operate just like they have over the last few years. The cost estimate for this alternative is shown in the following table.

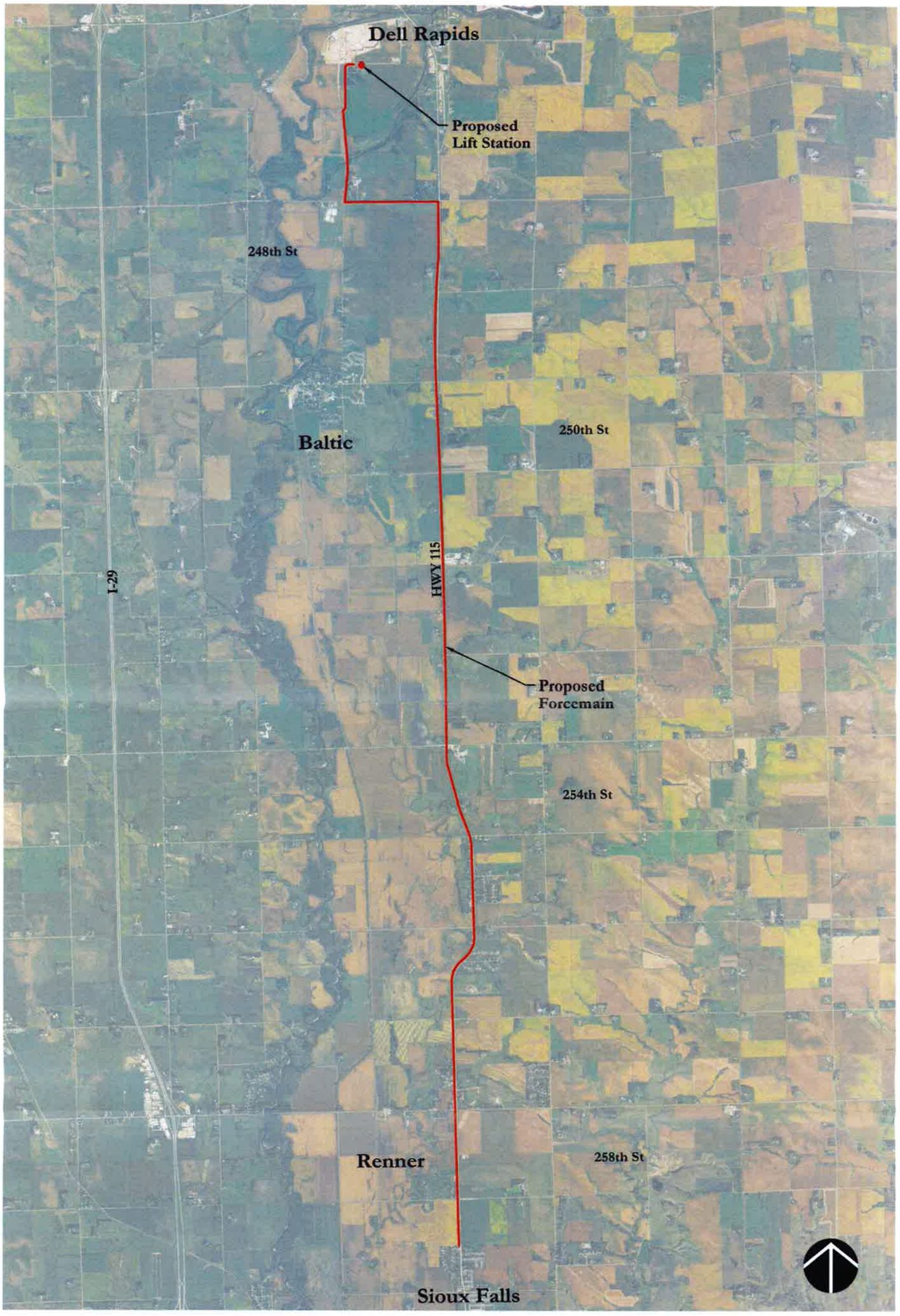

Figure 9 Treatment Alternative 6

Table 21 Cost Estimate for Treatment Alternative 6

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$566,000.00	$566,000.00
2	Bar Screen & Press	1	LS	$212,000.00	$212,000.00
3	Bar Screen Buildings	1	EA	$70,000.00	$70,000.00
4	Electrical Service	1	LS	$25,000.00	$25,000.00
5	Controls & SCADA System	1	LS	$75,000.00	$75,000.00
6	Standby Generator & Tank	1	LS	$35,000.00	$35,000.00
7	Lift Station	1	LS	$500,000.00	$500,000.00
8	Pond Outlet Structure	1	LS	$4,000.00	$4,000.00
9	Air Release Manhole	29	EA	$6,500.00	$188,500.00
10	12" PVC Sanitary Sewer Pipe	100	FT	$45.00	$4,500.00
11	12" Sanitary Sewer Force Main	76,000	FT	$45.00	$3,420,000.00
12	12" Sanitary Bedding Material	76,100	FT	$6.00	$456,600.00
13	River Crossing	5	EA	$20,000.00	$100,000.00
14	Highway Crossing	400	FT	$300.00	$120,000.00
15	Connect to Existing Manhole	1	EA	$2,500.00	$2,500.00
16	Aggregate Base Course (8")	600	TON	$25.00	$15,000.00
17	Salvage & Place Topsoil	22,000	CY	$5.00	$110,000.00
18	Seeding, Fertilizing & Mulching	169,000	SY	$1.50	$253,500.00
19	Traffic Control	1	LS	$50,000.00	$50,000.00
20	Trench Dewatering	1	LS	$10,000.00	$10,000.00
				Subtotal	$6,217,600.00
				Contingencies (15%)	$933,000.00
				Total Estimated Construction Costs	**$7,150,600.00**
				ENGINEERING	**$936,000.00**
				EASEMENTS	**$349,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$287,000.00**
				TOTAL ESTIMATED PROJECT COST	**$8,722,600.00**

Table 22 EUAC for Treatment Alternative 6

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$566,000.00	$0.00	$0.00	$566,000.00
Bar Screen & Press	$212,000.00	$127,200.00	$70,427.56	$141,572.44
Bar Screen Buildings	$70,000.00	$42,000.00	$23,254.38	$46,745.62
Electrical Service	$25,000.00	$15,000.00	$8,305.14	$16,694.86
Controls & SCADA System	$75,000.00	$45,000.00	$24,915.41	$50,084.59
Standby Generator & Tank	$35,000.00	$21,000.00	$11,627.19	$23,372.81
Lift Station	$500,000.00	$300,000.00	$166,102.73	$333,897.27
Pond Outlet Structure	$4,000.00	$2,400.00	$1,328.82	$2,671.18
Air Release Manhole	$188,500.00	$113,100.00	$62,620.73	$125,879.27
12" PVC Sanitary Sewer Pipe	$4,500.00	$2,700.00	$1,494.92	$3,005.08
12" Sanitary Sewer Force Main	$3,420,000.00	$2,052,000.00	$1,136,142.65	$2,283,857.35
12" Sanitary Bedding Material	$456,600.00	$0.00	$0.00	$456,600.00
River Crossing	$100,000.00	$0.00	$0.00	$100,000.00
Highway Crossing	$120,000.00	$0.00	$0.00	$120,000.00
Connect to Existing Manhole	$2,500.00	$0.00	$0.00	$2,500.00
Aggregate Base Course (8")	$15,000.00	$0.00	$0.00	$15,000.00
Salvage & Place Topsoil	$110,000.00	$0.00	$0.00	$110,000.00
Seeding, Fertilizing & Mulching	$253,500.00	$0.00	$0.00	$253,500.00
Traffic Control	$50,000.00	$0.00	$0.00	$50,000.00
Trench Dewatering	$10,000.00	$0.00	$0.00	$10,000.00
Remaining Capital Costs	$2,505,000.00	$0.00	$0.00	$2,505,000.00
Total Construction Cost	**$8,722,600.00**	**$2,720,400.00**	**$1,506,219.52**	**$7,216,380.48**
Annual Operation and Maintenance Cost				
Description	Annual Cost			Net Present Worth
Equipment	$2,000.00			$29,754.95
Supplies	$2,000.00			$29,754.95
Utilities	$15,000.00			$223,162.12
Labor	$3,000.00			$44,632.42
Total Annual Cost	**$22,000.00**			**$327,304.45**
			Total Net Present Worth	**$7,543,684.93**
			EUAC	**$507,054.12**

TREATMENT ALTERNATIVE 7: SAGR/ANSAGR SYSTEM WITH NUTRIENT REMOVAL

Treatment Alternative 7 proposes the City add fine bubble aeration and a Submerged Attached Growth Reactor (SAGR) with the nutrient removal processes implemented as well. The aeration and SAGR portions of the treatment facility are detailed previously in treatment alternative 3 in this report. The addition of the ANSAGR treatment portion of this alternative is in response to future nutrient removal requirements that are anticipated to be implemented into DENR's wastewater treatment requirements in approximately five years. Due to the short time frame until this requirement will come into effect, part of this study was to review design, costs and implementation of a wastewater treatment facility that not only meets current requirements but the future DENR requirements for nutrient removal.

In addition to the aeration and SAGR treatment processes, the ANSAGR treatment portion will be implemented into this option. The ANSAGR treatment process is designed for Total Nitrogen (TN) removal in cold to moderate temperature climates. The ANSAGR cells will receive treated wastewater flows on the downstream end of the SAGR treatment process. From these flows, the ANSAGR cells will utilize the existing wastewater nitrates in lieu of dissolved oxygen for the respiration process thus converting nitrates (NO2) to nitrogen gas (N2) which will bubble out and be removed from the treated wastewater. Anoxic ANSAGR effluent will then be re-aerated in downstream basins to meet minimum DO level and ensure any supplement BOD is removed prior to effluent discharge.

Another future nutrient removal requirement will be Total Phosphorus removal. To achieve this requirement, it is anticipated that a cloth filtration system will be implemented within the proposed treatment process. Metal salts such as aluminum sulfate (alum) will be introduced to form a precipitate/settleable floc. A stationary cloth disc filter and flocculation tank will then be used to remove the precipitate from the treated wastewater effluent.

The proposed hydraulic loading (utilizes SAGR system cell sizes) and cost estimate are shown in the following tables. The operation and maintenance costs are based on the manufacturer's recommendations. These costs are based on full build-out. Nutrient removal requirements have been included. This alternative would replace the aeration equipment in cell one, add aeration to the existing cell two and three and build three SAGR cells, three ANSAGR cells, and three re-aeration basins in the vicinity of the existing cell four. This system would be continuous discharge to the Big Sioux River. One substantial benefit of this alternative is land acquisition would not be necessary. In addition, the City would not have to deal with annexation and the issue with the water source protection district.

Table 23 Hydraulic Loading for SAGR/ANSAGR with Nutrient Removal

	Proposed
Population	5,673
Wastewater Flow (gpcpd)	60
Infiltration & Inflow (gpd)	85,095
Average Annual Influent (gpd)	425,475
Wet Weather Influent (gpd)	1,128,705
Cell One	
0.75 ac x 43560 x 11 x 7.48	2,670,823
Cell Two	
7.96 ac x 43560 x 8x 7.48	20,759,914
Cell Three	
4.47 ac x 43560 x 8 x 7.48	11,663,296
Total Storage (gal)	35,094,033
Aeration Detention Time (days)	31

Table 24 Cost Estimate for Treatment Alternative 7

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$579,000.00	$579,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Gravel Surfacing	2,300	TON	$15.00	$34,500.00
6	Unclassified Excavation	65,000	CY	$3.00	$195,000.00
7	Salvage & Place Topsoil	7,100	CY	$5.00	$35,500.00
8	Scarify & Recompact Liner	24,000	SY	$1.00	$24,000.00
9	12" DIP Piping	240	FT	$75.00	$18,000.00
10	12" Gate Valve & Box	5	EA	$3,500.00	$17,500.00
11	Concrete Water Stop	10	EA	$500.00	$5,000.00
12	Pond Inlet Structure	3	EA	$3,000.00	$9,000.00
13	Pond Outlet Structure	3	EA	$4,000.00	$12,000.00
14	Pond Depth Indicators	3	EA	$4,000.00	$12,000.00
15	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
16	12" PVC Gravity Sewer	2,000	FT	$45.00	$90,000.00
17	12" Sanitary Bedding Material	2,000	FT	$5.00	$10,000.00
18	Sanitary Sewer Manhole	6	EA	$3,500.00	$21,000.00
19	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
20	Connect to Existing Piping	1	EA	$2,500.00	$2,500.00
21	Bar Screen & Press	1	LS	$212,000.00	$212,000.00
22	Blower & Bar Screen Buildings	2	EA	$70,000.00	$140,000.00
23	Control & SCADA System	1	LS	$75,000.00	$75,000.00
24	Electrical Service	1	LS	$25,000.00	$25,000.00
25	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
26	Aeration & SAGR System	1	LS	$2,685,000.00	$2,685,000.00
27	Sludge Removal	13,000	CY	$30.00	$390,000.00
28	Clean Graded Rock	43,000	TON	$20.00	$860,000.00
29	Mulch Insulation	3,600	CY	$10.00	$36,000.00
30	Geotextile Fabric	20,400	SY	$1.50	$30,600.00
31	HDPE Liner	103,700	SF	$1.25	$129,625.00
32	Aerated Rock Bed Walls	2,400	LF	$16.00	$38,400.00
33	Influent Flow Splitter Structure	1	EA	$15,000.00	$15,000.00
34	Piping, Fittings, Valves	1	LS	$100,000.00	$100,000.00
35	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
36	Aeration Site Piping	3,000	LF	$30.00	$90,000.00
37	Concrete Anchor Posts	30	EA	$200.00	$6,000.00
38	UV Disinfection System	1	LS	$98,000.00	$98,000.00
39	Filter Building	1	LS	$250,000.00	$250,000.00
40	Seeding, Fertilizing & Mulching	14,000	SY	$1.50	$21,000.00
				Subtotal	$6,362,125.00
				Contingencies (15%)	$955,000.00
				Total Estimated Construction Costs	**$7,317,125.00**
				ENGINEERING	**$957,000.00**
				LAND PURCHASE (20 AC.)	**$0.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$293,000.00**
				TOTAL ESTIMATED PROJECT COST	**$8,567,125.00**

Table 25 EUAC for Treatment Alternative 7

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$579,000	$0	$0	$579,000
Clearing	$10,000	$0	$0	$10,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Gravel Surfacing	$34,500	$0	$0	$34,500
Unclassified Excavation	$195,000	$0	$0	$195,000
Salvage & Place Topsoil	$35,500	$0	$0	$35,500
Scarify & Recompact Liner	$24,000	$0	$0	$24,000
12" DIP Piping	$18,000	$10,800	$5,980	$12,020
12" Gate Valve & Box	$17,500	$10,500	$5,814	$11,686
Concrete Water Stop	$5,000	$3,000	$1,661	$3,339
Pond Inlet Structure	$9,000	$5,400	$2,990	$6,010
Pond Outlet Structure	$12,000	$7,200	$3,986	$8,014
Pond Depth Indicators	$12,000	$7,200	$3,986	$8,014
Pond Site Warning Signs	$3,000	$1,800	$997	$2,003
12" PVC Gravity Sewer	$90,000	$54,000	$29,898	$60,102
12" Sanitary Bedding Material	$10,000	$0	$0	$10,000
Sanitary Sewer Manhole	$21,000	$12,600	$6,976	$14,024
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Piping	$2,500	$0	$0	$2,500
Bar Screen & Press	$212,000	$127,200	$70,428	$141,572
Blower & Bar Screen Buildings	$140,000	$84,000	$46,509	$93,491
Control & SCADA System	$75,000	$45,000	$24,915	$50,085
Electrical Service	$25,000	$15,000	$8,305	$16,695
Standby Generator & Tank	$50,000	$30,000	$16,610	$33,390
Aeration & SAGR System	$2,685,000	$1,611,000	$891,972	$1,793,028
Sludge Removal	$390,000	$0	$0	$390,000
Clean Graded Rock	$860,000	$516,000	$285,697	$574,303
Mulch Insulation	$36,000	$0	$0	$36,000
Geotextile Fabric	$30,600	$0	$0	$30,600
HDPE Liner	$129,625	$77,775	$43,062	$86,563
Aerated Rock Bed Walls	$38,400	$0	$0	$38,400
Influent Flow Splitter Structure	$15,000	$9,000	$4,983	$10,017
Piping, Fittings, Valves	$100,000	$60,000	$33,221	$66,779
Effluent Level Control MH	$15,000	$9,000	$4,983	$10,017
Aeration Site Piping	$90,000	$54,000	$29,898	$60,102
Concrete Anchor Posts	$6,000	$3,600	$1,993	$4,007
UV Disinfection System	$98,000	$58,800	$32,556	$65,444
Filter Building	$250,000	$150,000	$83,051	$166,949
Seeding, Fertilizing & Mulching	$21,000	$0	$0	$21,000
Land Purchase	$0	$0	$0	$0
Remaining Capital Costs	$2,205,000	$0	$0	$2,205,000
Total Construction Cost	**$8,567,125**	**$2,962,875**	**$1,640,472**	**$6,926,653**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Aeration Blowers	$44,000			$654,609
SAGR Blowers	$46,000			$684,364
Diffuser Membrane Replacement	$5,000			$74,387
Labor	$17,000			$252,917
Total Annual Cost	**$112,000**			**$1,666,277**
			Total Net Present Worth	**$8,592,930**
			EUAC	**$577,580**

TREATMENT ALTERNATIVE 8: TOTAL RETENTION

Treatment Alternative 8 proposes the city utilize existing wastewater ponds as well as construct new larger ponds at either land abutting the existing wastewater treatment facilities or an area located away from the existing city facilities. The proposed ponds will provide total retention of all wastewater flows and thus will not be required to meet any DENR discharge requirements since there will be no discharging of wastewater effluent.

Assuming a soil seepage rate of 1/16" per day, it is estimated that an additional 240 acres of land will need to be purchased and used in conjunction with the approximately 16 acres that are currently being used for the existing wastewater treatment facility. The actual surface area that will be utilized is 182 acres but extra land will be required to construct berms, roadways and general infrastructure. The size and shape of the proposed ponds will be dictated by available land, housing and potable well buffers, and water source protection districts. As the design of this type of facility progresses, it may be determined that the seepage rate is different than the assumed 1/16" per day. In that event, the size of the ponds will increase or decrease as the seepage rate decreases or increases respectively. Preliminary pond sizing for a seepage rate of 1/32" for example will increase the amount of surface acreage required to 286 additional acres in lieu of 182 surface acres.

The proposed hydraulic loading (with seepage and evaporation information) and cost estimate are shown in the following tables. The operation and maintenance costs are based on the manufacturer's recommendations. These costs are based on full build-out. Nutrient removal requirements have not been included as this treatment facility will not be discharging at any time. The benefit of this type of wastewater treatment facility is the low operation and maintenance costs and minimal regulatory requirements. However, this type of facility requires large areas of land to meet the total volume requirement for 365 days of wastewater flows. Land acquisition for this type of facility can be difficult due to landowner opposition, annexations, and buffer requirements.

Table 26 Hydraulic Loading for Total Retention Pond

Total Retention - 1/16" per day Seepage	
	Proposed
Population	5,673
Wastewater Flow (gpcpd)	60
Infiltration & Inflow (gpd)	85,095
Design Storage Time (days)	365
Total Pond Influent (gal)	155,298,375
Total Pond Influent (ac/ft)	477
Primary Seepage (in/day)	1/16
Secondary Seepage (in/day)	1/16
Seepage (ft/yr)	1.9
Evaporation (in/yr)	35.4
Evaporation (ft/yr)	3.0
Precipitation (in/yr)	26.8
Precipitation (ft/yr)	2.2
Total Losses	2.6
Required Surface Area (ac)	**182**

Table 27 Cost Estimate for Treatment Alternative 8

Total Retention (1/16" Seepage)					
Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$681,000.00	$681,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Erosion Control	1	LS	$244,836.24	$244,836.24
4	Traffic Control	1	LS	$5,000.00	$5,000.00
5	Gravel Surfacing	8,199	TON	$15.00	$122,980.71
6	Unclassified Excavation	1,533,903	CY	$2.00	$3,067,806.00
7	Salvage & Place Topsoil	129,067	CY	$2.00	$258,133.33
8	Scarify & Recompact Liner	1,222,111	SY	$1.00	$1,222,111.44
9	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
10	Class B Rip Rap	73,619	TON	$35.00	$2,576,658.00
11	Type B Drainage Fabric	34,000	SY	$2.15	$73,100.00
12	Dewatering	1	LS	$15,000.00	$15,000.00
13	12" DIP Piping	170	LF	$75.00	$12,750.00
14	12" Gate Valve & Box	6	EA	$3,500.00	$21,000.00
15	Concrete Water Stop	12	EA	$500.00	$6,000.00
16	Pond Inlet Structure	3	EA	$3,000.00	$9,000.00
17	Pond Outlet Structure	3	EA	$4,000.00	$12,000.00
18	Pond Depth Indicators	3	EA	$4,000.00	$12,000.00
19	12" PVC Gravity Sewer	4,300	FT	$45.00	$193,500.00
20	12" Sanitary Bedding Material	4,300	FT	$5.00	$21,500.00
21	Misc Piping/Structures	1	LS	$125,000.00	$125,000.00
22	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
23	Connect to Existing Piping	1	EA	$2,500.00	$2,500.00
24	Sanitary Sewer Manhole	5	EA	$3,500.00	$17,500.00
25	Sludge Removal	6,800	CY	$30.00	$204,000.00
26	Woven Wire Fence	15,528	FT	$6.00	$93,168.57
27	Seeding, Fertilizing & Mulching	50,000	SY	$1.50	$75,000.00
				Subtotal	$9,087,044.30
				Contingencies (15%)	$1,364,000.00
				Total Estimated Construction Costs	**$10,451,044.30**
				ENGINEERING	**$1,352,000.00**
				LAND PURCHASE (240 AC.)	**$4,800,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$419,000.00**
				TOTAL ESTIMATED PROJECT COST	**$17,022,044.30**

Table 28 EUAC for Treatment Alternative 8

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$681,000	$0	$0	$681,000
Clearing	$10,000	$0	$0	$10,000
Erosion Control	$244,836	$0	$0	$244,836
Traffic Control	$5,000	$0	$0	$5,000
Gravel Surfacing	$122,981	$0	$0	$122,981
Unclassified Excavation	$3,067,806	$0	$0	$3,067,806
Salvage & Place Topsoil	$258,133	$0	$0	$258,133
Scarify & Recompact Liner	$1,222,111	$0	$0	$1,222,111
Pond Site Warning Signs	$3,000	$1,800	$997	$2,003
Class B Rip Rap	$2,576,658	$1,545,995	$855,980	$1,720,678
Type B Drainage Fabric	$73,100	$0	$0	$73,100
Dewatering	$15,000	$0	$0	$15,000
12" DIP Piping	$12,750	$7,650	$4,236	$8,514
12" Gate Valve & Box	$21,000	$12,600	$6,976	$14,024
Concrete Water Stop	$6,000	$3,600	$1,993	$4,007
Pond Inlet Structure	$9,000	$5,400	$2,990	$6,010
Pond Outlet Structure	$12,000	$7,200	$3,986	$8,014
Pond Depth Indicators	$12,000	$7,200	$3,986	$8,014
12" PVC Gravity Sewer	$193,500	$116,100	$64,282	$129,218
12" Sanitary Bedding Material	$21,500	$0	$0	$21,500
Misc Piping/Structures	$125,000	$75,000	$41,526	$83,474
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Piping	$2,500	$0	$0	$2,500
Sanitary Sewer Manhole	$17,500	$10,500	$5,814	$11,686
Sludge Removal	$204,000	$0	$0	$204,000
Woven Wire Fence	$93,169	$0	$0	$93,169
Seeding, Fertilizing & Mulching	$75,000	$0	$0	$75,000
Land Purchase	$4,800,000	$4,800,000	$2,657,644	$2,142,356
Remaining Capital Costs	$3,135,000	$0	$0	$3,135,000
Total Construction Cost	**$17,022,044**	**$6,593,045**	**$3,650,409**	**$13,371,635**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Maintenance	$20,000			$297,549
Labor	$15,000			$223,162
Total Annual Cost	**$35,000**			**$520,712**
			Total Net Present Worth	**$13,892,347**
			EUAC	**$933,784**

IMPLEMENTATION OF ALTERNATIVES

WASTEWATER TREATMENT

The EUAC for each system proposed needs to be compared in order to determine the most cost effective long term solution for the wastewater treatment system. The following table compares the capital cost and EUAC for all of the treatment alternatives. The EUAC has not been calculated for the regionalization alternative because of the high capital cost and this alternative was only intended to be a cursory review.

Table 28 Comparison of Wastewater Treatment Alternatives

Treatment Alternatives	Capital Cost	Equivalent Uniform Annual Cost
2: 180 Day Storage with Aeration	$5,472,850	$353,286
3: SAGR	$5,085,500	$360,837
4: 210 Day Storage with Irrigation	$9,287,000	$485,130
5: Mechanical Treatment	$8,327,600	$760,139
6: Regionalization with Sioux Falls	$12,281,604	
7: SAGR/ANSAGR with Nutrient Removal	$8,567,125	$577,580
8: Total Retention	$17,022,044	$933,784

Treatment Alternatives 1, “Do Nothing” is not recommended. This alternative will not address any of the deficiencies of the system.

Treatment Alternative 2, "180-Day Storage with Aeration" is not recommended. This alternative has the lowest EUAC cost. However, this alternative cannot guarantee to meet the future ammonia limits and land acquisition is anticipated to be difficult.

Treatment Alternative 3, "SAGR" is not recommended. This alternative has the lowest capital cost and is very close to having the lowest EUAC. The O&M costs are based on full build-out. The actual O&M costs would be lower in the early years thus reducing the EUAC. While this alternative will meet the current discharge requirements, this alternative does not meet the future nutrient removal requirements. A positive for this option is land acquisition will not be required and the water source protection district will not be affected.

Treatment Alternative 4, "210-Day Storage with Irrigation" is not recommended. This alternative is not the most cost effective alternative. In addition, finding a site that meets the setback and soil requirements could be difficult. It is anticipated that land acquisition will also be difficult.

Treatment Alternative 5, "Mechanical Treatment" is not recommended. This alternative is not the most cost effective alternative. Operation and maintenance costs for this option are significantly higher than other options.

Treatment Alternative 6, "Regionalization with Sioux Falls" is not recommended. This alternative is not the most cost effective alternative.

Treatment Alternative 7, "SAGR/ANSAGR with Future Nutrient Removal" is recommended. This alternative allows the owner to construction the SAGR portion of the wastewater facility now and implement the nutrient removal at a later date, presumably when the nutrient removal requirements are implanted by the DENR.

Treatment Alternative 8, "Total Retention" is not recommended. This alternative is the most costly due to the large amount of land required to be purchased, the large amount of earthwork required and the likelihood of landowner opposition to this large of a wastewater treatment facility.

IMPACT ON OWNER'S BUDGET

The City provided SEI their sewer revenue and expenses for the last three years. SEI evaluated the budget and the cost of the recommended improvements to determine how the City could fund the project. Based on Dell Rapids' current revenue and expenses, they will have to obtain grant and loan dollars from various funding agencies to finance the project. The loan is based on an interest rate of 3.0% over 20 years. The owner's sewer fees will be used to make the loan payments. The current monthly sewer rate is a minimum of $15.28 plus $4.22 per 1,000 gallons of water usage. The charge for 5,000 gallons is $36.38. It should be noted that the 2015 budget is operating in a deficit and the City plans to transfer money from reserves to balance the budget. In 2012 and 2013 the sewer fund averaged $54,000 in net profit.

Table 29 Funding Proposed Improvements

Revenue	$525,998
Transfer In	$278,545
Expenses	$488,920
Current Debt Payment	$277,920
Net Cash From Operations	**$37,703**
New Loan Payment	$341,825
Debt Reserves (10%)	$34,183
Net Fund Balance	**-$338,305**
Monthly Rate Increase	$22.00
Number of Customers	1,284
Annual Revenue Generated	$338,976
Fund Balance After Increase	**$671**

The above table shows that the City of Dell Rapids would have to increase their sewer rates to fund the project. The City will try to obtain grant dollars to reduce the loan amount. In order to be eligible for grant dollars the DENR has required a minimum monthly sewer rate of $30.00 for 5,000 gallons. The City of Dell Rapids currently meets this requirement. The City should also consider raising their rates annually by 3%. This will keep up with the cost of inflation and reduce a bigger jump in rates to complete any future projects.

The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table.

Table 30 Potential Grant/Loan Amounts

Grant/Loan	40/60	30/70	20/80	10/90	0/100
Expenses	$488,920	$488,920	$488,920	$488,920	$488,920
Current Debt	$277,920	$277,920	$277,920	$277,920	$277,920
Project Cost	$8,567,125	$8,567,125	$8,567,125	$8,567,125	$8,567,125
Grant Amount	$3,426,850	$2,570,138	$1,713,425	$856,713	$0
Loan Amount	$5,140,275	$5,996,988	$6,853,700	$7,710,413	$8,567,125
Annual Loan Payment	$345,507	$403,092	$460,676	$518,261	$575,845
Debt Reserves	$34,551	$40,309	$46,068	$51,826	$57,585
Total Annual Cost	$1,146,897	$1,210,240	$1,273,583	$1,336,926	$1,400,269
Revenue	$804,543	$804,543	$804,543	$804,543	$804,543
Balance After Project	-$342,355	-$405,698	-$469,041	-$532,384	-$595,727
Minimum Rate Increase	$22.22	$26.33	$30.44	$34.55	$38.66
Current Rate (5,000 gal)	$36.38	$36.38	$36.38	$36.38	$36.38
Proposed Monthly Rate	**$58.60**	**$62.71**	**$66.82**	**$70.93**	**$75.04**

SEI recommends the City complete a rate study which includes the proposed improvements. The above calculations are very cursory. The rate analysis is more in depth and will give a more accurate depiction of the impact on rates.

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI will request comments on the proposed improvements prior to construction from various agencies. These comment letters will be provided to the funding agencies.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The City of Dell Rapids will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. The City will work with SECOG to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies in order to meet their requirements.

SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

This Facility Plan identified several deficiencies with the treatment system that do not meet current SD Design Criteria Standards. The recommended alternatives will bring the system into compliance and provide an improved system to adequately handle growth.

DESIGN OF SELECTED PLAN

The proposed alternatives should be designed by Stockwell Engineers. All construction plans and specifications will be reviewed and approved by the SD DENR. All state bid laws will be followed for the bidding process.

LAND ACQUISITION

Land acquisition, temporary construction easements and permanent easements will not be necessary to complete the improvements.

IMPLEMENTATION SCHEDULE

The City should implement the recommended improvements as soon as possible. Funding application should be submitted for the first round of DENR funding in 2016. The earliest construction could begin is 2017.

REFERENCES

South Dakota Department of Environment and Natural Resources, (March 1991). Recommended Design Criteria Manual Wastewater Collection and Treatment Facilities, Pierre, SD: Division of Environmental Services.

Appendix A
Surface Water Discharge Permit

Permit No.: SD0022101

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Surface Water Discharge Permit
Authorizing Discharge
Under The South Dakota Surface Water Discharge System

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the ***City of Dell Rapids***

is authorized under this permit to discharge to

the ***Big Sioux River***

from its wastewater treatment facility located in the Northwest ¼ of the Southwest ¼ of Section 16, Township 104 North, Range 49 West, in Minnehaha County, South Dakota (Latitude 43.809832°, Longitude -96.727183°), in accordance with discharge points, effluent limits, monitoring requirements, and other conditions set forth herein. Authorization is limited to those outfalls specifically listed in the permit. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

This permit shall become effective **November 1, 2014**.

This permit and the authorization to discharge shall expire at midnight, **September 30, 2019**.

Signed this 8th day of October, 2014,

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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APPENDIX A – Emergency Discharge and SSO Reporting Form

APPENDIX B – Land Application Monitoring Summary Form

1.0 DEFINITIONS

"30-day (and monthly) Average" means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

"7-day (and weekly) Average" means the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week that begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

"Acute Toxicity" occurs when in the LC_{50} test when 50 percent or more mortality is observed for either species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the effluent results to be considered valid.

The "**Approval Authority"** is the Secretary of the South Dakota Department of Environment and Natural Resources.

"ARSD" means the Administrative Rules of South Dakota. These often referred to as "Standards".

An **"Authorized Release"** is a discharge from a permitted outfall that meets all permit conditions and effluent limits.

"Biosolids" means any sewage sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

"BOD_5" means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **"Bypass"** is the intentional diversion of waste streams from any portion of a collection system or treatment facility other than the permitted outfall(s). Bypasses may result in releases from the sanitary sewer collection system (see **"Sanitary Sewer Overflow"**) or emergency releases from the treatment facility (see **"Emergency Discharge"**). If a bypass results in a release of wastewater, it shall be sampled and reported as either a sanitary sewer overflow from the collection system or an emergency discharge from the treatment facility.

"Chronic Toxicity" occurs when in the IC_{25} test when the survival, growth, or reproduction, as applicable, for either test species, at the effluent dilution(s) designated in this permit, is significantly less (at the 95 percent confidence level) than that observed for the control specimens.

"Composite Samples" shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

1. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

2. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

3. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

4. Continuous collection of sample, with sample collection rate proportional to flow rate.

"Daily Maximum (Daily Max.)" is the maximum value allowable in any single sample or instantaneous measurement.

"DMR" means Discharge Monitoring Report, EPA Form 3320-1, or a report filed electronically by an EPA-approved electronic system, or other forms provided by the Department which are used to report sampling data.

An **"Emergency Discharge"** is a discharge from the treatment or containment system through a release structure or over or through retention dikes or walls. An emergency discharge is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to reaching the treatment or containment system. An emergency discharge is an enforceable violation of the permit unless it is an allowable bypass that does not cause effluent limitations to be exceeded, an anticipated bypass approved by the Secretary, or an unanticipated bypass allowed under Section 4.1 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements.

"EPA" or **"US EPA"** means United States Environmental Protection Agency.

A **"Grab Sample,"** for monitoring requirements, is a single "dip and take" sample collected at a representative point in the discharge stream.

Inhibition Concentration, 25 Percent (IC_{25}) is a point estimate of the toxicant concentration that would cause a 25-percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method).

An **"Industrial User"** is a non-domestic source of pollutants discharged into a publicly owned treatment works.

An **"Instantaneous Measurement,"** for monitoring requirements, is a single reading, observation, or measurement either taken at the facility or within 15 minutes of the sample.

"Instream Waste Concentration (IWC)" is the concentration of a toxicant in the receiving water after mixing. It is also referred to as the receiving water concentration (RWC).

"Lethal Concentration, 50 Percent (LC_{50})" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

"MGD" is the measure of flow rate meaning million gallons per day.

"Mixing Zone (Zone of mixing)" is an area in a stream where an effluent or discharge mixes with the upstream water under ARSD 74:51:01:01. A mixing zone for wastewater discharges to flowing waters is allowed under ARSD 74:51:01:26. Lakes are not allowed a mixing zone under ARSD 74:51:01:27.

"No Observed Effect Concentration (NOEC)" is the highest tested concentration of an effluent or a toxicant that causes no observable adverse effect on the test species (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically different from the controls). NOEC is determined using hypothesis testing.

"pH" is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

"PTI" means Preliminary Toxicity Investigation. Up to a 30-day period where the permittee investigates the cause(s) of a whole effluent toxicity exceedance and if the toxicity is known, includes a proposal for its elimination.

A **"Publicly-Owned Treatment Works"** or **"POTW"** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature that is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

"Reasonable Potential (RP)" is the likelihood that an effluent will cause or contribute to an excursion above a water quality standard based on a number of factors, including the use of data (e.g. whole effluent toxicity test data). In the context of this document, references to RP and WET limits include both lethal and sub-lethal effects.

A **"Sanitary Sewer Overflow"** or **"SSO"** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system, including sewer lines, manholes, lift stations, etc. An SSO is an enforceable violation of the permit unless it is an allowable bypass that does not cause effluent limitations to be exceeded, an anticipated bypass approved by the Secretary, or an unanticipated bypass allowed under Section 4.1 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements.

"SDDENR" means the South Dakota Department of Environment and Natural Resources.

"Secretary" means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

"Severe Property Damage" is substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

"Sewage Sludge" is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

A **"Significant Industrial User"** is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:

1. Is subject to Categorical Pretreatment Standards under ARSD Chapter 74:52:10 (a.b.r. 40 CFR 403.6 and 40 CFR chapter I, subchapter N);

2. Discharges an average of 25,000 gallons per day or more of process wastewater to the publicly owned treatment works (excluding sanitary, non-contact cooling water, and boiler blowdown wastewater);

3. Contributes a process wastewater that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the publicly owned treatment works; or,

4. Is designated as such by the Secretary on the basis that the Industrial User has a reasonable potential for adversely affecting the publicly owned treatment works or for violating any pretreatment standard or requirement.

"Surface Water Discharge (SWD) Permitting Program" is the state program that regulates the discharge of pollutants into the state's waters. This is the state's implementation of the federal NPDES program.

"Test Acceptability Criteria (TAC)" are specific criteria for determining whether toxicity test results are acceptable, pursuant to EPA's WET test methods in 40 CFR 136 (additional TAC may be established by the Department). The effluent and reference toxicant must meet specific criteria as defined in the test method.

"Toxic Unit - Acute (TU_a)" is 100 times the reciprocal of the effluent concentration that causes 50 percent of the organisms to die in an acute toxicity test ($TUa = 100/LC_{50}$) (see LC_{50}).

"Toxic Unit - Chronic (TU_c)" is 100 times the reciprocal of the effluent concentration that causes no observable effect on the test organisms in a chronic toxicity test ($TUc = 100/IC_{25}$).

"Toxicity Identification Evaluation (TIE)" is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

"Toxicity Reduction Evaluation (TRE)" is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity,

evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

"TSS" means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Water Quality-based Effluent Limit (WQBEL)" is a NPDES permit limit that is developed to assure protection of aquatic life or human health consistent with applicable State water quality standards.

2.0 PERMIT COVERAGE

2.1 Permit Transfers

1. Coverage under this permit may be transferred to a new permittee if:

    a. The signatory authority notifies the Secretary at least 30 days in advance of the proposed transfer date;

    b. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

    c. The new permittee submits a Certification of Applicant form certifying the new permittee is qualified to perform the obligations of a permit holder in accordance with South Dakota Codified Law 1-40-27.

2. The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

2.2 Reopener Provisions

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this permit are modified in such a manner as to require different effluent limits than contained in this permit;

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted that calls for different effluent limits than contained in this permit;

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this permit;

4. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA;

5. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit;

6. Whole Effluent Toxicity: Whole effluent toxicity is detected in the discharge; this permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity (WET) testing, a WET limit, a compliance date, additional or modified numerical limits, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.;

7. Pretreatment Program: The permittee is required to develop and implement a pretreatment program, regulating indirect discharges of wastewater into its publicly owned treatment works; or

8. Other Changes: Other conditions or standards change so that the discharge no longer qualifies for this permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

2.3 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to discharge under this permit.

2.4 Continuation of the Expired Permit

An expired permit continues in full force and effect until a new permit is issued. If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must submit an application at least 180 days before the expiration date of the permit.

2.5 Property Rights

1. The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state, or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties.

2. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, that may result from actions taken under the permit.

2.6 Permit Actions

The Secretary may modify, revoke and reissue, or terminate coverage under this permit for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

2.7 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.0 EFFLUENT LIMITS

3.1 Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under this permit is a violation of the South Dakota Water Pollution Control Act and could subject the person(s) responsible for such discharge to penalties under Section 34A-2-75 of the Act. Knowingly discharging from an unauthorized location or failing to report a discharge as required by the permit could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

Outfall Number	Description of Discharge Points
001A	Any discharge from the discharge structure in Cell #3 to the Big Sioux River (Latitude 43.812000°, Longitude -96.735417°).
002N	Any discharge to waters of the state from the land application pump system or land application sites (Latitude 43.829167°, Longitude -96.735556°). **No discharge shall occur from Outfall 002N.**
002R	Any land application of wastewater from the land application system or land application sites on the city golf course (Latitude 43.829167°, Longitude -96.735556°). **Land application of wastewater is not considered a discharge.**

3.2 Prohibition of Bypass, Emergency Discharges, and SSOs

1. The permittee may allow bypasses to occur that do not result in a discharge and will not result in a violation of the effluent limits, but only if for essential maintenance to ensure efficient operation.

2. An emergency discharge, sanitary sewer overflow, or bypass, other than that described in Paragraph 1 above, is prohibited and the Secretary may take enforcement action against a permittee for bypass, unless:

   a. The emergency discharge, SSO, or bypass was unavoidable to prevent loss of life, threat to public health, personal injury, or severe property damage;

   b. There were no feasible alternatives to the emergency discharge, SSO, or bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent an emergency discharge, SSO, or bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

   c. The permittee submitted notices as required in **Section 4.1 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements.**

3. The permittee shall sample an emergency discharge or SSO for the parameters and at the frequencies listed in **Section 3.7 – Self-Monitoring Requirements - *Sanitary Sewer Overflows and Emergency Discharges***. The sample results shall be reported in accordance with the reporting requirements listed in **Section 4.1 – Reporting of Monitoring Results**.

4. The Secretary may approve an emergency discharge, SSO, or bypass, after considering its adverse effects, if the Secretary determines that it will meet the three conditions listed above in Paragraph 2.

5. If a bypass, emergency discharge, or sanitary sewer overflow occurs or is expected to occur, the permittee shall take the appropriate measures to minimize the discharge of pollutants. Such measures may include the closing of facilities that contribute wastewater to the sewer system until the discharge is terminated.

3.3 Proper Operation and Maintenance

1. The permittee shall at all times properly operate and maintain all facilities and treatment and control systems that are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance.

2. Proper operation and maintenance may include adequate laboratory controls and appropriate quality assurance procedures.

3. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

4. This may include the maintenance of freeboard levels of lagoons or holding ponds.

3.4 Inspection Requirements

The permittee shall inspect its wastewater treatment facility, outfall structures, and lift stations regularly as outlined below. The inspections shall be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. In addition, the inspections shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility and lift stations. The permittee shall maintain a notebook recording information obtained during the inspection.

1. **Facility Inspections.** The permittee shall inspect the facility and discharge location on at least a **monthly** basis. During a discharge, the permittee shall inspect the facility and discharge location on at least a **daily** basis. At a minimum, the notebook shall include the following:

   a. Date and time of the inspection;

   b. Name of the inspector(s);

   c. The facility's discharge status;

   d. The measured amount of freeboard or water depth in each pond;

   e. Identification of operational problems and/or maintenance problems;

f. Recommendations, as appropriate, to remedy identified problems;

g. A brief description of any actions taken with regard to problems identified; and,

h. Other information, as appropriate.

2. **Land Application Inspections.** Land application equipment and land application sites shall be inspected at least **daily** while land application is occurring. The inspection shall be conducted to determine that the land application system is operating correctly and to ensure that no runoff is occurring as a result of land application of treated wastewater. At a minimum, the notebook shall include the following:

   a. Date and time of the inspection;

   b. Name of the inspector(s);

   c. The facility's land application status, including any runoff from the application site or discharge from the piping equipment;

   d. Identification of operational problems and/or maintenance problems;

   e. Recommendations, as appropriate, to remedy identified problems;

   f. A brief description of any actions taken with regard to problems identified; and,

   g. Other information, as appropriate.

3. **Lift Station Inspections.** The permittee shall inspect each lift station on at least a **weekly** basis. The inspections shall be performed to determine if proper operation and maintenance procedures are being undertaken and verify no sanitary sewer overflows are occurring or have occurred. During any sanitary sewer overflow, the lift stations shall be inspected on a **daily** basis. At a minimum, the notebook shall include the following for each lift station:

   a. Date and time of the inspection;

   b. Name of the inspector(s);

   c. Whether a sanitary sewer overflow is occurring or has occurred;

   d. Identification of operational problems and/or maintenance problems;

   e. Cleaning of screenings, if applicable;

   f. Testing of alarms, if applicable;

   g. Hour meter readings;

   h. Recommendations, as appropriate, to remedy identified problems;

   i. A brief description of any actions taken with regard to problems identified; and,

   j. Other information, as appropriate.

4. The permittee shall maintain the notebook(s) for the facility and each lift station in accordance with proper record-keeping procedures and shall make the notebook(s) available for inspection, upon request, by the Secretary or the US EPA.

3.5 Pre-Discharge Sampling Requirements

1. The permittee shall receive permission from SDDENR to discharge prior to the start of any discharge from the facility. If a discharge occurs without permission from SDDENR, then the discharge may be considered a permit violation. The permittee shall collect a grab sample from each cell from which it will discharge and have the sample analyzed for the parameters listed below. The permittee shall call SDDENR at (605) 773-3351 to request permission for the discharge and shall provide SDDENR with the sample results for the following parameters:

   a. Five-Day Biochemical Oxygen Demand (BOD_5), mg/L;

   b. Total Suspended Solids (TSS), mg/L;

   c. pH, s.u.;

   d. *Escherichia coli (E. coli)*, no./100 mL;

   e. Total Coliform, no/100 mL;

   f. Ammonia-Nitrogen, mg/L; and

   g. Water Temperature, °C

2. The request to discharge shall explain why a discharge is needed, when the discharge would start, the expected duration of the discharge, the approximate volume of water to be discharged, and the estimated flow conditions of the receiving stream.

3. No discharge shall occur until permission has been granted by the Secretary.

3.6 Effluent Limits and Self-Monitoring Requirements – *Outfall 001A*

1. No discharge shall occur until permission for discharge is granted by the South Dakota Department of Environment and Natural Resources. The permittee shall sample its wastewater in accordance with **Section 3.5 – Pre-Discharge Sampling Requirements** and provide the results to SDDENR.

2. Upon the effective date of this permit and lasting through the life of the permit, the quality of effluent discharged by the facility shall, as a minimum, be monitored and meet the effluent limits as set forth in the following table. The permittee shall report the monitoring results in accordance with **Section 4.1 – Reporting of Monitoring Results.**

Effluent Limits and Self-Monitoring Requirements – Outfall 001A						
Effluent Parameter		**Effluent Limit and Reporting Values**			**Monitoring Requirements**	
		30-Day Average [1]	**7-Day Average [1]**	**Daily Maximum [1]**	**Frequency**	**Sample Type**
Five-Day Biochemical Oxygen Demand (BOD_5)		30 mg/L	45 mg/L	--	3 Times/Week [2]	Grab
Total Suspended Solids (TSS) [3]		90 mg/L	135 mg/L	--	3 Times/Week [2]	Grab
Escherichia coli (E. coli)	May 1 – September 30 [4]	126 per 100 mL	--	235 per 100 mL	3 Times/Week [2]	Grab
Total Coliform [4]		5,000 per 100 mL		20,000 per 100 mL	3 Times/Week [2]	Grab
Ammonia -Nitrogen as (N)	January 1 – January 31	4.6 mg/L	--	8.1 mg/L	3 Times/Week [2, 5]	Grab
	February 1 – February 29	4.6 mg/L	--	8.1 mg/L	3 Times/Week [2, 5]	Grab
	March 1 – March 31	2.9 mg/L	--	8.1 mg/L	3 Times/Week [2, 5]	Grab
	April 1 – April 30	15.9 mg/L	--	69.3 mg/L	3 Times/Week [2, 5]	Grab
	May 1 – May 31	15.9 mg/L	--	69.3 mg/L	3 Times/Week [2, 5]	Grab
	June 1 – June 30	1.6 mg/L	--	2.9 mg/L	3 Times/Week [2, 5]	Grab
	July 1 – July 31	1.6 mg/L	--	2.9 mg/L	3 Times/Week [2, 5]	Grab
	August 1 – August 31	1.6 mg/L	--	2.9 mg/L	3 Times/Week [2, 5]	Grab
	September 1 – September 30	1.6 mg/L	--	2.9 mg/L	3 Times/Week [2, 5]	Grab
	October 1 – October 31	3.8 mg/L	--	6.6 mg/L	3 Times/Week [2, 5]	Grab
	November 1 – November 30	3.8 mg/L	--	6.6 mg/L	3 Times/Week [2, 5]	Grab
	December 1 – December 31	4.6 mg/L	--	8.1 mg/L	3 Times/Week [2, 5]	Grab
pH		The pH of the discharge shall not be less than 6.5 standard units or greater than 9.0 standard units in any sample.			3 Times/Week [2, 5]	Instantaneous [6]
Water Temperature [7]		Report, °C	--	Report, °C	3 Times/Week [2, 5]	Instantaneous [8]
Flow Rate [7]		Report, MGD	--	Report, MGD	3 Times/Week [2]	Instantaneous

Effluent Limits and Self-Monitoring Requirements – Outfall 001A					
	Effluent Limit and Reporting Values			**Monitoring Requirements**	
Effluent Parameter	**30-Day Average [1]**	**7-Day Average [1]**	**Daily Maximum [1]**	**Frequency**	**Sample Type**
Duration of Discharge [7]	Report Monthly Total, Days			Monthly	Calculate
Total Flow [7]	Report Monthly Total, MG			Monthly	Calculate
No chemicals, such as chlorine, shall be used without prior written permission from the Secretary.					

[1] See Definitions.

[2] A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week. All of the samples collected during the 7-day or 30-day period are to be used in determining the averages. The permittee always has the option of collecting additional samples if appropriate.

[3] If analytical results for BOD_5 show compliance with the permit limits, the permittee may request TSS permit limits of 90 mg/L (30-day average) and 135 mg/L (7-day average). **The Secretary may approve these alternate limits without additional public notice.**

[4] For *E. coli* and total coliforms, if a minimum of five samples are collected in a calendar month, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. If less than five samples are taken during any calendar month, the daily maximum effluent limit still applies. This sampling protocol for *E. coli* only applies if the discharge occurs between May 1 and September 30.

[5] The pH and temperature of the effluent shall be determined when the ammonia samples are collected.

[6] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standards units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

[7] This parameter shall be monitored and reported, but does not have an effluent limit associated with it.

[8] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial-type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

3.7 Effluent Limits and Self-Monitoring Requirements – *Outfall 002N and Outfall 002R*

Effective immediately and lasting throughout the life of this permit, the permittee shall have **no discharge** from the land application system and **no discharge** of land applied waters to waters of the state, except in accordance with the emergency release provisions of the permit. **The act of land applying treated wastewater is not considered a discharge.**

1. The application rate at the land application site shall be controlled so as to prevent any surface runoff of the effluent.

2. To prevent ground saturation and runoff, no application is permitted during periods of heavy or prolonged rainfall, snow cover or when the ground is frozen. **No land application shall take place between November 1 and March 31, unless prior approval is granted by SDDENR.**

3. The land application equipment shall, to the extent feasible, be installed in such a manner as to minimize wind drift of the effluent and formation of aerosols.

4. *Escherichia coli (E. coli)* shall not exceed a concentration of 126 per 100 milliliters in any one sample. This is based on the immersion recreation 30-day geometric mean limit for *E. coli* and the permit writer's judgment. It is included here due to the potential for human contact with irrigation water. **If any *E. coli* sample is greater than 126 per 100 milliliters, the land application shall be terminated immediately until a safe sample is collected.**

5. Appropriate warning signs shall be posted on the land application site to inform the public of the nature of the water.

6. By **April 1, 2015**, the permittee shall update and submit a land application best management plan for approval to SDDENR. The land application best management plan shall be based on South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities. Once approved, the land application best management plan becomes an enforceable part of the permit.

All land application of wastewater shall be monitored for the following parameters at the frequency and with the type of measurement indicated. Monitoring is only required during months when land application is occurring. The permittee shall report the land application monitoring results in accordance with **Section 4.1– Reporting of Monitoring Results.** See **APPENDIX B – Land Application Monitoring Summary Form**.

Effluent Limits and Self-Monitoring Requirements – Outfall 002R			
Effluent Parameter	**Frequency**	**Reporting Values [1]**	**Sample Type [1]**
Flow Rate of Land Application, MGD	Weekly	Daily Maximum; 30-Day Average	Instantaneous
Duration of Land Application, days	Monthly	Monthly Total	Calculate
Total Amount Land Applied, million gallons	Monthly	Monthly Total [2]	Calculate
pH, standard units	Monthly [3]	Daily Minimum; Daily Maximum	Instantaneous [4,5]
Water Temperature, °C	Monthly [3]	Daily Maximum; 30-Day Average	Instantaneous[4,6]
Escherichia coli (E. coli), no./100 mL [7]	Monthly [3]	Daily Maximum; 30-Day geometric mean[3]	Grab
Sodium Absorption Ratio (SAR) [8]	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Conductivity, µmhos/cm	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Kjeldahl Nitrogen, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Ammonia-Nitrogen (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab [4]
Total Nitrates (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Nitrites (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Sulfates, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Chlorides, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Phosphorous (as P), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Dissolved Solids (TDS), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab

[1] See Definitions.

[2] The date and time of the start and termination of each land application event shall also be reported in the comments section of the Land Application Monitoring Summary Form (Appendix B).

[3] A minimum of one sample per month shall be taken for the duration of land application activities.

Effluent Limits and Self-Monitoring Requirements – Outfall 002R			
Effluent Parameter	**Frequency**	**Reporting Values [1]**	**Sample Type [1]**

Samples shall be taken from the irrigation wetwell and shall be representative of the land applied water. The permittee always has the option of collecting additional samples if appropriate.

[4] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[5] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

[6] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[7] **An *E. coli* limit of 126 per 100 milliliters applies to the water used for irrigation.** During irrigation, if an *E. coli* sample result is greater than 126 per 100 milliliters, irrigation must be stopped immediately and SDDENR shall be notified within 24 hours. To begin irrigating again, a sample taken from the irrigation pond must yield *E. coli* results of 126 per 100 milliliters or less.

[8] The sodium absorption ratio is calculated using the Gapon equation: $SAR = \frac{Na}{\sqrt{\frac{(Ca+Mg)}{2}}}$

3.8 Self-Monitoring Requirements – *Sanitary Sewer Overflows and Emergency Discharges*

All sanitary sewer overflows and emergency discharges shall be monitored for the following parameters at the frequency and with the type of measurement indicated. Promptly upon discovery of an emergency discharge or sanitary sewer overflow, the discharge shall be monitored as shown below. Knowingly discharging or failing to report a discharge within a reasonable time from the permittee first learning of a discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act. The permittee shall report the monitoring results in accordance with **Section 4.1 – Reporting of Monitoring Results.**

Self-Monitoring Requirements – SSO's and Emergency Discharges			
Effluent Parameter	**Frequency**	**Reporting Values [1]**	**Sample Type [1]**
Duration of Discharge, days	Monthly	Monthly Total [2]	Calculate
Total Flow, million gallons	Monthly	Monthly Total	Calculate
Flow Rate, MGD	Daily	Actual Value	Instantaneous
pH, standard units	Daily	Actual Value	Instantaneous [3, 4]
Water Temperature, °C	Daily	Actual Value	Instantaneous [4, 5]
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	Daily	Actual Value	Grab
Total Suspended Solids (TSS), mg/L	Daily	Actual Value	Grab
Ammonia-Nitrogen (as N), mg/L	Daily	Actual Value	Grab [4]
Escherichia coli (E. coli), no./100 mL	Daily [6]	Actual Value	Grab
Total Coliform, no./100 mL	Daily [6]	Actual Value	Grab

[1] See Definitions.

[2] The date and time of the start and termination of each discharge shall also be reported in the comment section of the DMR.

[3] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

[4] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[5] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[6] *E. coli* and total coliform levels shall be monitored in the discharge. If a minimum of five samples are collected in a calendar month, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. If less than five samples are taken during any calendar month, the daily maximum shall be reported and the maximum limit still applies.

3.9 Monitoring Procedures

1. Effluent samples taken in compliance with the monitoring requirements established under this permit shall be collected prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2. Monitoring shall be conducted according to test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR, Part 136), unless other test procedures have been specified in this permit or approved by the Secretary.

3.10 Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit at the designated points, using test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR 136) or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit and reported to SDDENR.

3.11 Capacity, Management, Operation, and Maintenance Program

1. In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows or emergency discharges, the permittee shall develop and submit the program to the Secretary. The program shall, at a minimum, address the following areas:Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;

2. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational recordkeeping, and other appropriate items;

3. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance recordkeeping, parts and equipment inventory, and other appropriate items; and

4. Sewer system capacity evaluation: The capacity evaluation includes the following:

    a. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);

    b. Identification of problem areas (overflows, surcharged lines, basement backups, etc.);

    c. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and

    d. Sewer rehabilitation recommendations.

5. Timelines: This program shall identify timelines and specific dates for completing any identified changes or improvements.

6. SDDENR Approval: The permittee shall submit the program to SDDENR for approval. Upon approval, the permittee shall implement the program.

3.12 Construction Schedule

1. The permittee shall achieve compliance with the effluent limits specified for discharges in accordance with the following schedule:

   a) The city shall submit **quarterly** progress updates to SDDENR until construction is completed. The first update is due by **January 1, 2015**.

   b) The city shall hire a professional engineer to conduct a study to determine the steps they will take to upgrade their wastewater treatment facility in order to meet effluent limits. The study shall be submitted to SDDENR by **April 1, 2015**.

   c) The city shall submit plans and specifications for any required upgrades to SDDENR for review and approval by **April 1, 2016**. The plans and specifications must be prepared by a professional engineer.

   d) The city shall begin construction by **July 1, 2017**.

   e) The city shall complete construction by **October 1, 2018**.

2. The milestones must be completed by the date specified. The permittee shall submit to the SDDENR a written notice of compliance or noncompliance with each milestone by the date specified above. If the permittee is not in compliance with the milestone, the notice shall include the cause of any noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

4.0 REPORTING & RECORD KEEPING REQUIREMENTS

4.1 Reporting of Monitoring Results

1. Effluent monitoring results obtained from **Outfall 001A** during each month shall be summarized and reported on a separate Discharge Monitoring Report Form (as defined in **Section 1.0 - Definitions**), and submitted to SDDENR on a **monthly** basis.

2. Land application monitoring results obtained from **Outfall 002R** shall be summarized for each month, and reported on separate Land Application Monitoring Summary Forms (Appendix B), and submitted to SDDENR no later than the **28th day of the month** following the reporting period.

3. Effluent results obtained from all other sources (including No Discharge **Outfall 002N)** shall be reported on Emergency Discharge and SSO Reporting Summary Forms in Appendix A.

4. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with **Section 4.4 – Signatory Requirements** and submitted to the Secretary at the following address:

   South Dakota Department of Environment and Natural Resources

Surface Water Quality Program
PMB 2020
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

5. All reports must be submitted **no later than the 28th day of the month** following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported on the Discharge Monitoring Report.

6. In accordance with SDCL 1-40-39, the Secretary is authorized to accept a document with an electronic signature. SDDENR shall provide for the authenticity of each electronic signature by adhering to any standards established by the South Dakota Bureau of Information and Telecommunications pursuant to SDCL 53-12-47 and 53-12-50 or any other standards established by rules promulgated pursuant to SDCL Chapter 1-26.

4.2 Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements

1. The permittee shall report any effluent violation, bypass, emergency discharge, or sanitary sewer overflows (SSOs) related to this permit or permitted facility that may endanger health or the environment as soon as possible, but no later than 24 hours after becoming aware of the circumstances as follows:

   a. During regular business hours (8:00 a.m. - 5:00 p.m. Central Time), the report shall be made at (605) 773-3351.

   b. Outside of normal business hours, the permittee shall contact the South Dakota Emergency Management at (605) 773-3231.

2. Effluent violations, bypass, sanitary sewer overflows, and emergency discharges that do not meet the conditions above shall be reported to the Secretary within 24 hours from the time the permittee becomes aware of the circumstances as follows:

   a. During regular business hours (8:00 a.m. - 5:00 p.m. Central Time), the report shall be made at (605) 773-3351.

   b. Outside of normal business hours, the permittee shall leave a message at 1-800-GET-DENR (1-800-438-3367).

3. The permittee shall submit notice of bypass as follows:

   a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Secretary at least 10 days before the date of the bypass.

   b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the secretary at (605) 773-3351 by the first workday (8:00 a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

4. The Secretary may require the permittee to notify the general public or downstream users that could be or will be impacted by the effluent violation, bypass, emergency discharge, or SSO.

   a. In making the decision to require public notification, the Secretary will consider the potential impacts as a result of the effluent violation, bypass, emergency discharge, or SSO, the downstream beneficial uses (such as drinking water or recreation), and the potential for public contact.

   b. If required by the Secretary, the permittee shall notify the public and/or downstream users as soon as possible, but in no case more than 24 hours after the effluent violation, bypass, emergency discharge, or SSO begins.

5. In addition to verbal notification, the permittee shall submit a written report of the circumstances regarding the effluent violation, bypass, sanitary sewer overflow, or emergency discharge to the Secretary. The permittee shall use the Emergency Discharge and SSO Reporting Summary Form in Appendix A to report an emergency discharge or SSO. Effluent violations shall be reported on the Discharge Monitoring Report forms required in **Section 4.1 – Reporting of Monitoring Results**.

   a. Reports shall be submitted in accordance with **Section 4.1 – Reporting of Monitoring Results**.

   b. The written submission shall contain:

      i. A description of the event and its cause;
      ii. The period of the event, including exact dates and times;
      iii. Where the wastewater was discharged;
      iv. The estimated time the event is expected to continue if it has not been corrected;
      v. Any adverse effects, such as fish kills;
      vi. If public notification was required, describe how the public was notified of the discharge; and
      vii. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

6. The written report shall be submitted by the 28th day of the following month. The Secretary may require a written report to be submitted sooner or may require additional information if the discharge has the potential to impact human health or the environment.

4.3 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The initials or names of the individuals who performed the sampling or measurements;

3. The dates analyses were performed;

4. The time analyses were initiated;

5. The initials or names of individuals who performed the analyses;

6. References and written procedures, when available, for the analytical techniques or methods used; and,

7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

4.4 Signatory Requirements

1. All permit applications, reports or information submitted to the Secretary shall be signed and certified by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described in Paragraph 1 of this section or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may be either a named individual or any individual occupying a named position.

3. If an authorization under Paragraph 2 a. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall include the following certification:

   I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

4.5 Retention of Records

1. The permittee shall retain records of all monitoring information and other data required by this permit. This includes:

   a. Data collected on site;

   b. Copies of all Discharge Monitoring Report Forms;

   c. A copy of the permit;

   d. All calibration and maintenance records;

   e. All original strip chart recordings for continuous monitoring instrumentation;

   f. Copies of all other reports required by this permit; and

   g. Records of all data used to complete the application for this permit.

2. This information must be retained for a period of at least **three years** from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

4.6 Availability of Reports

Except for data determined to be confidential under ARSD Section 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. The name and address of the permittee, permit applications, permits, and effluent data shall not be considered confidential.

4.7 Duty to Provide Information

1. The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2. If the permittee becomes aware that it failed to submit any relevant facts in a permit application form, or submitted incorrect information in a permit application form or any report to the Secretary, it shall promptly submit such facts or information.

4.8 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions. This notification also applies to pollutants that are not subject to effluent limits or other notification requirements in this permit.

5.0 COMPLIANCE REQUIREMENTS

5.1 Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and the federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application (a violation of a condition of this permit is subject to SDCL Section 34A-2-75).

5.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any wastewater discharge and/or sludge disposal or reuse in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

5.3 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5.4 Upset Conditions

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of Paragraph 2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limits).

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under **Section 4.1 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements**; and,

   d. The permittee complied with mitigation measures required under **Section 5.2 – Duty to Mitigate.**

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

5.5 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence

authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in **Section 5.4 – Upset Conditions**, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

5.6 Penalties for Falsification of Reports

1. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75.

2. Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75.

3. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

5.7 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to that the permittee is or may be subject under Section 311 of the Federal Clean Water Act.

6.0 INDUSTRIAL WASTES

6.1 Industrial Users

1. The Permittee has the responsibility to protect the Publicly-Owned Treatment Works (POTW) from pollutants which would inhibit, interfere, or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.

2. During the life of the permit, the permittee shall conduct an industrial waste survey to identify the character and volume of pollutants from each significant industrial user, as well as documenting production data. The permittee shall notify the Secretary of any new introductions by new or existing industrial users or any substantial change in pollutants from any industrial user. Such notice must contain the information described in Paragraph 3 below and be submitted to the Secretary no later than 60 days following the introduction or change.

3. The permittee shall provide adequate notice to the Secretary of any substantial change in the volume or character of pollutants being introduced into the POTW by any other industrial users. For the purposes of this section, adequate notice shall include information on:

   a. The quality and quantity of effluent to be introduced into the POTW; and,

   b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

6.2 Prohibited Discharges

Under no circumstances shall the permittee allow the introduction of the following pollutants to the POTW from any source of nondomestic discharge:

1. Pollutants that create a fire or explosion hazard in the publicly owned treatment works, including but not limited to waste streams with a closed cup flashpoint of less than 60 degrees Celsius (140 degrees Fahrenheit) using the test methods specified in ARSD Section 74:28:22:01 (a.b.r. 40 CFR 261.21);

2. Pollutants that will cause corrosive structural damage to the Publicly owned treatment works (POTW), but in no case discharges with pH lower than 5.0 standard units nor greater than 12.5 standard units;

3. Solid or viscous pollutants in amounts that will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

4. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW;

5. Heat in amounts that will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Celsius (104 degrees Fahrenheit);

6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

7. Pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

8. Any trucked or hauled pollutants, except at discharge points designated by the POTW; and

9. Any pollutant that causes pass through or interference.

6.3 Categorical Standards

In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

6.4 Legal Action

The Secretary retains the right to take legal action against the industrial user and/or the permittee, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

7.2 Removed Substances

1. Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

2. If sludge disposal is necessary, the permittee shall submit to the Secretary a sludge disposal plan for review and approval prior to the removal and disposal of sludge. The permittee shall not dispose of sludge without the Secretary's approval.

APPENDIX A

Emergency Discharge and SSO Reporting Form

EMERGENCY DISCHARGE and SSO REPORTING FORM

This form is to be used to summarize the reporting requirements for any emergency discharge or sanitary sewer overflow.

Address:		**Point of Discharge**	☐ **001A** ☐ **002N** ☐ **SSO** ☐ **Other**
Facility Contact:		**Phone:**	

Description of Event *(Attach additional sheets if necessary)*

Please check the boxes below, as appropriate, to indicate the type of release being reported (See* Definitions *for an explanation of each term).

☐ **Emergency Discharge** ☐ **Sanitary Sewer Overflow**

Please check the boxes below, as appropriate, to indicate the type of emergency discharge being reported (See* Definitions *for an explanation of each term).

Date and Time the discharge began or was discovered:	
Date and Time the discharge was stopped:	

Describe the events resulting in the discharge and its cause(s):

Where did the event occur and where was the wastewater released to:

Describe the steps taken or planned to reduce, eliminate, and prevent reoccurrence:

Time and Date 24-Hour Notice of Noncompliance given to SDDENR:	
Describe any adverse effects, such as fish kills, etc.:	
Duration of discharge (include dates and times):	
Total flow, million gallons:	

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
Date and time of sample							
Water Temperature, °C							
Flow Rate, million gallons per day (MGD)							
pH, standard units							
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L							
Total Suspended Solids (TSS), mg/L							
Ammonia as N, mg/L							
Escherichia Coli (E. coli), no./l00 mL							
Total Coliform, no./l00 mL							

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): _____ Title: _____

Signature: _____ Date: _____

APPENDIX B

Land Application Monitoring Summary Form

LAND APPLICATION MONITORING SUMMARY FORM

This form shall be used to summarize effluent monitoring results for land application under this permit.

Permit Name:	Permit No.:
Address:	
Facility Contact:	Phone:
Number of days land application occurred (include number of days, start, end dates, and times):	

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3
Rate of Land Application, MGD			
Total Amount Land Applied, million gallons			
pH, standard units			
Water Temperature, °C			
Escherichia coli (E. coli), no./l00 mL			
Sodium Absorption Ratio (SAR)[7]			
Conductivity, µmhos/cm			
Total Kjeldahl Nitrogen, mg/L			
Ammonia-Nitrogen (as N), mg/L			
Total Nitrates (as N), mg/L			
Total Nitrites (as N), mg/L			
Total Sulfates, mg/L			
Total Chlorides, mg/L			
Total Phosphorous (as P), mg/L			
Total Dissolved Solids (TDS), mg/L			

Appendix B
Surface Water Discharge Compliance Inspection

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

May 2, 2012

The Honorable Scott Fiegen
Mayor, City of Dell Rapids
PO Box 10
City, SD 57022

RE: Surface Water Discharge Compliance Inspection (SWD Permit Number: SD0022101)

Dear Mayor Fiegen:

The South Dakota Department of Environment and Natural Resources conducted a Surface Water Discharge Compliance Inspection of the city's wastewater treatment facility on April 26, 2012. I appreciate Larry Schildhauer's and Clarence Fjellanger's time and cooperation in supplying the requested information.

I have attached an inspection summary and a copy of the inspection report. Please pay special attention to the Inspection Summary tables and implement the required corrective actions as soon as possible. All corrective actions taken will be reviewed during our next inspection at your facility.

Thank you for your continued efforts to protect the environment and natural resources of South Dakota. Please review this report for accuracy, and respond within thirty days with any needed corrections. If you have any questions about this letter or the inspection reports, please contact me at (605) 773-3351.

Sincerely,

Jill M Riedel

Jill M. Riedel, E.I.T.
Engineer II
Surface Water Quality Program
Enclosures

cc: Seth Draper, EPA Region 8, 8ENF-W-NP
SWD File - Pierre

INSPECTION SUMMARY

Facility: City of Dell Rapids WWTF

SWD Permit: SD0022101

Inspection Date: April 26, 2012

The following comments detail violations of the permit that were identified during the inspection. Corrective actions for each violation are required for the city to come into compliance with its surface water discharge permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
Since the last on-site inspection in September 2010, the city has experienced ammonia violations during the September 2010, December 2010, and May 2011 discharges.	The city must take steps to ensure adequate treatment of the wastewater. These violations are not acceptable and can lead to enforcement actions which can include fines and penalties. The city should look into modifications of its operation to allow for adequate treatment of the wastewater and/or sampling methods to ensure accuracy of sample results.
The operator reported the sewer backed up into some homes during the 2011 flooding on the Big Sioux River.	All discharge and/or overflows, including sewer back-ups must be monitored, reported, and sampled according to the requirements in your SWD permit. Continue your efforts to identify and correct sources of excess infiltration and inflow into the system.
The third quarter 2011 Discharge Monitoring Reports (DMRs) were received a week late.	DMRs shall be submitted in accordance with the following schedule: • January – March: Due April 28th • April – June: Due July 28th • July – September: Due October 28th • October – December: Due January 28th More care should be taken when submitting DMRs.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
A pH meter calibration log is being kept, but does not contain all the required information.	A pH meter calibration log must be kept. This log needs to include the date, time, **initials of the person calibrating the meter**, the meter readings for the 7.0 and 10.0 buffer solutions, the **temperature of the buffer,** and **the buffer expiration date**.

The following comments and corrective actions are recommended and are items that will improve the operation of your facility.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
We would like to encourage you to give Mr. Schildhauer, Mr. Fjellanger, or another representative of the city of Dell Rapids the opportunity to attend the wastewater training courses sponsored by the state to upgrade skills and share knowledge concerning the operation and maintenance of municipal wastewater systems.	For more information as to dates and locations of upcoming courses in your area, contact South Dakota Association of Rural Water Systems, under contract with DENR, at 203 Center Street W., Madison, SD 57042. Phone: (605) 556-7219. Website: http://www.sdarws.com.

NON-MECHANICAL FACILITY INSPECTION CHECKLIST

SOUTH DAKOTA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

I. General Facility Information

Name	City of Dell Rapids WWTF		
Location	About one mile south of city		
SWD Permit No.	SD0022101		
Contact Person / Title	Larry Schildhauer / PWD	Phone Number (Office)	Cell – (605) 321-9012
Responsible Party/Title	Scott Fiegen / Mayor	Phone Number (Office, Cell, Home, Etc)	Office – (605) 428-3595

Persons present during the inspection:

Name	Title / Phone Number	Affiliation
Larry Schildhauer	Public Works Director / (605) 321-9012	City of Dell Rapids
Clarence Fjellanger	Assistant PWD / (605) 428-8395	City of Dell Rapids
Jill Riedel	Engineer II / (605) 362-3543	SDDENR

Mailing Address	PO Box 10 Dell Rapids, SD 57022		
Street Address	302 E. 4th St. Dell Rapids, SD 57022		
Inspection Date	April 26, 2012	Last Inspection Date	Onsite: July 29, 2008 Offsite: Sept 21, 2010
Entrance Time	9:00 AM	Exit Time	11:00 AM
Permit Effective Date	January 1, 2007	Permit Expiration Date	December 31, 2011
Avg. Reported Flow Rate	1.27 MGD	Avg. Design Flow Rate	0.277 MGD
Population Served	3,633 (2010 census)	Design Population Equivalent (if known)	4,300
Date Facility Began Operation	1975	Dates of Facility Upgrades	2001 (see description)
Receiving Water:	Big Sioux River		
Classification:	1, 5, 7, 8, 9, 10		

Facility Description from Statement of Basis and Flow Diagram (Flow diagram attached)

The city of Dell Rapids operates a municipal wastewater treatment facility (WWTF) that serves a population of 3,115 (2000 Census). The WWTF is located in the northwest ¼, of the southwest ¼, Section 16, Township 104 North, Range 49 West in Minnehaha County, South Dakota (Latitude 43° 48' 36.4", Longitude 96° 43' 33.9" – Navigational Quality GPS).

The facility consists of a gravity flow collection system with five area lift stations and one main lift station. One of the area lift stations serves the city swimming pool and a city park comfort station. This lift station is only in use during the summer season. The other area lift stations serve various areas of the city and are in use year-round.

For office use only:	OMA Yes ☐ No ☒	OME Yes ☐ No ☒	SEV Yes ☐ No ☒	ENF Yes ☐ No ☒

The main lift station pumps wastewater to the WWTF, which is a four-cell aeration basin/stabilization pond system. Influent can be measured by a Parshall flume before it enters the aeration basin. The aeration basin is 1.1 acre, Cell #1 is 9.96 acres, Cell #2 is 4.67 acres, Cell #3 is 3.32 acres, and Cell #4 is 0.43 acres in size. Cell #4 used to be the chlorine contact basin but is no longer used for this purpose. The facility has the ability to conduct various internal bypasses (such as primary wastewater can bypass the aeration basin and go directly into Cell #1, etc). Normal operation of the system is in series and the discharge structure is a 90° v-notch weir located in Cell #3 (Outfall 001). Refer to Attachment 1 for an aerial photograph of the facility.

The city has also requested to land apply the treated wastewater on the city's golf course. The land application requirements are included in this proposed permit and Outfall 002 has been added for the land application monitoring and reporting requirements. The facility was originally constructed in 1975 and was upgraded in 2001. The 2001 upgrades included increasing the operating depth of Cell #1 to increase storage volume, replacing aeration piping and diffusers in the aeration basin, construction of a new secondary cell (Cell #2), and construction of a new discharge structure and effluent flow measuring device. The facility has an average design flow of 0.277 Million Gallons per Day (MGD), a peak design flow of 0.555 MGD, and an organic treatment capacity of 629 pounds of BOD per day (permit application). No significant industries are known to contribute flow to the WWTF.

Does the facility match the above description? **Yes**

Is a permit modification needed? **No**

II. Personnel Inventory and Budget

Number of personnel: **2**

Certification	Class I	Class II	Class III	Class IV
Wastewater Treatment	X	X		
Wastewater Collection	X	X		

Is a certified operator required? If yes, what classification is required? **Class II Treatment and Collection**

Budget: **FY 2011**

Annual wastewater expenses	**$ 315,291**	Residential Sewer Use Fee	**$ 13.78 base +$3.92 per 1,000 gallon***
Annual wastewater revenue	**$ 430,743**	Commercial Sewer Use Fee	**Same as above**

Describe any wastewater projects planned during the next three years. **Whenever street projects are planned, the city upgrades the sewer and water utilities at that time. The city is also looking into acquiring additional land out by the lagoons to upgrade the treatment system.**

Describe measures taken to raise funds for the project(s). **None at the moment**

Personnel and budget comments: *The residential sewer use fee for the months June through November is based on the average sewer usage for the preceding December through May sewer bill.

III. Required Recordkeeping and Reporting

Permit Verification

	Yes	No	N/A
1. Is a current copy of the permit and other related materials readily available?	X		
2. Are the number and location of discharge points as described in the permit? If no, explain.	X		
3. Is the facility information correct in the database? If not, list corrected information below.	X		
4. Is the facility information correct in ICIS ? If not, list corrected information below.	X		
5. Has there been any new, different, or increased loading to the WWTF? If yes, describe changes. **About 12 houses a year are added onto the sewer system**	X		
6. Are influent flows increasing or decreasing? **About the same, slightly increasing**			
7. List any industries/non-domestic contributors. **None**			X

Permit verification comments: No additional comments

Inspection Records

	Yes	No	N/A
1. The following necessary information is current, complete, and reasonably available:			
a. Inspection notebooks for the WWTF with the following information:	X		
i. Date and time of the inspection	X		
Ii Name or initials of inspector	X		
iii. Facility's discharge status	X		
iv. Measured depth of the ponds or measured freeboard	X		
v. Identification of operational/maintenance problems	X		
vi. Recommendations to remedy problems	X		
vii. Steps taken to remedy problems	X		
b. Lab results	X		
c. pH testing	X		
d. Discharge Monitoring Reports (DMRs)	X		
e. Emergency discharge forms			X
f. Other:			X
g. Other:			X
2. Is information is maintained for the required 3-year period?	X		

Inspection records comments: Facility keeps very good inspection records

Sampling and Laboratory Information

	Yes	No	N/A
1. The following sampling and analysis requirements are met:			
a. Dates, times, locations of sampling are recorded.	X		
b. Initials of person performing sampling are recorded.	X		
c. The pH meter meets the following specifications:	X		
i. Capable of simultaneous two-point calibration	X		
ii. Reads to two decimal places	X		
iii. Temperature compensation adjustment	X		
d. pH meter is calibrated properly before use.	X		
e. pH calibration logbook is maintained with the following information:			
i. Date	X		
ii. Time	X		
iii. Initials of person performing calibration		X	
iv. 7 buffer reading	X		
v. 10 buffer reading	X		
vi. Temperature of buffer		X	
vii. Buffer expiration date		X	
f. Is the permittee performing any other tests?		X	
2. Are samples taken at sampling location specified by permit? **Weir at Outfall 001**	X		
3. Is the permittee using the method of sample collection required by the permit? Required method: **Grab** If not, explain:	X		
4. Sample collection procedures adequate and include:			
a. Sample refrigeration during compositing.			X
b. Proper preservation techniques.	X		
c. Containers in conformance with 40 CFR 136.3.	X		

5. Laboratory Information (from lab result sheets)

Name:	**State Health Lab**
Address:	**Pierre, SD**
Phone:	**(605) 773-3368**
Parameters tested:	**BOD, TSS, Fecal coliform, Total coliform, Ammonia, Nitrates, TRC (if needed)**
Dates, times, and initials of person performing analyses are recorded:	**Yes**

Sampling and laboratory comments: The person performing the pH calibration must record his or her initials in the pH calibration log. The temperature of the buffer solution, as well as the expiration date must also be recorded.

Flow Measurement:

Type of effluent flow measurement device: **90° V-notch weir**

		Yes	No	N/A
1.	Is flow measured at each outfall? Number of outfalls: **Outfall 001**	X		
2.	Are facility personnel calculating flows properly?	X		
3.	Are the proper flow tables used by facility personnel?	X		
4.	If flow measurement equipment adequate to handle expected ranges of flow rate?	X		

Weirs

		Yes	No	N/A
1.	Type and size of weirs(s): **90° V-notch weir**			
2.	Is the weir level?	X		
3.	Is the weir plate plumb and are top edges sharp and clean?	X		
4.	Is there free access for air below the nape of the weir?	X		
5.	Is the upstream channel of the weir straight for at least four times the depth of water level, and free from disturbing influences?	X		
6.	Is the weir under free flow conditions at all times? (Weir is not submerged.)			X
7.	Is the stilling basin of the weir of sufficient size and clear of debris?	X		
8.	Are head measurements properly made by facility personnel?	X		
9.	Is the weir free of leakage?			X

Comments on effluent flow measurement: The facility was not discharging at the time of the inspection, so it was unable to be determined whether the weir is under free flow conditions or free of leakage.

Self-Monitoring Reporting Information

	Yes	No	N/A
1. Is the facility required to obtain permission from the department before discharging?	X		
a. If yes, has the facility requested permission for discharges?	X		
b. If yes, has the facility received permission for discharges?	X		
2. Are DMRs being submitted to DENR as required by the permit?	X		
a. Are they submitted on time?		X	
Use the attached DMR Calculations Form to help answer 5 – 8 for most recent discharges.			
3. Is monitoring for required parameters performed at least as frequently as required by the permit?	X		
a. Are they sampling more frequently?			
4. Is the geometric mean properly calculated and recorded for fecal/total coliform data?	X		
5. Are weekly and monthly averages calculated properly and reported on the DMR?	X		
6. Are the maximum and minimum values of all data points reported properly?	X		
7. Is the number of exceedances column (NO. EX) completed properly?	X		
8. Is the permit signatory or authorized representative signing the DMRs?	X		
9. Are sample types reported properly?	X		
10. Does the facility do WET testing? If so, Acute or Chronic?	X		
		X	

Self-monitoring or DMR comments: Third Quarter 2011 DMRs were submitted late (received November 7, 2011); all other DMRs received on time since last off-site inspection September 2011. The city tests for fecal coliform year round. The December 2011 DMR was reviewed, since that was the latest discharge for the facility; no discrepancies were found.

IV. Facility Compliance Review

Effluent Violations

			Yes	No	N/A
1.	Has the facility discharged since the last inspection. If yes, list how many.	4	X		
2.	Is the facility in compliance with all effluent limits since the last inspection?			X	
a.	Effluent BOD5 violations. If yes, how many?			X	
b.	Effluent TSS violations. If yes, how many?			X	
c.	Effluent pH violations. If yes, how many?			X	
d.	Effluent ammonia violations. If yes, how many?	Four	X		
e.	Effluent fecal coliform violations. If yes, how many?			X	
f.	Effluent total coliform violations. If yes, how many?			X	
h.	Effluent temperature violations. If yes, how many?				X
i.	Effluent TRC violations. If yes, how many?			X	
j.	Other violations. If yes, list parameter and number of occurrences .				X

Effluent violations comments: The following violations have occurred since last offsite inspection (Sept 2010):

* Sept 2010 – 30-day average ammonia violation;
* Dec 2010 – 30-day average and daily maximum ammonia violations; and,
* May 2011 – 30-day average ammonia violation.

Compliance Schedule

		Yes	No	N/A
1.	Is the facility subject to a compliance schedule either in its permit or in an enforcement action? If yes, note date and type of enforcement action.		X	
2.	List milestones that remain in the schedule:			
3.	Has facility has missed milestone dates? If yes explain:			X
4.	Will the facility meet or do they plan to meet final compliance schedule date?			X

Compliance schedule comments: No additional comments

Facility Review

		Yes	No	N/A
1.	Are written emergency procedures established (in the event of a major storm event, a chemical release into the sewer system, a sewer main break, etc.)? **The city had Rural Water assist with developing an Emergency Response Plan and Vulnerability Assessment for the wastewater system.**	X		
2.	Can the facility be bypassed (internal, collection system, total)? Describe bypass procedures: **Aeration pond could be bypassed**	X		
3.	Does the facility accept hauled (septage) wastes? If yes, list amount and hauler contact information.		X	
4.	Does the facility accept industrial or nondomestic wastes? If yes, list amount and sources.			X
5.	Has the facility experienced problems with industrial or hauled wastes? If yes, explain:			X
6.	Are the non-domestic users regulated by sewer ordinance? If yes, attach relevant ordinance.			

Facility review comments: The ERP and Vulnerability Assessment documents are very thorough and well prepared.

V. Collection System

Piping and Manholes

Type of Collection System ☒ Separate ☐ Combined (San + Storm) ☐ Both ☐ Other

	Yes	No	N/A
1. Is a routine sewer-cleaning schedule maintained? If yes, what is the schedule and what type of equipment is used? **1/3 of the city is jetted each year, and trouble areas are jetted 1-2 times a year with city's jetter. A-tech cleans out the lift stations and occasionally will jet and vacuum some lines if needed.**	X		
2. Have sewer backups occurred into basements during high flows since the last inspection? If yes, explain: **During the 2011 flooding when the Big Sioux River was very high a few basement backups occurred**	X		

If overflows occurred at this facility, the information from question 3 should be entered in the SSO database.

	Yes	No	N/A
3. Have manholes overflowed during high flows? If yes, give dates, volumes, receiving waters, etc.		X	
4. Was DENR notified of any overflows or unauthorized releases? If no, why not?			X
5. Were samples taken of the overflow/unauthorized release? If yes, list the sample results in the comment section below. If no, explain.			X
6. Have bypasses occurred from the collection system (including lift stations) since the last inspection? If yes, explain (date, volumes, receiving water, etc.)		X	
7. Does the community have a sump pump ordinance? If yes, how is it enforced? **Notices published in the newspaper and water bill. The city is replacing all water meters this summer and will include a visual sump pump check.**	X		
8. Has testing for inflow/infiltration sources been conducted since the last inspection? If yes, describe testing. **Televising lines to find I/I trouble spots**	X		
9. Have sources of inflow/infiltration been identified?	X		
10. Have measures been taken to correct inflow/infiltration problems?	X		
11. Has the collection system been upgraded since the last inspection? If yes, describe: **Facility installed a new main lift station in 2009**	X		

Piping and manhole comments: The city seems to be very proactive in addressing I/I issues. The city tries to televise a portion of the sewer lines each year to identify I/I areas. If an area has significant I/I issues, that street repair project is moved up in priority to fix the sewer lines quicker.

Lift Stations

Item	Comments
Number of lift stations	**One main lift station and 5 area lift stations**
Type of lift stations (wetwell/drywell or submersible)	**Main lift is a wetwell, others are submersible**
List areas served	**Main – serves the entire town** **2nd and Mill Ave – serves two houses (small lift)** **Wyland Addition – serves two blocks, 2nd largest lift station** **Dakota Avenue – serves two houses (small lift)** **Newcome – serves two appartments and three houses** **City park – seasonal lift only used when the pool is in use**
Inspection frequency	**Main lift – Daily; all others visually daily, record hour meters weekly**
Condition of lift stations	**Good**
Alternative power source available for each lift station	**Main lift – backup generator onsite** **Wyland Addition, Dakota Avenue; Newome and City park lift stations have hookup capabilities to the portable generator the city has. The two small ones do not have portable generator hookups.**
Wetwell baskets (quantity)	**None**
Cleaning schedule	**NA**
Bar screens (quantity)	**None**
Cleaning schedule	**NA**
Screening disposal method	**NA**
Dehumidifier working properly (if applicable)	**NA**
Ventilation system working properly (if applicable)	**NA**
Type of alarm system	**Visual; main lift station alarm calls Midwest Alarm, who in turn has a calling tree list of the operators**
Alarm system working properly	**Yes**
Lift station have hour meters	**Yes, two smallest ones do not, but power meter readings are recorded for those two**
Hour meters are logged in an inspection notebook	**Yes**
Pump calibration schedule	**None for the two smallest; larger ones as-needed**
Are inspections being documented?	**Yes**

Comments concerning collection system and lift stations: **The new main lift station began operations November 2009 and includes a wetwell, control house, three variable speed pumps (were running about 800 gpm at the time of the inspection, which is at 85%), a hoist to remove the pumps, onsite backup generator, and a flow meter to record the flow rate entering the aeration basin. The main lift was the only lift station inspected at the time of the inspection; all other lift stations were drive-by inspections.**

VI. Treatment Processes

Stabilization Ponds

Item	Comments
Inspection frequency	**Daily**
Weeds and/or trees growing on the dikes	**No**
Vegetation growing in the ponds	**No**
Pond dikes protected from erosion with riprap	**Yes**
Dike structure failure (sloughing and/or sagging)	**No**
Evidence of erosion	**No**
Pond seepage surfacing reported	**No**
Sludge: Past disposal practices	**None recently (land applied aeration pond sludge 10+ years ago)**
Future Plans	**None**
Observation of sludge accumulation	**No**
Fencing in good condition	**Yes**
All access gates are kept locked	**Yes**
Signs legible and properly located	**Yes**
Facility accessible in all weather conditions	**Yes**
Evidence of burrowing animals	**No**
Evidence of grazing animals	**No**
Odor problem (except seasonal turnover)	**No**
Inter-pond piping valves are working and used	**Yes**
Depth indicator(s)	**Yes, concrete slabs**
Discharge structure (valve control, overflow, etc.)	**Valve control**
Which ponds are drawn down during a discharge?	**East two**
Cells operated in series or parallel	**Series**
Are chemicals added for algae, insects, etc?	**No**

Cell information (stabilization pond)

	Cell #1	Cell #2	Cell #3	Cell #4
Maximum operation depth	**11'**	**11'**	**11'**	**6'**
Current operating depth	**~9'**	**~6'**	**~4'**	**~1'**
Minimum operating depth	**2'**	**2'**	**2'**	**2'**
Surface area at maximum depth	**9.96**	**4.67**	**3.32**	**0.43**

Comments concerning stabilization ponds: **Pond #4 used to be the old chlorine retention pond and does not have rip rap protecting it. Pond #4 is not used, other than in equalization to Pond #3; the operator refers to Pond #3 and Pond #4 as the "L-shaped pond".**

Aeration Ponds

Item	Comments
Inspection frequency	**Daily**
Weeds and/or trees growing on the dikes	**No**
Fencing in good condition	**Yes**
All access gates are kept locked	**Yes**
Odor problems noticed	**No**
Influent flow measurement (weir, flume, etc.)	**Flow meter at main lift station**
Erosion noted	**No**
Seepage surfacing reported	**No**
Evidence of burrowing animals	**No**
Bypass provisions to other treatment processes	**Yes, could bypass to stabilization pond #1**
Alternate power source for aeration system	**No**
Type of aerators (mechanical, coarse or fine bubble, etc.)	**Coarse bubble diffusion**
No. of aerators/cell	**36**
Aerator rating (cu.ft./min)	**1060 cfm (from the O&M manual)**
Spare aerator parts kept in stock	**Yes**
Detention time of aeration system	**Summer – 11.5 days; Winter – 15.1 days**
Aeration system maintained and cleaned	**Yes**
Method of bottom scour prevention	**Yes, riprap around inlet pipe**

Cell information (Aeration pond)

	Cell #1				
Maximum operation depth	**11'**				
Current operating depth	**~11'**				
Minimum operating depth	**10'**				
Surface area at maximum depth	**1.1 acre**				

Comments concerning aeration ponds: **No additional comments**

Land Application Systems

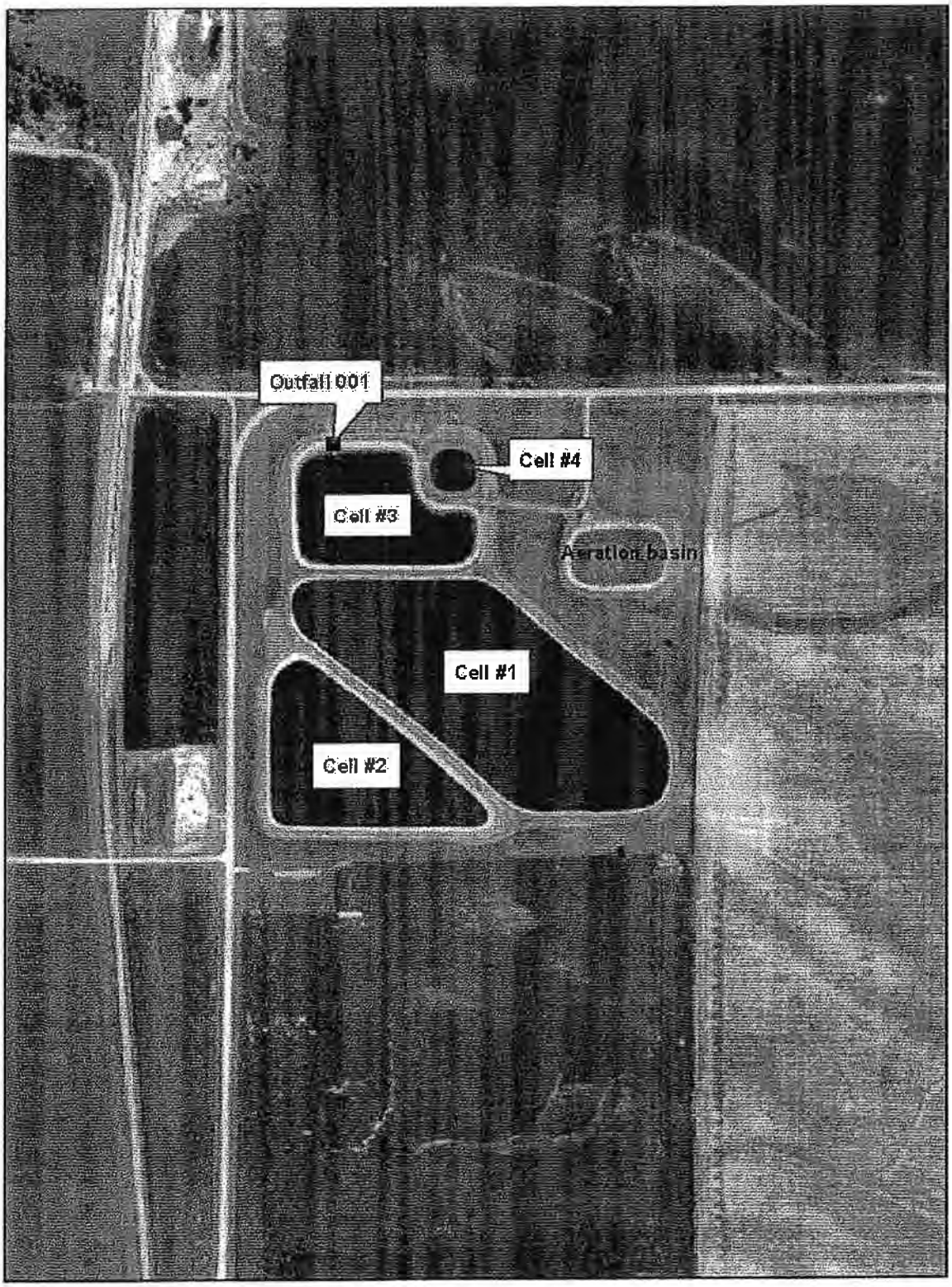
Item	Comments
Inspection frequency (pumps and distribution)	**The facility has never land applied. See below.**
Type of pump system	
Number of pumps & ratings	
Type of booster pump(s)	
Number of booster pumps & ratings	
Type of land application system (center pivots, traveling guns, flood, etc.)	
Number of center pivots, traveling guns, etc.	
Duration of application	
Application rate (maximum of ¼ inch/hour and 2 inches/week)	
Area available for land application (acres)	
Area presently being used for land application (acres)	
Is there an irrigation agreement and are they land applying in accordance with the agreement?	
Best management practices in use	
Is there evidence or reports of runoff	
Land application plan identifies land applied areas (Is there a plan?)	
Maintenance schedule	
Are service records kept?	
Operation & maintenance manual	
Were soil/water compatibility tests conducted? When? What were the results?	
Is there a screen prior to the pumps?	
How are the screenings disposed of?	
Is the land application land being used for manure application, biosolids application, or is a commercial fertilizer being used in addition to treated wastewater?	

Comments concerning land application systems: **The facility has the option in the permit to land apply wastewater at the municipal golf course (Outfall 002); however, the city has never land applied and the golf course does not have any future plans to utilize the land application option at this time.**

ATTACHMENT 1

Aerial Photograph of Dell Rapids WWTF

Dell Rapids WWTF



0 0.1 0.2 0.4 Miles

N
W E
S

Surface Water Discharge Compliance Inspection Report

Section A: National Data System Coding

Transaction Code		Permit No.	mm/dd/yy	Insp. Type	Inspector	Fac. Type
N	5	SD0022101	04/26/12	C	S	1

Remarks:

Inspection Work Days	Facility Evaluation Rating	BI	QA	Reserved	Reserved
0.75	2	N	N		

Section B: Facility Data

Name and Location of Facility (*For Industrial Users include POTW name and SWD permit number*)	Entry Time:	Permit Eff. Date:
City of Dell Rapids WWTF	9:00 AM	Jan 1, 2007
Name of On-Site Representative(s)/ Title/ Phone and Fax Number Larry Schildhauer / PWD / (605) 321-9012	**Exit Time:** 11:00 AM	**Permit Exp. Date:** Dec 31, 2011
Name and Address of Responsible Official/Title/Phone and Fax Number Scott Fiegen / Mayor / (605) 428-3595 **Contacted?** No	**Other Facility Data**	

Section C: Areas Evaluated During Inspection
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

S	Permit	S	Flow Measurement	S	O & M	S	CSO/SSO
M	Records/Reports	S	Self-Monitoring	N	Sludge Disposal	N	PP
S	Facility Site Review	N	Compliance Schedule	N	Industrial Users	N	Multimedia
M	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other

Section D: Summary of Findings/Comments (*Attach additional sheets if necessary*)

1. Take steps to reduce ammonia effluent violations
2. Submit DMRs in a timely manner
3. Report sewer backups to DENR
4. Include all required information on the pH calibration log
5. Recommend additional training for personnel

Name of Inspector(s)	Signature	Affiliation / Phone	Date
Jill M. Riedel, E.I.T.	Jill M Riedel	*SDDENR / (605) 362-3543*	*05-02-2012*

Name of Reviewer	Signature	Affiliation / Phone	Date
Kelli D. Buscher, P.E.	Kelli Buscher	*SDDENR / (605) 773-3351*	6/6/2012

INSTRUCTIONS FOR SURFACE WATER DISCHARGE COMPLIANCE INSPECTION REPORT

SECTION A: NATIONAL DATA SYSTEM CODING

Transaction Code: Use N, C or D for New, Change or Delete. All Inspections will be New (N) unless there is an error in the data entered.

Permit No.: SWD Permit Number.

Inspection Date: Use month/day/year format.

Inspection Type: Uses the following codes to describe the type of inspection:

A-Performance Audit
B-Biomonitoring
C-Compliance Evaluation
D-Diagnostic
E-Corps of Engrs Inspection
F-Pretreatment Follow-up
G-Pretreatment Audit
I-Industrial User (IU)
L-Enforcement Case Support
M-Multimedia
P-Pretreatment Compliance Inspection
R-Reconnaissance Inspection
S-Compliance Sampling
U-IU Inspection with Pretreatment Audit
X-Toxics Inspection
Z-Sludge
2 IU Sampling Inspection
3 IU Non-Sampling Insp
4 IU Toxics Inspection
5 IU Sampling Insp w/Prt
6 IU Non-Samp Insp w/Prt
7 IU Toxics w/Prt

Inspector Code: Use following codes to describe the lead agency:

C-Contractor or Other (specify)
E-Corps of Engineers
J-Joint EPA/State - EPA Lead
N-NEIC Inspectors
R-EPA Regional inspector
S-State Inspector
T-Joint State/EPA - State Lead

Facility Type: Use following codes to describe the facility:

1-Municipal - Publicly Owned Treatment Works (POTW) with SIC code 4952.
2-Industrial - Other than municipal, agricultural and Federal facilities.
3-Agricultural - Facilities with SIC 0111 to 0971.
4-Federal - Facilities identified as Federal by the EPA Regional Office.

Remarks: Columns for remarks at discretion of the Inspector.

Inspection Work Days: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection and submit a QA reviewed report of findings. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

Facility Evaluation Rating: Evaluate the quality of the facility self monitoring program using scale of 1 to 5, with a 5 being a very reliable program, a 3 being satisfactory and a 1 being a very unreliable program.

Biomonitoring Information: Enter D for static testing; F for flow through testing; or N for no biomonitoring.

Quality Assurance Data Inspection: Enter Q if inspection was a follow-up on QA sample results. Enter N otherwise.

SECTION B: FACILITY DATA

This section is self-explanatory, except for *Other Facility Data*, which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record).

SECTION C: AREAS EVALUATED DURING INSPECTION

Indicate findings (S, M, U or N) in the appropriate line. Use section D and additional sheets as need to explain findings in a brief narrative when appropriate. The heading marked *Multimedia* may indicate medias such as CAA, RCRA, and TSCA. The heading marked "Other" may be used to note any additional concerns, such as SPCC, BMPs, and concerns that are not covered elsewhere.

SECTION D: SUMMARY OF FINDINGS/COMMENTS

Briefly summarize the inspection findings along with referencing any attachments such as checklists from NPDES inspection manuals, pretreatment guidance documents and monitoring results.

Appendix C
Comprehensive Plan 2028

DELL RAPIDS

Comprehensive Plan
2008 - 2028

Prepared by the South Eastern Council of Governments at the direction of the Planning Commission and City Council of Dell Rapids, South Dakota

ACKNOWLEDGEMENTS

This Comprehensive Plan is a compilation of effort by many people, organizations and government entities. This document expresses the great civic pride that exists in the City of Dell Rapids. Through the preparation and adoption of this document, the governing officials of Dell Rapids have expressed their desire for orderly and efficient growth and development in the community and surrounding area.

City Council

Mayor: Dale Gillogly

Council Members: Doug Grovenburg, Mark Downs, Carrie Testerman, Todd Wiebenga, John Paul, Kris Langer, David Sommerfeld, Dick Woolf

City Administrator: Jeff Traill

Finance Officer: Vicky Haskell

Planning Commission

Chairman: Bob Lamberty

Board Members: Bob Davis, Dale Dunn, Darell Donelan, Chris Mullaney, Roger Dearduff

The South Eastern Council of Governments prepared this document under the direction of the Dell Rapids Planning Commission and Dell Rapids City Council.

RESOLUTION NO. _____

A RESOLUTION ADOPTING A COMPREHENSIVE PLAN FOR CITY OF DELL RAPIDS, AS PROVIDED FOR IN SDCL 11-6.

Whereas, Chapter 11-6-18 of South Dakota Codified Law has empowered the Planning Commission and City Council of Dell Rapids to prepare a Comprehensive Plan for the development of the City and the surrounding area; and

Whereas, the Dell Rapids Planning Commission has developed a Comprehensive Plan for the years 2008 – 2028 and has held the required Public Hearing; and

Whereas, the Dell Rapids City Council has received the recommendation of the Planning Commission and has held the required Public Hearing; and

Whereas, the adoption of the Comprehensive Plan would enhance the responsible development of Dell Rapids and the surrounding area.

Now therefore, be it resolved by the Dell Rapids City Council, that the Comprehensive Plan for the City of Dell Rapids for the years 2008 through 2028 be hereby adopted and effective upon 20 days after publication of this resolution.

Adopted this _____ day of _____, 2008.

_____
Signed: Dale Gillogly
Mayor, City of Dell Rapids

ATTEST:

_____
Vicky Haskell
Finance Officer, City of Dell Rapids

Publication Date: _____

Effective Date: _____

I. INTRODUCTION

A. PURPOSE, AUTHORIZATION AND ADOPTION

1. PURPOSE OF THE COMPREHENSIVE PLAN

There are two primary purposes of this document:

(1) To address the planning requirements of state law while also providing a sound and logical basis for city growth management strategies; and

(2) To provide some predictability about the potential land uses and timing of development so that both public and private sectors can make informed decisions in the area of real estate and capital investments.

2. AUTHORIZATION UNDER STATE LAW

Under 11-6-14 of South Dakota Codified Laws, the planning commission of a municipality is directed to *"propose a plan for the physical development of the municipality...[to] include the general location, character, layout and extent of community centers and neighborhood units...".*

3. DEVELOPMENT AND ADOPTION

The Dell Rapids City Council has adopted this document in accordance with state law. In developing this Comprehensive Plan, the Dell Rapids Planning Commission has used background research, detailed inventories and assessments, and discussion sessions at Planning Commission meetings and City Council public hearings. The land uses identified in this document are not set in stone. The Comprehensive Plan is a general guideline, and neither endorses nor prohibits development of a certain kind in a certain area. It is intended to guide the City in its implementation of zoning regulations, subdivision regulations, capital improvements plans and other related policies.

4. AREA OF PLANNING JURISDICTION

The City of Dell Rapids shall, under South Dakota statutes, have the authority to control development within the corporate limits of Dell Rapids. A joint jurisdictional boundary with Minnehaha County has been developed to deal with an urban growth area and growth management area.

B. INTERGOVERNMENTAL CONSIDERATIONS

A comprehensive plan affects not only those living in the study area, but also (to some extent) those living and working throughout the Dell Rapids area. As a result, the Planning Commission provided a draft of this plan to, and has requested input from the Dell Rapids School District, the Minnehaha County Planning Department, and the Dell Rapids Economic Development Corporation.

C. APPROPRIATE USE OF THE COMPREHENSIVE PLAN

South Dakota laws require that zoning districts must be in accordance with the Comprehensive Plan. It is the intent of this document to show the most appropriate use of land within the study area, based on the potential for growth and development of the community.

II. DEMOGRAPHIC CONDITIONS

A. GENERAL DEMOGRAPHY

Table 1. Population History *(Source: U.S. Census Bureau)*

	Population	% Increase/Decrease
1960	1,863	N/A
1970	1,991	+ 6.87%
1980	2,389	+ 19.99%
1990	2,484	+ 3.98%
2000	2,980	+ 19.97%

Table 2. Current Demographic Statistics *(Source: U.S. Census Bureau)*

	Dell Rapids	Minnehaha County	South Dakota
1990 Pop	2,484	123,809	696,004
2000 Pop	2,980	148,281	754,844
1990 – 2000 % Change	+ 19.97%	+ 19.76%	+ 8.45%
2000 Median Age	36.0	33.5	35.6
Median Household Income in 1999 (dollars)	$42,572	$42,566	$35,282

From 1990 to 2000 the City continued to grow by 17.6% in the 0-19 age group and by 36% in the 20-54 age group. There was no decline in population in any of the age groups. United States Census 2000 data indicates that 30% of Dell Rapids' residents are 19 or younger. Approximately 44% of the community is between the ages of 20 and 54, illustrating the claim that Dell Rapids is a family-oriented community.

Table 3. Population by Age *(Source: U.S. Census Bureau)*

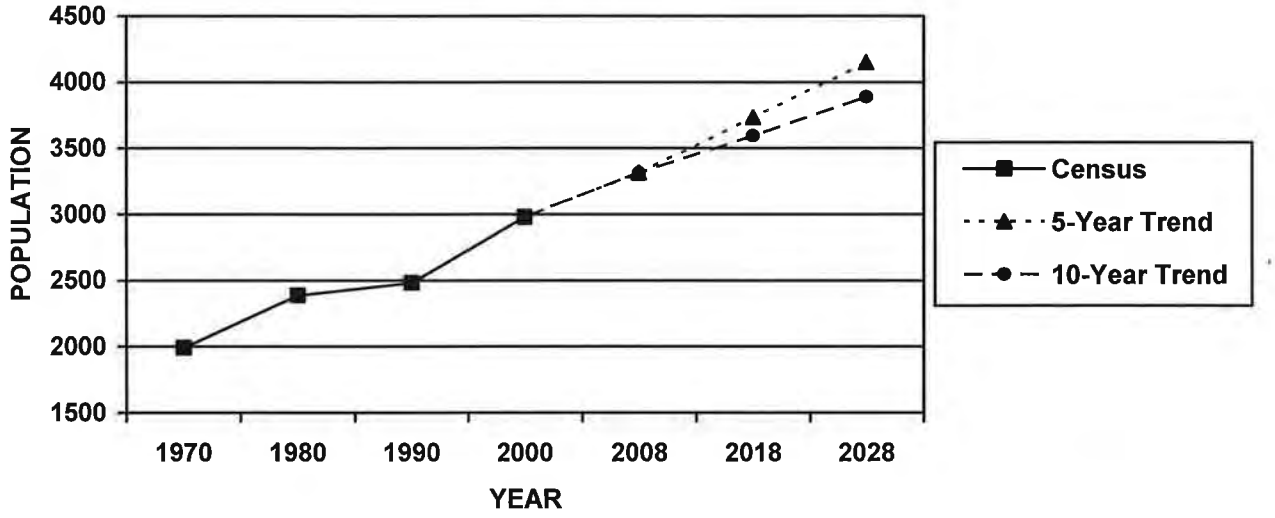
	0-19	20-54	55-74	75 & Over	Total
1990	770	972	404	338	2,484
2000	906	1,322	405	347	2,980

B. POPULATION PROJECTIONS

Based upon current trends, a population projection through the study period indicates that the City of Dell Rapids will have a population between **3,885 and 4,149 by the year 2028**. The following chart illustrates the Dell Rapids population projections utilizing a 5-year trend and a 10-year trend. For purposes of land-use planning, the upper end of the population trend was utilized to ensure adequate land was reserved and planned for future development.

Table 4. Population Projections City of Dell Rapids

	1970	1980	1990	2000	**2008**	**2018**	**2028**
5-Year Trend	1,991	2,389	2,484	2,980	**3,314**	**3,731**	**4,149**
10-Year Trend	1,991	2,389	2,484	2,980	**3,314**	**3,593**	**3,885**



III. ENVIRONMENTAL CONSTRAINTS

A. PHYSICAL GEOGRAPHY

Dell Rapids is located in southeastern portion of South Dakota. The City is along the Big Sioux River and Rocky Run tributary. The landscape is primarily flat. The elevation drops from 1,561 feet in the north part of the City to 1,490 feet in south.

B. FLOOD HAZARDS

The Big Sioux River routinely experiences severe spring flooding, and in recent years the flooding has occasionally lasted into the early summer. A portion of Dell Rapids lies within the Big Sioux River and Rocky Run floodplain. According to the Federal Emergency Management Agency (FEMA) Dell Rapids is still classified as having special flood hazard areas. The floodplains of the Dell Rapids area are shown on **Map 1.**

C. DRAINAGE AND WETLANDS

Some small wetlands and potholes are found in the city's growth areas. Wetlands and water bodies are designated from base maps developed through the National Wetlands Inventory and other data sources. These natural resources provide a number of functions that are important to the health and welfare of the community. They provide storage for storm water, help to control flooding, provide wildlife habitat, improve water quality, and they provide recreational opportunities.

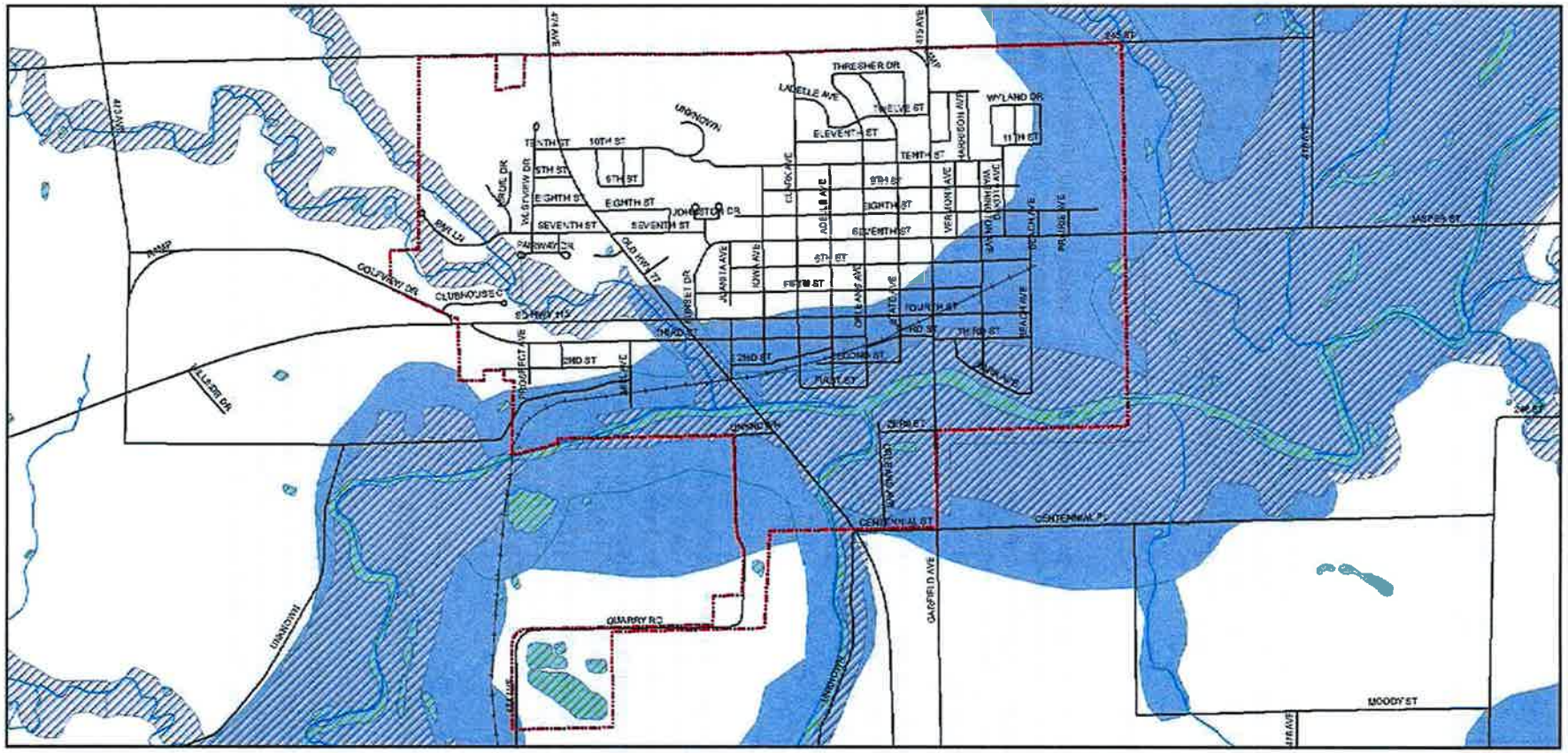
Major surface drainage features found within the planning area is the Big Sioux River and its tributaries, all part of the Missouri River System. The Big Sioux River flows on the southern portion of Dell Rapids. Tributary to the Big Sioux with the area is Rocky Run. The wetlands of the Dell Rapids area are shown on **Map 1**.

D. SOILS

While the soils in the Dell Rapids planning area are excellent for agricultural purposes, their engineering properties present some limitations for urban development. Soil types found in some areas have severe limitations for various aspects of development including roads and streets, and dwellings with basements. These limitations are largely due to unfavorable shrink-swell characteristics, poor bearing capacity when wet, susceptibility to frost action, and/or a seasonally high water table. While these limitations do not rule out development, they do require compensating construction techniques and soil modification. Although soils with a specific engineering limitation may be more prevalent in some areas of the planning jurisdiction than others, soil types with a variety of limitations are found generally across the area. The severe soil development limitations of the Dell Rapids area are shown on **Map 2**.

E. ADDITIONAL ENVIRONMENTAL CONSTRAINTS

Shallow aquifers and streams are at risk of contamination by a variety of sources. Because of the risk of contamination, Minnehaha County enforces measures to protect these areas through the Water Source Protection Overlay District. The overlay district prohibits uses that pose a high risk of contamination to groundwater resources and regulates other potentially damaging uses so that adverse environmental impacts are minimized. The Water Source Protection Overlay District of Minnehaha County is shown on **Map 1.**



Legend

- Wetlands
- Zone A Floodplain
- Aquifer Protection Area
- Roads
- Rail
- City Limits

Map 1

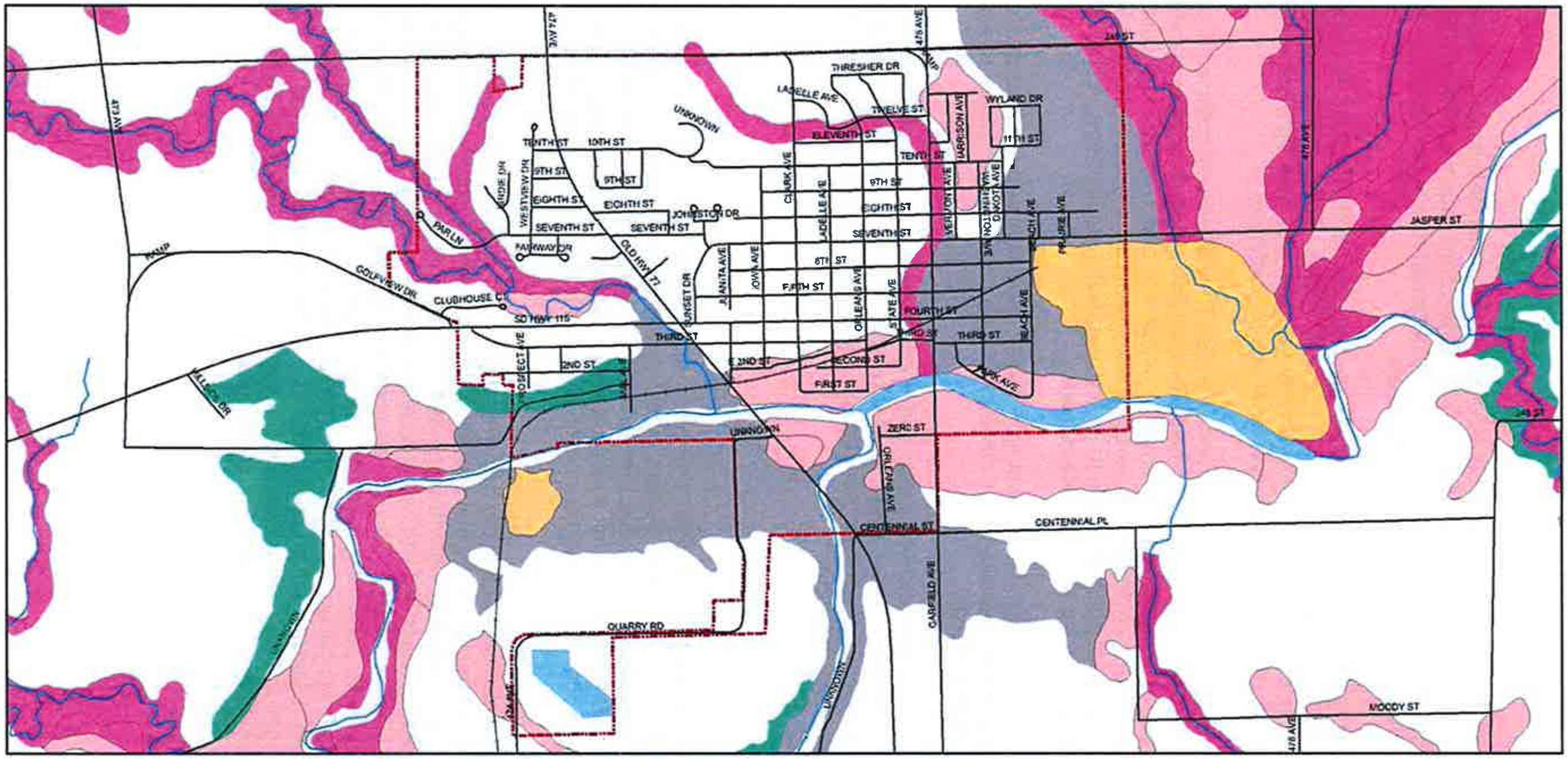
ENVIRONMENTAL CONSTRAINTS

City of Dell Rapids

0 0.1 0.2 0.4 Miles

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for on site investigation.

This map was compiled by South Eastern Council of Governments



Map 2

SOIL CONSTRAINTS

City of Dell Rapids

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.

This map was compiled by South Eastern Council of Governments

IV. INFRASTRUCTURE

A. TRANSPORTATION

Street and highway improvements are a critical planning consideration because of the interactive relationship between transportation and land use. Location choices for many land uses are frequently made on the basis of access to major streets and highways. Without consideration for adequate capacity or maintenance, the transportation system cannot adequately accommodate development.

Arterial streets are designed to carry a large volume of traffic at higher speeds. Within the city, the function of arterials is to facilitate the movement of goods and people with few obstructions. These streets are generally four lanes wide with no on-street parking, are adjacent to mainly commercial uses, and have signalized intersections with dedicated turn lanes. Ordinarily, arterial streets are spaced at one-mile intervals.

Collector streets are designed to provide connectivity between arterials. They allow local traffic an access onto the arterial system. Collector streets are normally spaced one-half mile apart and include two lanes of traffic with turn lanes at major intersections, limited on-street parking, and may be adjacent to either residential or commercial uses. Local streets provide access from low-density residential developments to collector or arterial streets. Because their function is based on development patterns, there are no spacing requirements. Local streets operate at low speeds, with on-street parking and few traffic signals.

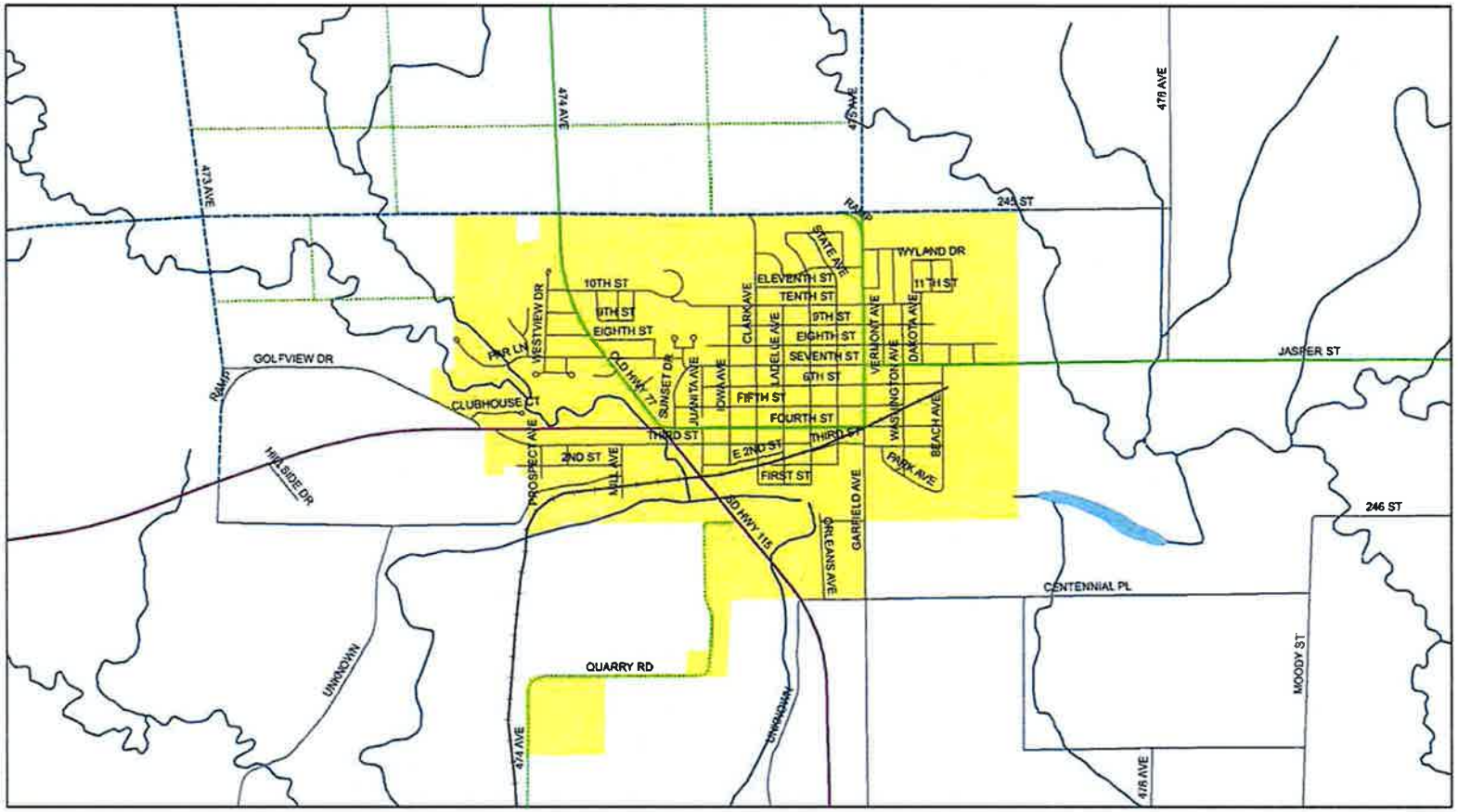
Engineering Design Standards include provisions for street right-of-way, pavement width, and access controls. Yet even these standards must be applied sensibly within different settings. A number of arterial streets pass through established residential neighborhoods.

A Major Street Plan includes a list of current and future road and street improvement projects for the transportation needs of the City of Dell Rapids. The Major Street Plan showing projected future arterial and collector streets, has been developed as a part of the Comprehensive Plan (**see Map 3**). Major transportation improvements are listed in the Capital Improvements Summary (Page 26).

B. WATER FACILITIES

The City water supply is obtained from the Minnehaha Community Water System and delivered to the City by means of a dedicated main line from the rural water system water treatment plant located to the south and west of the City. The supply from the rural water system is delivered to a 157,000 gallon ground storage reservoir located near the airport to the south of the City. The reservoir was designed to allow it to be expanded to 250,000 gallons by the addition of another side wall ring. The supply connection and related facilities were constructed as part of a 1986 project.

A below grade concrete vault is located adjacent to the reservoir and houses water metering and high service pumping facilities. Water delivered from the rural water system is metered at this location and two high service pumps, one 400 gpm and one 550 gpm deliver water from ground storage. The main from the pumping station into the distribution system is made of Class 200 PVC and capable of delivering up to 800 gpm into the City without exceeding the pressure class of the pipe. The City also operates two welded steel pedestal style tanks that are both located in the north center portion of the community. A 150,000 gallon welded steel pedestal style elevated tank is located in the north central portion of the community at the intersection of 10th Street and Orleans Avenue and a 500,000 gallon tank is located at the intersection of Clark Avenue and 15th Street. The tank level controls the starting and stopping of the high service pump in the pumping station. While the pump is off, the tank provides pressurized water service throughout the community by gravity.



Map 3

MAJOR STREET PLAN

City of Dell Rapids

V. SCHOOLS, PARKS AND OPEN SPACES

A. SCHOOL FACILITIES

The Dell Rapids School District currently maintains two facilities and three schools (K-4, 5-8 and 9-12) all located within the city limits of Dell Rapids. The K-4 building houses 322 students, the 5-8 building houses 300 students and the 9-12 building houses 312 students. The district lies within Minnehaha and Moody Counties and has approximately 38% of the students residing outside the city limits.
(Source: Superintendent Tom Ludens)

B. PARKS AND OPEN SPACES

Neighborhood parks are generally between five and ten acres in size. The effective service area of neighborhood parks is one mile, depending on location, facilities, and accessibility. School/park sites also serve as neighborhood parks and include playground equipment in addition to play fields, parking lots, and multi use paved areas for court games.

Community parks, because of their larger size, provide a much wider range of activities and facilities than neighborhood parks. The land area requirements generally range from 20 to 40 acres. Specialized facilities such as swimming pools, picnic areas, and athletic complexes can be accommodated in community parks. Community parks that should be provided include areas for passive uses, nature conservation, pools and aquatic centers, and athletic fields. Each of these four types of uses might include other uses such as neighborhood playground space, but generally larger parks will focus on one major type of activity.

Conservation and nature areas are specialized locations that preserve wildlife habitat, woodlands, and wetlands through open space development. Most commonly developed along the stream corridors and natural drainage ways are linear parts or greenways which provide variety of recreational opportunities to adjacent neighborhoods. These activities easily accommodate the development of a bike trail system.

The parks and open spaces on the Future Land Use Map identify existing park facilities and proposed new facilities within the projected growth areas. A list of the new or expanded facilities is listed in the Capital Improvements Plan Summary on page 26. These facilities will bring nearly all residential development within the service area of both neighborhood parks and community parks. The specific improvements provided within the park facility should be tailored to meet the needs of the nearby population that it will primarily serve. Where feasible, proposed parks sites are integrated with future elementary school sites to permit joint use of facilities. In addition, potential combinations of detention pond sites and neighborhood parks should be reviewed wherever feasible to allow more efficient land utilization and consolidation of maintenance costs.

If new parks are to be provided at reasonable cost and in proper locations, it is essential that parkland acquisition take place prior to residential development. Integration of Park and school sites will likewise be feasible only if land acquisition occurs well ahead of residential development.

VI. GROWTH AREA ANALYSIS

The costs of extending water and sewer services are the primary considerations in designating future growth. However, other factors must also be considered which includes capacity of the transportation system, environmental suitability, and compatible land uses. The following analysis is intended to provide the City of Dell Rapids and Minnehaha County with a guide to land use decisions and direct implementation through subdivision and zoning regulations. **Map 5** illustrates all growth areas by the number indicated.

Area #1
Water and sewer is readily available by an extension from the existing systems. Some residential and institutional development is already occurring in this area. Future land use in this area would be residential in the north and south, a strip of institutional in the middle and a small amount of commercial in the northwest corner. Additional study is needed for adequate storm water drainage. Some existing development may create an obstacle for future development.

Area #2
Water and sewer is readily available by an extension from the existing systems. Deep sewer installations may be hindered by saturated, unstable soils underlying portions of this area. The land use in this area would be predominately residential. Development should only be allowed in the flood plain based on the flood study of Rocky Run and tributary. Additional study is needed for adequate storm water drainage. Before development reaches the section mile road to the north (245th Street), the City may want to consider improving the road to an arterial within city standards. The road should be improved from old Highway 77 to 473rd Avenue.

Area #3
Water and sewer is available by an extension from the existing systems. A storm water detention area would be required on the west side of Clarke Avenue due to limited capacity and existing potential for flooding along the downstream drainage system. This would control runoff from development in this basin west of Clarke Avenue. Additional study is needed before development should occur in the floodplain areas. The land use in this area would be residential with higher density residential in the southern portion of the area. Before development reaches the section line road to the north (245th Street), it should be at arterial status.

Area #4
Water and sewer would require an extension from the future systems within Area #3. Land use in this area would include residential in the north, institutional in the southwest and recreation in the southeast. Old Highway 77 and the improvement of 245th Street to an arterial status will provide proper transportation capacity. Major commercial nodes, with a multi-family buffer, are proposed north of 245th Street.

Area #5
Water and sewer would require an extension from the future systems within Area #2. Additional study is needed before development should occur in the floodplain areas. Old Highway 77 and the improvement of 245th Street and 473rd Avenue to arterial status will provide proper transportation capacity. One existing farm is located in the growth area. Major commercial nodes, with a multi-family buffer, are proposed north of 245th Street.

Area #6
Water and sewer would require an extension from the future systems within Area #2. Sewer will require a lift station to lift into planned system in Area #2. Saturated, unstable soils underlying portions of this area, similar to Area #2, may hinder deep sewer installations. The flood plain of Rocky Run and tributary may limit development. Flood potential should be based on a flood study of Rocky Run and tributary. The improvement of 473rd Avenue will provide sufficient transportation capacity to this area.

Area #7
Water and sewer would require an extension from the existing systems. Special consideration for utility infrastructure may be necessary due to the depth to rock in the area. A sanitary sewer lift station may be required. The improvement of Quarry Road will provide sufficient transportation capacity to this area.

VII. LAND USE PLAN

A. EVALUATION OF URBAN LAND USE IN DELL RAPIDS

To simplify preparation of this plan, land uses have been grouped into seven categories for Dell Rapids:

(1) Industrial includes light manufacturing, warehouses and other similar uses.

(2) Commercial includes retail businesses, offices, etc.

(3) Single Family Residential includes single-family, residential, duplexes, and manufactured housing.

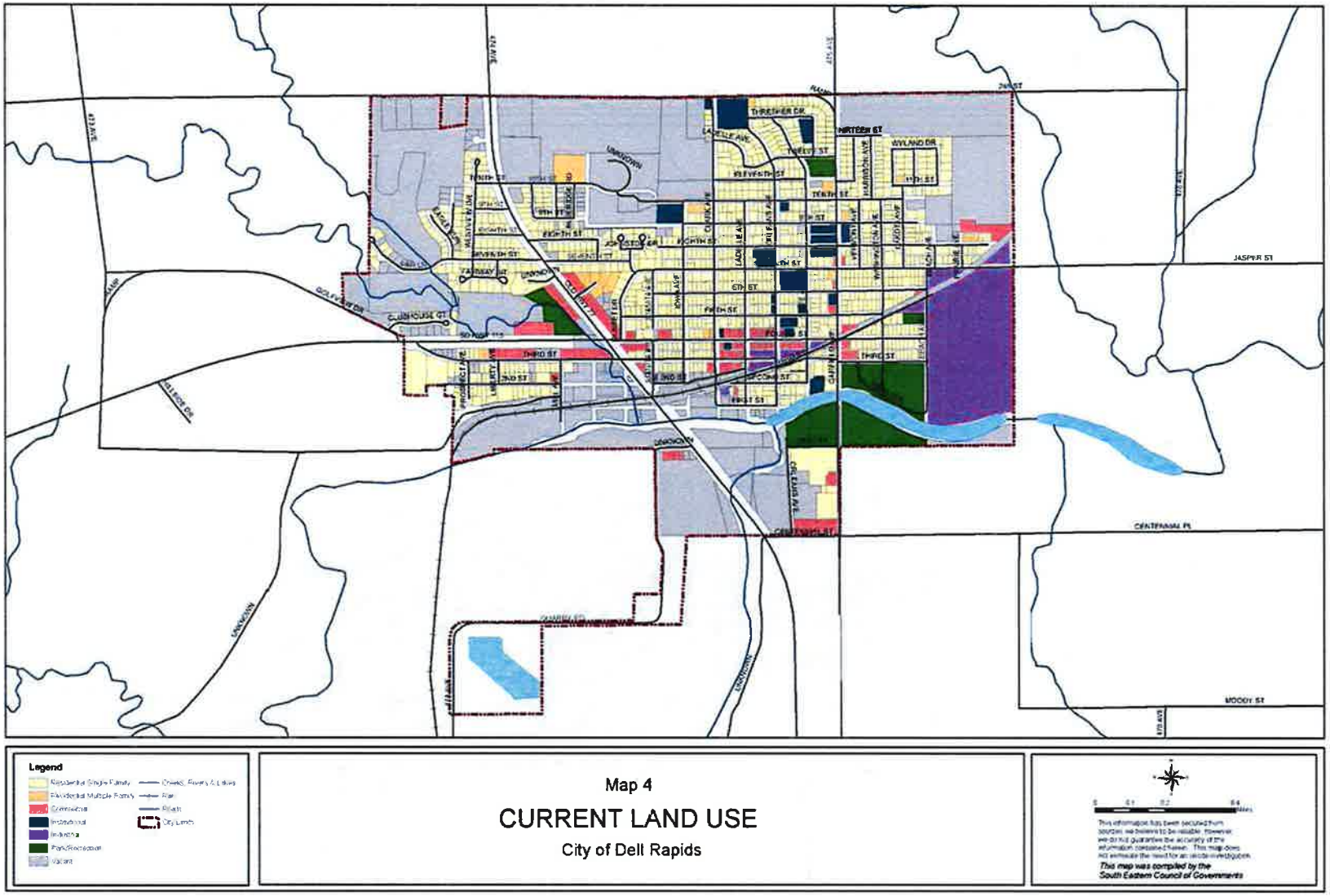
(4) Multi Family Residential includes all apartments.

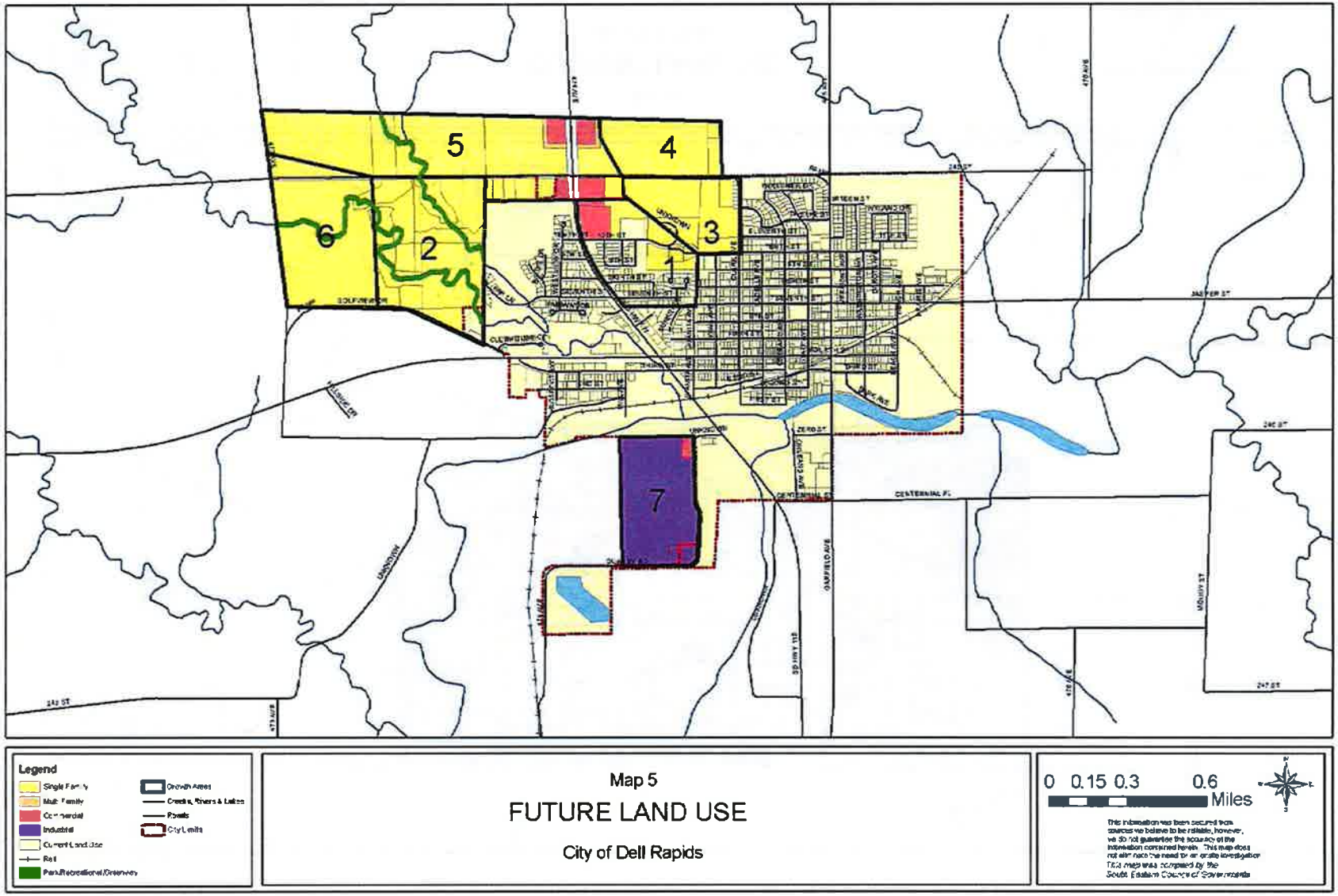
(5) Institutional & Governmental includes schools, churches, government offices and similar uses.

(6) Parks & Recreation includes parks and athletic fields. Also included are areas that should be protected from development to facilitate movement of flood water and runoff. Some types of development may be appropriate for such areas, as long as the development does not dramatically increase the incidence or severity of flood or drainage problems.

(7) Vacant includes land not yet developed for one of the other six uses. Also included are areas that provide farming and agriculturally related uses.

A physical land use inventory was prepared by SECOG in 2006. Maps for the current and future land uses **(Maps 4 and 5)** in Dell Rapids and the planning area are included. Future land uses were determined by the Dell Rapids Planning Commission and SECOG, based on topographic features, compatibility of future and current land uses and existing infrastructure.


Legend
Residential Single Family
Residential Multiple Family
Commercial
Industrial
Institutional
Park/Recreation
Vacant
Creeks, Rivers & Lakes
River
Roads
City Limits
Map 4
CURRENT LAND USE
City of Dell Rapids
This map was compiled by the
South Eastern Council of Governments



Map 5

FUTURE LAND USE

City of Dell Rapids

VIII. PLANNING POLICY FRAMEWORK

Dell Rapids has adopted this Comprehensive Plan to provide a framework for specific future land-use and growth management policies and recommendations. It is designed to be a dynamic and flexible process to accommodate the changing needs of a growing urban population, yet steady enough to allow for reasonable long-term investment strategies by both public and private sectors. This plan is not intended to be a site development guide for specific parcels of land; rather, it is intended to provide a general outline of Dell Rapids growth management.

The following community vision statements should provide direction to Dell Rapids decision-making process on an ongoing basis.

1. To provide for the orderly arrangement of the parts of the City and adjoining future growth area enabling each part (residential, recreational, commercial and industrial) to perform its function economically and with minimum conflict to the other parts.

2. To provide an efficient, safe and economical system of transportation within the City and the surrounding area.

3. To promote the economic growth and social development of the City and the future growth area as a partner in cooperation with the private sector.

4. To provide ample opportunities for public participation at all stages of the planning and implementation process, including public hearings, rezoning notices and public awareness campaigns.

5. To retain flexibility within the planning and zoning process so as to readily cope with changing social and economic conditions.

6. To review and update the goals and policy guidelines every five (5) years.

GOALS AND POLICIES

The following goals and policies are a detailed expression of the community's aspirations for the future and can be considered the heart of the Comprehensive Plan. The goals and policies provide direction for future planning and city activities for the City of Dell Rapids and the contiguous planning area.

LAND USE

Land Use Goal #1: Allow compact and contiguous urban growth within city-limits.

Policies

1. Maintain the growth area boundary as the division between urban and rural densities and services, and encourage growth and development that will promote an efficient use of present and future public investments in roads, utilities, and other services.

2. Avoid scattered or strip commercial and industrial development outside the urban service area and direct such uses into existing developed locations where adequate services are available including major street access, and proper water and sewer systems.

3. Beyond the urban service boundary, encourage agriculture to remain the dominant land use activity and minimize the cost of providing future public services and facilities by maintaining a rural population density and preserving agricultural lands.

4. Require that properties served by public utilities be located within the City.

5. Establish and maintain an addressing system to create consistency for safety and convenience of businesses, visitors, and local citizens.

Land Use Goal #2: Maintain suitable transition zones between low-density residential areas and more intensive nonresidential uses.

Policies

1. Zone stable neighborhoods to prevent encroachment by incompatible industrial, commercial uses and excessively high density residential.

2. Encourage apartment, office, and institutional uses as alternatives to commercial strip development along major streets.

3. Allow conveniently located neighborhood commercial centers in locations that will not create land use conflicts or traffic problems.

4. Require that new development be compatible with existing adjacent development.

5. Require the clustering of neighborhood and convenience commercial uses in accessible locations.

6. Provide sufficient multifamily housing around commercial and industrial areas.

7. Allow high-density housing only in close proximity to major streets and activity centers.

8. Prevent commercial strip development along major thoroughfares in the City. Instead, encourage development of commercial clusters with appropriate transition zones to residential areas.

Land Use Goal #3: Preclude development of land which is environmentally unsuitable for construction by retaining floodplains, drainage ways, and other significant natural areas as open space networks for recreation and environmental enhancement.

Policies

1. Develop a bike trail and linear park system along the Big Sioux River Floodplains.

2. Develop neighborhood parks in new development areas.

3. Protect stream corridors, the aquifer and other significant natural areas from incompatible development.

4. Develop a storm water detention area on the west side of Clarke Avenue.

Land Use Goal #4: Enhance the character, identity, and historic preservation of the community.

Policies

1. Guide new development with urban design amenities that enhance community aesthetics and local identity.

2. Protect historic dwellings and other architecturally significant buildings from incompatible development, and encourage rehabilitation and reuse for the redevelopment of historic buildings.

3. Consider the formation of a Business Improvement District for the downtown area.

Land Use Goal #5: Conserve, maintain, and improve the older neighborhoods of the city.

Policies

1. Allow flexibility of land use and density in the redevelopment of blighted areas, provided such development is compatible with surrounding residential areas.

2. Target older neighborhoods for assistance in cleaning up residential homes and yards.

3. Maintain the central business district (CBD) boundaries in order to prevent encroachment of commercial and residential uses into adjacent neighborhoods and to more fully utilize the existing CBD area as a commercial

area.

TRANSPORTATION

Transportation Goal #1: Accommodate the city's major street system including a perimeter system of arterial streets.

Policies

1. Secure sufficient rights-of-way ahead of development.

2. Encourage the improvement of SD 115 from Downtown to Interstate 29.

3. Encourage an arterial corridor to be developed on the existing section line road (245th Street) on the north and northwestern portions of town to facilitate adequate cross-town traffic.

4. Avoid driveway entrances on arterial streets and wherever possible, on collector streets.

5. Ensure that driveway entrances on the opposite sides of the road are not offset.

6. Strip development, especially along SD Highway 115, must be controlled to help reduce safety hazards and enhance traffic flow.

Transportation Goal #2: Prevent heavy through traffic on minor residential streets by requiring a system of collector streets between adjacent subdivisions.

Policies

1. Encourage the development of collector streets.

2. Encourage the development of intersecting collector streets in the future growth areas.

3. Require limited access to the collector roads to enhance safety and traffic flow.

Transportation Goal #3: Maintain a safe and efficient local street system for movement of people and goods.

Policies

1. Design residential street layouts to minimize both overall street lengths and the quantity of site grading required.

2. Provide direct pedestrian and bicycle access from residential neighborhoods to schools, commercial centers, and recreation areas.

3. Avoid widening and signalization of local residential streets where the livability and safety of adjacent neighborhoods would be diminished by such action.

4. Require the design of local streets to discourage unsafe speeds.

5. Require the provision of safe and adequate access to all properties through the implementation of subdivision regulations.

Transportation Goal #4: Explore an alternative truck route for quarry traffic.

Policies

1. Use the existing truck route to Garfield Avenue then south to 3rd Street and then west to Highway 115.

2. Allow for truck route to take farm and commercial truck traffic.

HOUSING

Housing Goal #1: Encourage the development of assisted living facilities to meet the needs of the growing elderly population.

Policies

1. Work with the hospital, nursing homes and other facilities to find appropriate locations and shared services for assisted living facilities.

2. Locate assisted living facilities near or adjacent to elderly support services.

3. Require assisted living facilities to compliment the adjacent land uses.

Housing Goal #2: Encourage the development of affordable housing opportunities including manufactured housing, apartments, and modest single-family homes.

Policies

1. Encourage the development of a variety of housing types to meet the needs of all citizens.

2. Require all manufactured homes to locate in manufactured home parks.

3. Encourage the location of manufactured home parks in appropriate locations.

4. Require all manufactured home parks to construct landscape buffer strips to separate adjoining land uses.

COMMUNITY FACILITIES AND INFRASTRUCTURE

Community Facilities and Infrastructure Goal #1: Prevent unlimited outward expansion by maintaining urban growth area boundaries with provisions for phased annexation and extension of utilities.

Policies

1. Extend sewer utilities in connection with development to growth areas that have capacity with existing lift stations.

2. Maintain a consistent street pavement maintenance program.

3. Employ an area-wide approach in planning utility and drainage systems.

4. Utilize and preserve natural drainage systems to the greatest extent possible.

5. Minimize soil erosion and downstream sedimentation through appropriate design.

6. Create an area assessment to finance the construction of all trunk lines to allow sanitary sewer service into growth area #4, #5, and #6.

Community Facilities and Infrastructure Goal #2: Provide and maintain parks, streets, and other public facilities at a uniformly high standard in all neighborhoods of the city.

Policies

1. Secure suitable park sites and other public facility sites ahead of development.

2. Establish sanitary restroom facilities in the ballpark area South of the Big Sioux River.

3. Integrate park and open space areas into residential neighborhoods whenever feasible.

4. Improve the quality and quantity of supervised recreational activities in the community.

5. Maintain and encourage the growth of the Dell Rapids Community Hospital.

6. Maintain and encourage the growth of the nursing home/assisted living/independent living facilities.

7. Establish a camper sanitary sewer system.

ECONOMIC DEVELOPMENT

Economic Development Goal #1: Work with the Dell Rapids Economic Development Corporation to improve economic development opportunities.

Policies

1. Support expanded retail opportunities with the location of a commercial district on old Highway 77 and in other appropriate neighborhood locations.

2. Encourage a strong supportive retail sector that will complement commercial uses.

3. Allow development for all commercial sites within appropriate community regulations.

4. Encourage office development for commercial and light industrial growth.

5. Work with the Development Corporation to provide incentives to industry and businesses willing to locate in Dell Rapids.

Economic Development Goal #2: Develop a new industrial and commercial park in Area #7.

Policies

1. Investigate the possibility of expanding industrial and commercial development into the area south of the Big Sioux River.

IX. PLAN IMPLEMENTATION

The best possible way to implement a comprehensive plan is to utilize all of the administrative tools available in order to influence development in a positive manner. There are many tools that can be utilized, including zoning regulations, subdivision regulations, policy plans, capital improvements plans, annexation studies, and well-rounded community involvement.

Local Governing and Advisory Boards. The key players in the implementation of a Comprehensive Plan are the Planning Commission and the City Council. It is the duty of the governing body of Dell Rapids to encourage progress by utilizing all of the tools available, so that orderly growth and development can take place. With public input, the Planning and Zoning Commission and the City Council can create a balance between industry, commerce, and housing, and can utilize all of the resources available to facilitate civic improvement.

Local Regulatory Tools. Perhaps the most widely utilized administrative tools are the Zoning and Subdivision regulations. It is essential to revise either or both of these documents when they conflict with the Comprehensive Plan. It is especially important to create a cooperative agreement between Minnehaha County and the City of Dell Rapids to insure the Dell Rapids urban growth area is developed as the Comprehensive Plan recommends.

Annexation. If the orderly growth of Dell Rapids is to continue over the planning period, it is essential the city continue an active annexation program. The boundaries for providing municipal services should generally coincide with the corporate limits. Areas designated by the land use plan as future growth areas of the city should be annexed in advance of major development as should existing rural subdivisions which lie adjacent to the city. This policy will assure that sufficient development land to accommodate the future growth of the urban areas is maintained.

Capital Improvements Planning. The purpose of capital improvements planning is to provide local government officials with a guide for budgeting for major improvements that will benefit the community. Before future development can be considered, the City must review current infrastructure and identify any deficiencies that need to be corrected prior to the development. It is the intention of the City to upgrade a portion of existing utilities and transportation routes on an annual, ongoing basis. Information within the Comprehensive Plan will be utilized in constructing the Dell Rapids capital improvement plan. On page 26 is a list of major capital improvements over the 20-year study period.

X. Joint Jurisdiction

Decisions on land use issues in the area surrounding the city occur jointly between the City and Minnehaha County. This area is identified as the joint jurisdiction on **Map 6**. This joint arrangement is intended to promote the orderly outward growth of the City and minimize conflicts between urban and rural land uses. A large portion of the joint jurisdiction is devoted to agricultural uses but other uses are present including residential acreages, rural residential subdivisions, commercial and industrial uses, and quarry activities.

This section incorporates the goals and policies of the Minnehaha County Comprehensive Development Plan into the City's plan. They are intended to guide decisions of the planning commissions and elected officials on the future development of the extraterritorial area.

Goals

The identification of goals in the planning process is the initial step in charting a broad direction which the county intends to pursue. Goals are an end which may never be achieved but represent ideals or targets and should be used to guide and support decisions relating to future development. The general goals of the plan are:

- To provide for orderly, efficient and economical development.
- To manage growth within the framework of the Development Plan and municipal comprehensive plans.
- To enhance communication and cooperation among several governmental and quasi-governmental entities who have the potential to impact and influence developmental patterns.
- To maintain a viable agricultural economy and preserve the rural quality of life.
- To maintain a distinction between rural areas and the cities and to preserve and enhance community identity.
- To provide a choice of living environments for county residents.
- To achieve the maximum efficiency in the provision of public services and facilities.
- To support and encourage growth of the county's economic base and promote the expansion of job opportunities.
- To promote aesthetically attractive development in the rural area.
- To preserve environmental, historical, and cultural resources.
- To provide a transportation system that promotes the safe and efficient movement of people, goods and services.

Planning Areas and Policies

To assist in meeting the stated goals, the Future Development Plan (Map 6 in the Minnehaha County Comprehensive Development Plan) divides the county into four planning areas. Policies have been identified to provide specific direction and intent regarding the future growth of each planning area. The goals, policies and Development Plan of the County's Comprehensive Plan should be viewed as an extension of the goals and policies (Section VIII) and the future land use (Map 5) contained in the City plan.

Existing Municipal Areas

These areas are defined by the current boundaries of the incorporated cities. Although cities control their own planning and zoning activities, county land use decisions will have a very real impact upon future municipal development patterns and the ability of each community to efficiently provide for future public services and facilities. The following policies apply to municipal planning areas:

Policies

- Concentrate future nonfarm growth in or contiguous to municipalities where public infrastructure can be economically provided. Maximize the utilization and efficiency of existing public facilities and services.
- Discourage premature developments in municipal fringe areas.
- Seek the input of municipal officials in the review of development proposals which could potentially impact future municipal expansion and public infrastructure projects.
- Encourage annexation of potential development sites within municipal fringe areas before development plans are approved.
- Promote cooperative efforts with the municipalities in dealing with growth issues. Municipal requests for extraterritorial zoning jurisdiction should be guided by the procedures outlined in the Plan Implementation chapter.
- Insure that future rural development does not detract from the implementation of municipal comprehensive plans. Recognize municipal growth plans when considering future development proposals.
- Preserve the identity of existing communities by discouraging sprawl and leapfrog development.
- Encourage a pattern of development in transition areas which can be integrated into municipal planning areas without the need for costly and inefficient public infrastructure expenditures.

Transition Areas

Transition areas are characterized by a mix of land uses. Farming activities are expected to continue operating among rural residential subdivisions and scattered residential acreages. Transition areas are further characterized by vacant parcels too small to support long term agricultural use. It is recognized that this will create development pressure for conversion of land to alternative uses. Transition areas are generally located adjacent or in close proximity to the metropolitan area and the other freestanding communities. A portion of the land within transition areas will be annexed during the planning period and provided with public infrastructure while other land will remain outside municipal boundaries and lack public services. Transition areas are not projected to support long term agricultural uses nor will intensive farming activities such as concentrated animal feeding operations be appropriate uses.

The physical boundaries of most cities will expand during the planning period, with growth occurring within the transition areas delineated on the Future Development Plan. Regional and national economic conditions, and the ability of the municipalities to meet public infrastructure demands, will determine the timing and extent of urban expansion. The intent is to maintain clearly defined urban areas within the county.

Policies

- Promote optimum land use relationships and minimize land use conflicts.
- Promote cooperative efforts with the cities in dealing with developmental issues in municipal fringe areas.

- Utilize the planned development zoning district to accommodate a mix of land uses, promote the arrangement of uses on a comprehensive rather than piecemeal basis, and address problems related to existing land use patterns.

- Encourage new residential construction to locate on previously platted lots and other parcels which already qualify as building sites.

- Consider limited development in those areas where parcel size and competing land uses have substantially reduce the economic viability and future success of agricultural operations.

- Restrict development of transition areas so service improvements are not needed before municipal infrastructure can be economically extended.

- Employ a density standard of one dwelling per quarter-quarter section in those areas where current land use patterns have not significantly impacted farming operations.

- Work with the Minnehaha Community Water Corporation to ensure that future water system improvements do not conflict with county development policies and the long term viability of agricultural operations.

- Limit rural densities so that current service levels are not exceeded; thereby avoiding the creation of special purpose districts (i.e. sanitary, water and road districts).

- Coordinate the siting of industrial uses with the Minnehaha County Economic Development Association.

- Enhance and protect natural drainage systems within development areas. Storm water management plans for the entire drainage basin should be required as a prerequisite to development.

- Restrict development in areas where unsuitable soils and other physical limitations are present.

- Preserve sensitive environmental areas through the development review process.

- Minimize soil erosion and siltation by requiring proper site preparation and construction techniques.

- Maintain an inspection program that ensures proper installation of on-site wastewater treatment systems.

- Discourage strip development along transportation arteries, particularly those which serve as gateways to the cities and major activity centers.

- Restrict development along major transportation corridors for future right-of-way acquisition and to minimize future construction costs.

Commercial Agricultural Areas

Agricultural land is commonly viewed as temporary use just waiting for the opportunity to be developed. Only a small percentage of the county's agricultural land base will be needed to support the population and economic growth expected to occur during the planning period.

Commercial agricultural areas are generally those areas which have experienced little or no competing nonfarm development. These areas are intended to be preserved for farm related use where such activities can freely operate without the need to impose restrictions due to competing uses. A density standard not exceeding one dwelling per quarter-quarter section of land should be maintained for the planning area. Small scale developments should not be allowed because of their cumulative negative impact on agriculture and increased need for urban type services.

Policies

- Restrict the density of residential uses within commercial agricultural areas and direct higher developmental densities to the municipalities.
- Preserve and protect the agricultural productivity of rural land by restricting the development of nonfarm residential sites. Maintain a residential density of not more than one building site per quarter-quarter section.
- The premature development of agricultural land should be discouraged.
- Discourage development patterns that require public improvements financed in part by the farming community but which are not necessary to support agriculture.
- Limit rural densities so that current service levels are not exceeded; thereby avoiding the creation of special purpose districts (i.e. sanitary, water and road districts).
- Discourage the splitting of land parcels into fragmented units which are incapable of supporting farming activities.
- Protect the rural area from uses which interfere and are not compatible with general farming practices.
- Avoid regulations which have a negative impact on farming operations.
- Promote development patterns which will avoid producing inflated agricultural land values.
- Within the framework of density zoning, every effort should be made to cluster residential uses and limit driveway approaches onto arterial and collector roads.
- Construction of infrastructure improvements in the rural area should be directed at addressing existing service deficiencies and not to justify additional nonfarm development.
- Work with the Minnehaha Community Water Corporation to ensure that future water system improvements do not conflict with county development policies and the long term viability of agricultural operations.
- Allow the siting of agri-business activities at appropriate locations in the rural area.
- Discourage the random and haphazard siting of commercial and industrial uses within the rural area where such uses do not support the agricultural industry.
- Protect construction aggregate resources by restricting adjacent land uses to those that are compatible with extraction operations. Require operators to meet developmental and operational standards.
- Regulate concentrated animal feeding and processing operations to protect environmental quality and minimize conflicts with human activities.
- Maintain an inspection program to ensure proper installation of on-site wastewater disposal systems.

Rural Service Areas

The county has been fortunate to have avoided development patterns distinguished by satellite communities with independent taxing authority encircling the metropolitan Sioux Falls area. Development which previously spilled into the rural area has either been annexed into one of the freestanding communities or is not of sufficient

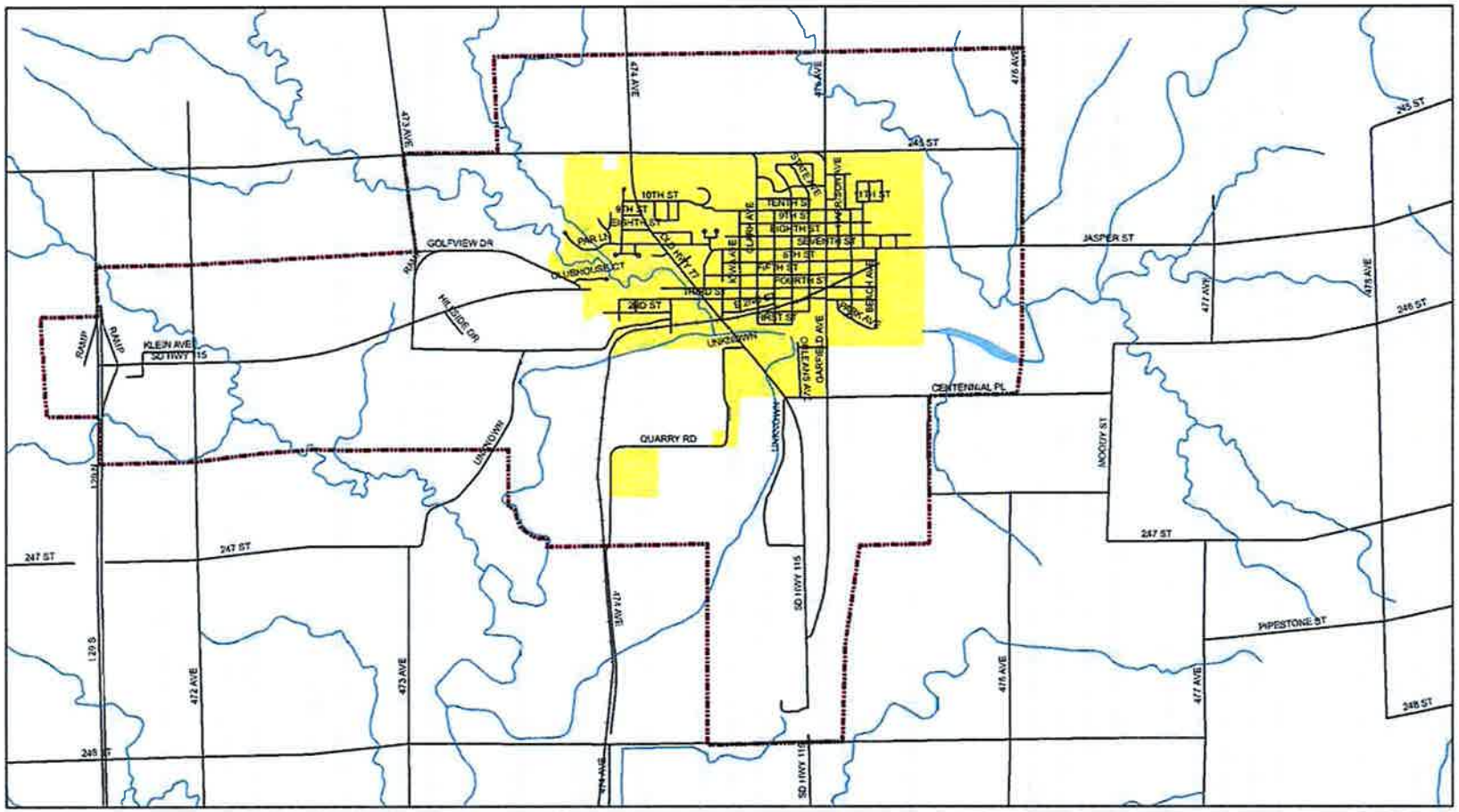
concentration to exert any significant influence or exhibit a community identity. Cities will continue as the primary providers of goods and services to urban as well as rural residents. Historically, several areas outside the cities evolved as rural centers, located mostly along major transportation routes, providing basic convenience services to the agricultural community and highway travelers. Rail access played a part in the development of Lyons, Ellis, Corson and Rowena while areas such as Huset's Corner, Wall Lake Corner, Pumpkin Center, and Union Center developed along Highway 16 (now Highway 42). Highway 77 (now Highway 115) supported both Renner and Midway Corners while Buffalo Trading Post offered services to Highway 19 travelers. Rural service areas generally do not have an urban infrastructure and are not capable of supporting much more than limited development.

Many existing rural centers were severely impacted by the decline in the farming population, rail abandonment and construction of the interstate highway system – factors which eventually forced many businesses to close. Others continue to survive due to increased urbanization of the county and the ability to capitalize on the growing rural population. Higher traffic volumes on major roads in the county are likely to encourage the development of new center and the expansion of existing ones.

The Future Development Plan encourages the majority of commercial and industrial development to locate within the cities. However, it is recognized that convenience goods and services as well as some industrial uses could be appropriately sited within the rural area. These locations include existing service areas where some reasonable expansion is appropriate and at major highway intersections.

Policies

- Promote optimum land use relationships and minimize land use conflicts.
- Discourage the random and haphazard siting of commercial and industrial uses within the rural area when such uses do not support the agricultural industry.
- Utilize the planned development zoning district to accommodate a mix of land uses, promote an arrangement of uses on a comprehensive rather than piecemeal basis, and address problems related to existing land use patterns.
- Coordinate the siting of industrial uses with the Minnehaha County Economic Development Association.
- Facilitate agri-business activities at appropriate sites in the rural area.
- Enhance industrial development by restricting incompatible land uses in areas where rail access is available.
- Locate commercial uses at interstate highway interchanges and high traffic intersections. Such uses should be developed in a nodal pattern and geared to the support of highway users.
- Discourage strip development along transportation arteries, particularly those which serve as gateways to the cities and major activity centers.
- Promote development patterns which maintain the safety and carrying capacity of major roads. Discourage strip development patterns.
- Preserve the environmental quality of the county with respect to economic development.



Legend

- Joint Jurisdiction Area
- City Limits
- Roads
- Rail
- Creeks, Rivers & Lakes

Map 6

JOINT JURISDICTION

City of Dell Rapids

This information has been secured from sources we believe to be reliable, however we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for on site investigation.

This map was compiled by the South Eastern Council of Governments

Capital Improvements Summary of Needs 2008 - 2028

2008 - 2013
New pool house
Bike trail along Big Sioux River and throughout the City
Storm water detention facility west of Clark Avenue
12th Street drainage improvements
Reconstruction of 15th Street from Hwy 77 to Garfield Avenue
New fire station
New main lift station and sanitary sewer force main
Park development in Areas #2 and/or #5 (Spruce Glen)
10th Street from west of Iowa Avenue to Rebekkah Avenue
Water and sewer extension to Area #4
Sanitary sewer and water to Area #7
Water main looping from 3rd Street to Spruce Glen

2013 - 2018
Sewer lagoon expansion
Garfield Avenue bridge replacement
Truck route extension on 3rd Street from Orleans Avenue to Garfield Avenue
5th Street improvements from State Avenue to Garfield Avenue
Drainage channel improvements from 6th Street to the Big Sioux River
Bike trail connections to other communities and continued expansion in community
3rd Street from SD 115 to Orleans Avenue
Water and sewer extension to Area #5
Orleans Avenue improvements from 4th Street to 3rd Street (storm sewer imp. from 4th Street to the Big Sioux River)
Ladelle Avenue improvements from 4th Street to 3rd Street (storm sewer imp. from 4th Street to the Big Sioux River)
15th Street (245th Street) from Hwy 77 west to 473rd Avenue
Second water supply river crossing along SD 115

2018 - 2023
Water extension to Area #6
Sanitary sewer lift station for Area #6
Community center/city hall
7th Street improvements from Garfield Avenue east to RR Crossing
6th Street improvements from Garfield Avenue to Birch Avenue

2023 - 2028
Aquatic center
Upgrade water supply line from MCWC

APPENDIX 1
Land Use Location and Design Criteria

Residential

Low density (3 to 6 units/acre)
*Access to local street system-avoid direct access to arterial streets
*Convenient to neighborhood school, park, and commercial services
*Avoid environmentally sensitive areas such as wetlands and drainage ways

Medium density (6 to 16 units/acre)
*Access to major street system
*Well designed transition to adjacent land uses
*Provision of usable open space based on project size
*Transition between low-density neighborhood and major streets
*Adjacent to neighborhood commercial center

High density (16 to 40 units/acre)
*Adjacent to principal arterials near major commercial, institutional, or employment centers
*Well designed transition to adjacent land use
*Provision of usable open space based on project size

Commercial

Highway oriented and regional centers
*Adjacent to major streets and regional highways
*Controlled access to arterial streets
*Quality architecture and well designed transition to adjacent uses

Community centers
*Intersection of arterial streets and along transit routes
*Mixed-use development including office, institutional or multifamily residences
*Well designed transition to adjacent uses

Neighborhood retail, office, and convenience services
*Convenient vehicular and pedestrian access to residential areas
*Adjacent to major street intersections
*Design compatible with surrounding uses
*Well designed transition to adjacent uses
*Located within residential, employment or institutional centers

Downtown area
*Pedestrian orientation
*Quality urban design standards
*Mixed uses including office, retail, institutional, cultural and entertainment
*Orientation to greenway where feasible
*Consolidate off-street parking areas
*Residential uses within walking distance of CBD

Industrial

General light industrial
*Regional highway access located close to major arterial streets
*Rail access for industrial uses requiring it
*Buffered from residential and other adjacent land uses
*Industrial park setting with building design and landscape amenities
*Include office, warehousing, and limited retail uses

Limited heavy industrial

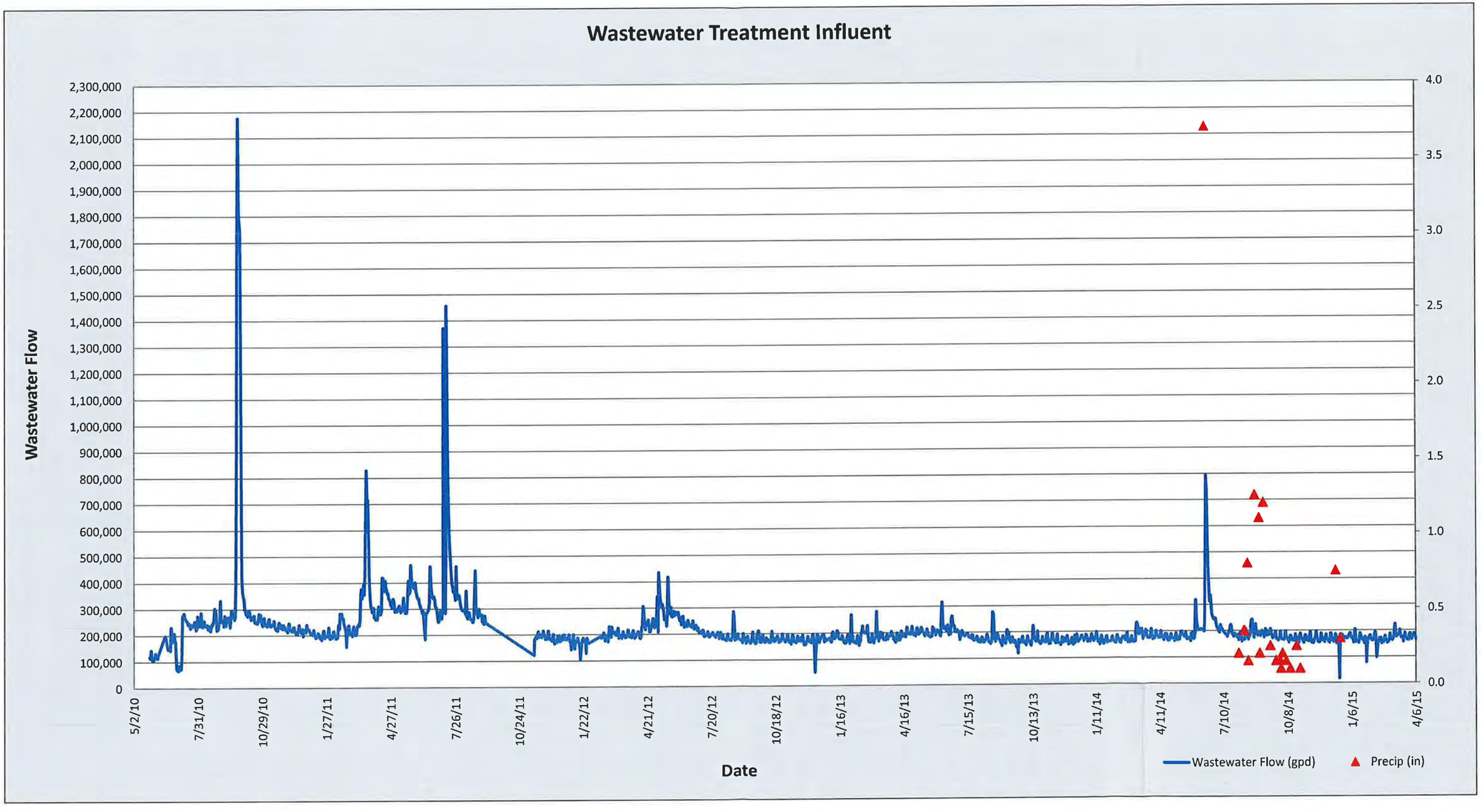
*Access to major streets
*Well designed buffer to adjacent land uses
*Minimize environmental impacts on surrounding properties

Mixed Use

Institutional, office, and other mixed use development

*Convenient to intended market area
*Vehicular access to major streets
*Minimization of traffic impact on adjacent uses
*Orderly expansion of institutional uses near residential areas
*Design compatibility with adjacent uses
*Include retail, multifamily and business-technology land uses

Appendix D
Wastewater Treatment Influent Records


Wastewater Treatment Influent
Wastewater Flow
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4/11/14
7/10/14
10/8/14
1/6/15
4/6/15
Date
Wastewater Flow (gpd)
Precip (in)

Appendix E
Wind Rose Charts

South Dakota State University

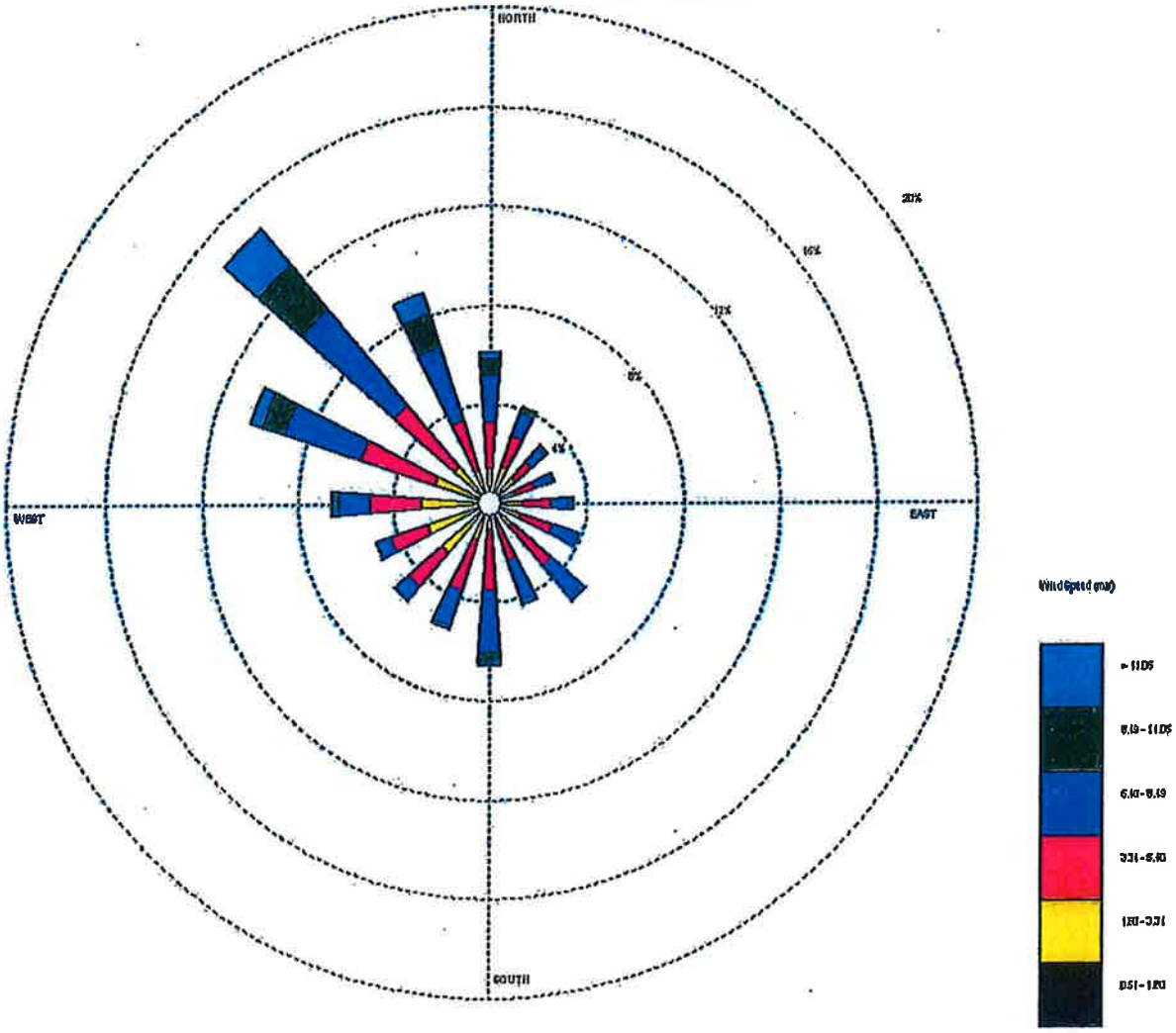
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: January :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
January



South Dakota State University

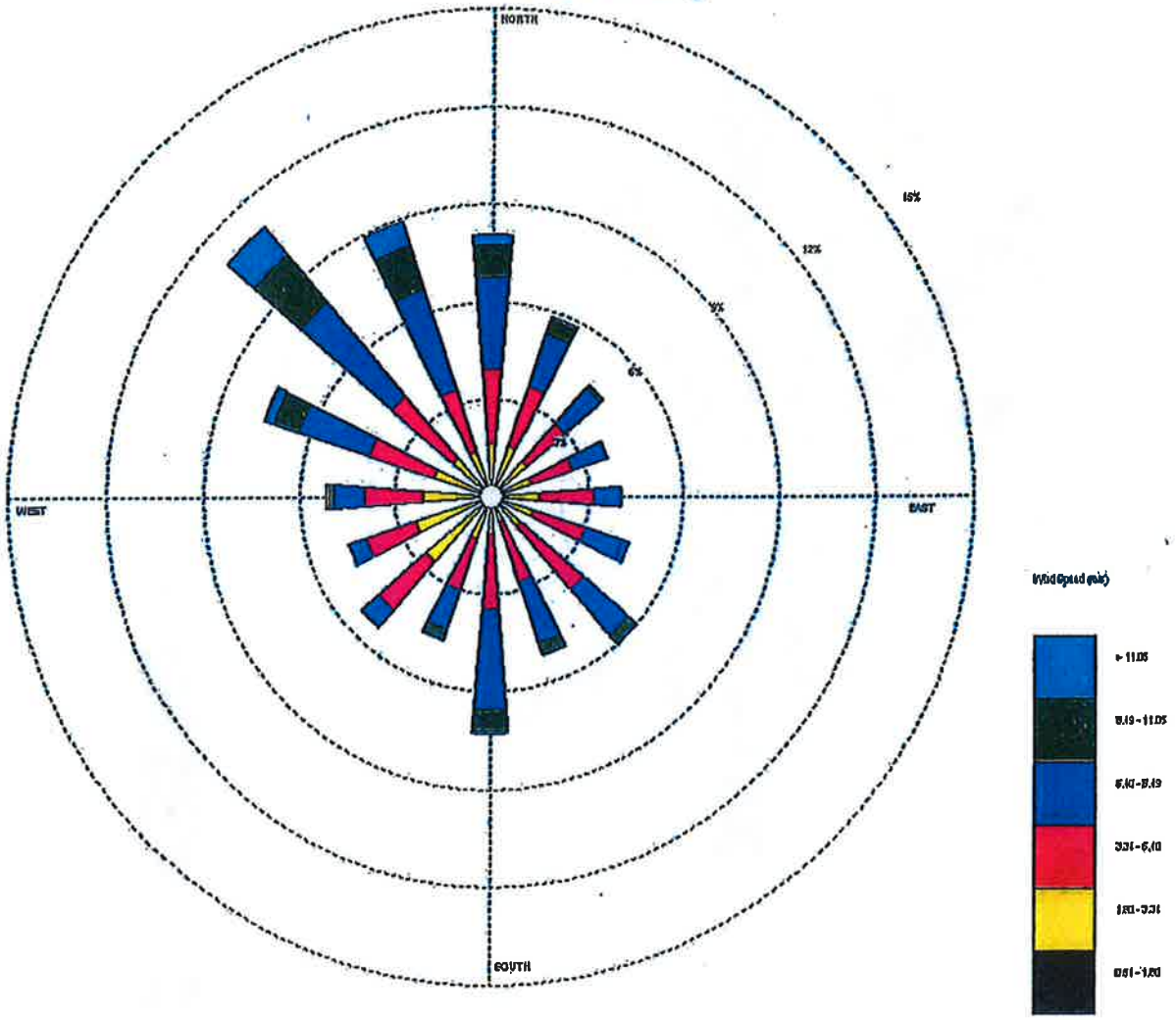
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: February :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
February



South Dakota State University

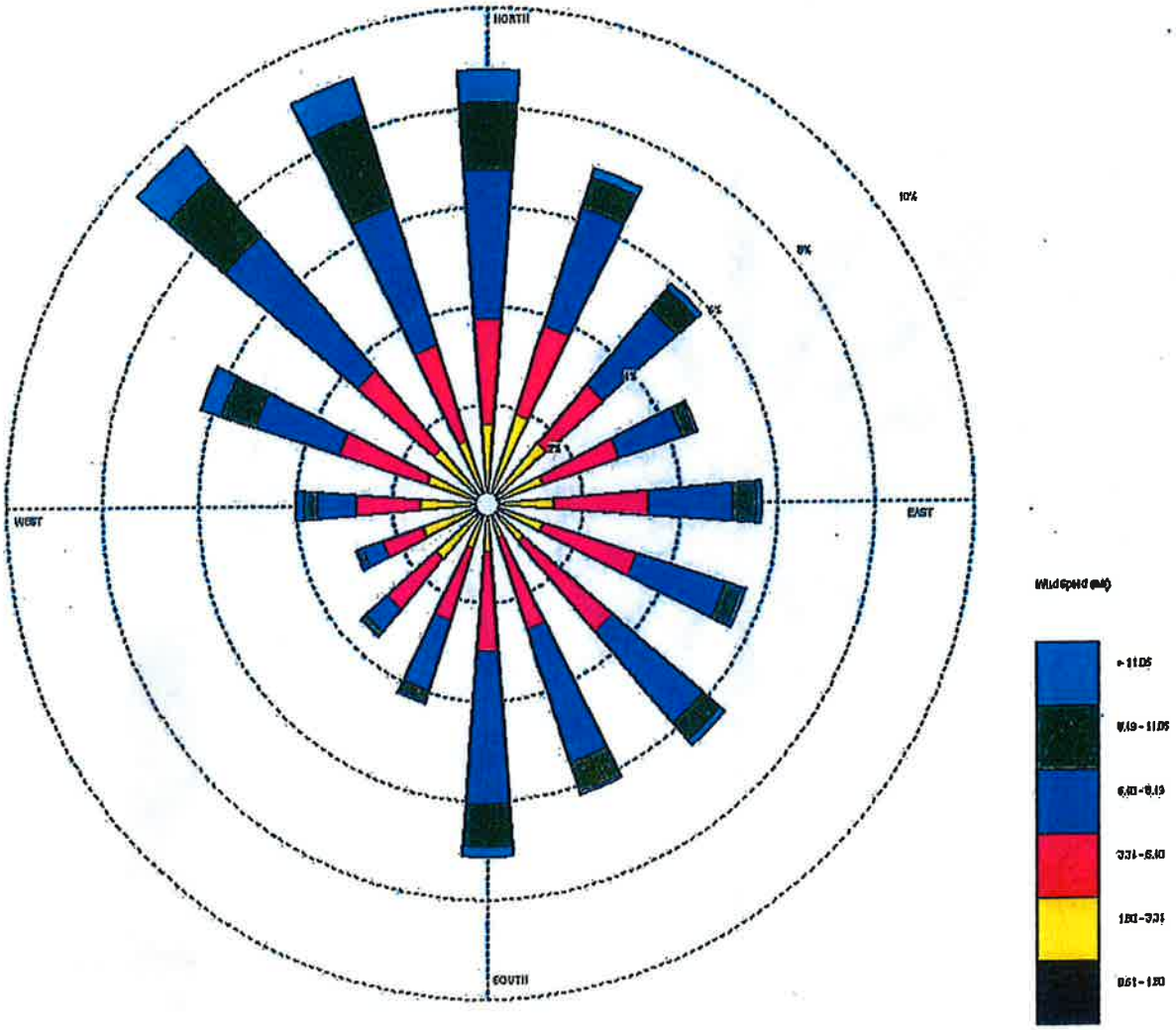
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: March :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
March



South Dakota State University

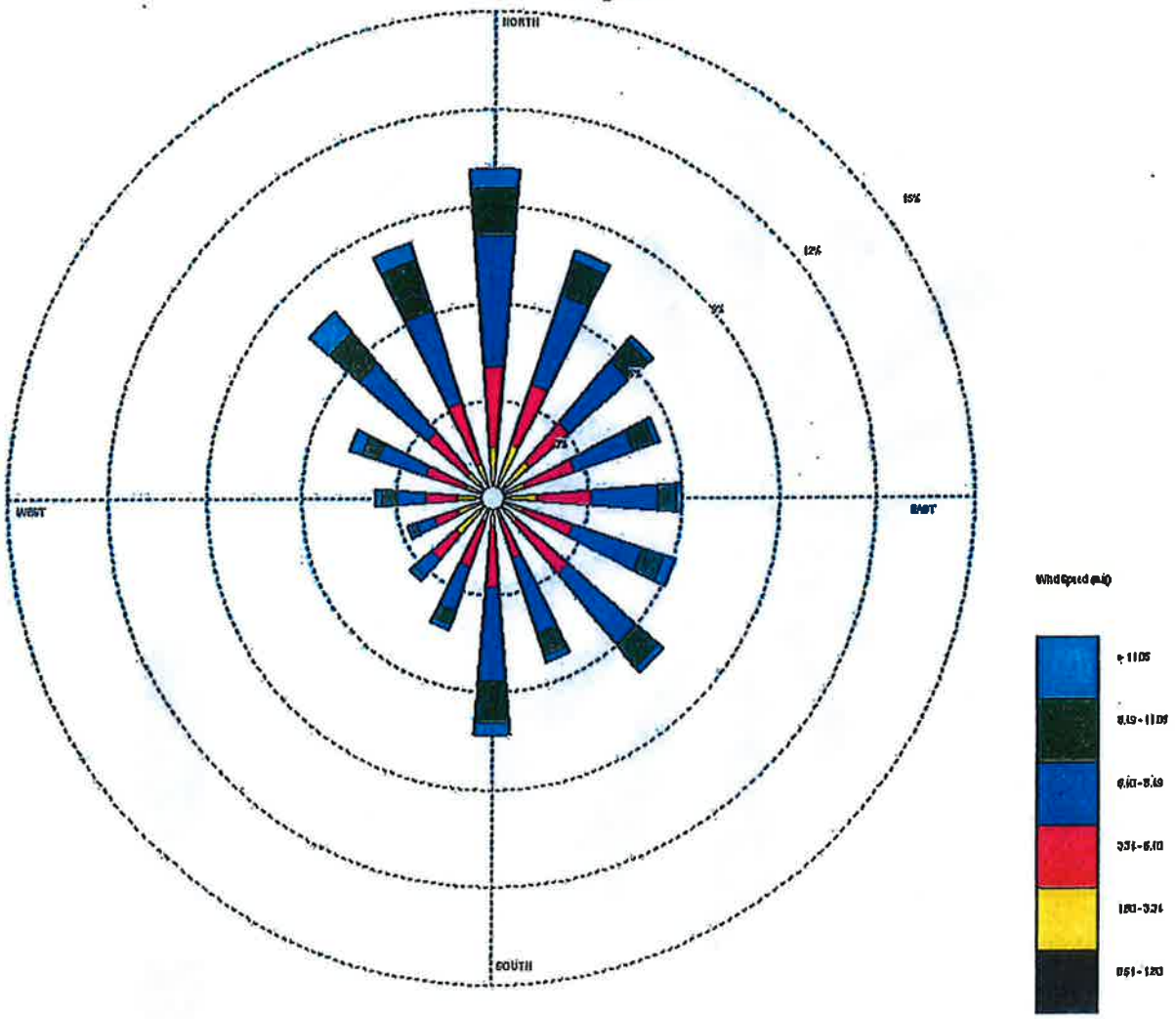
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: April :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
April



South Dakota State University

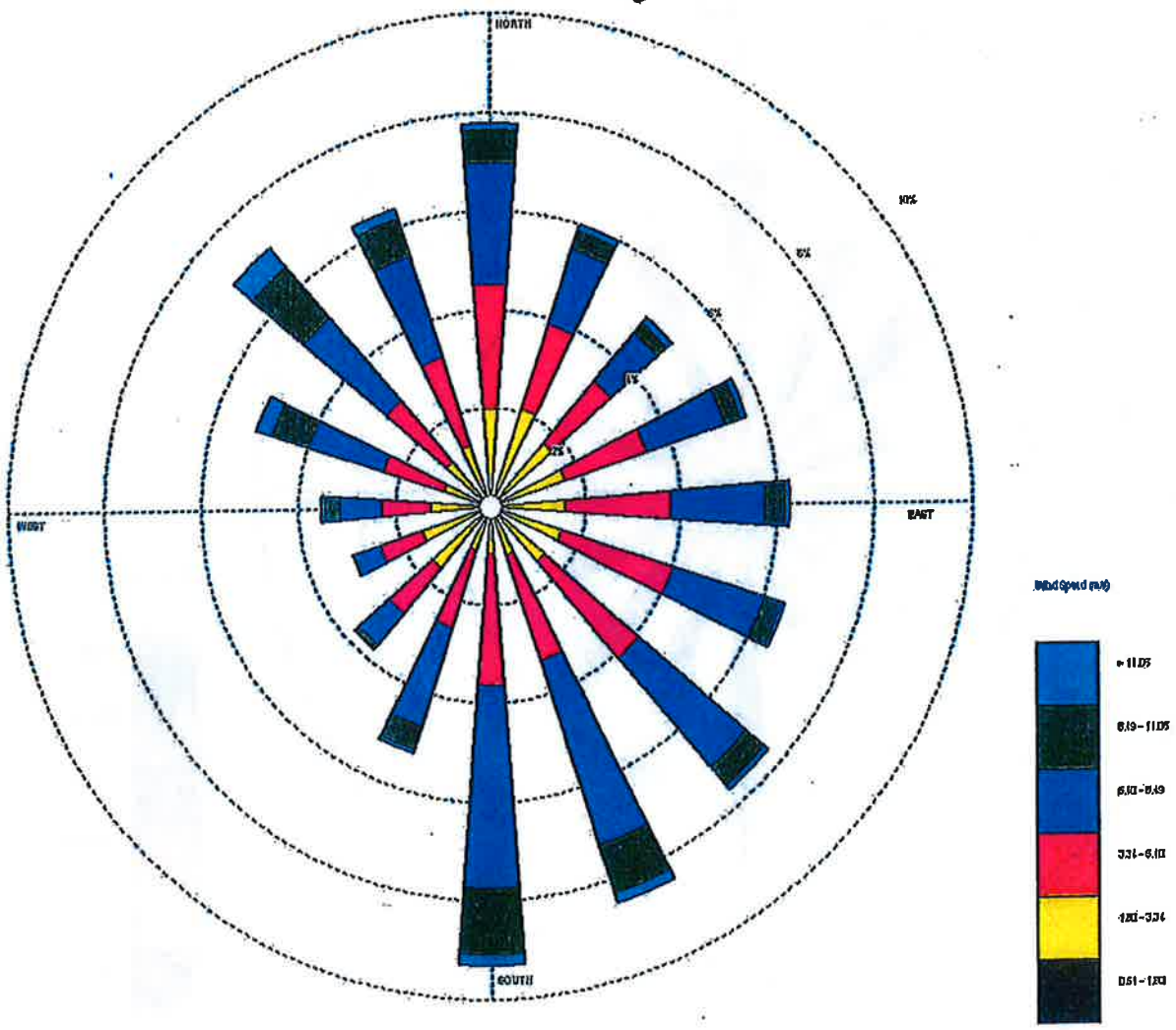
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: May ::Go::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
May



South Dakota State University

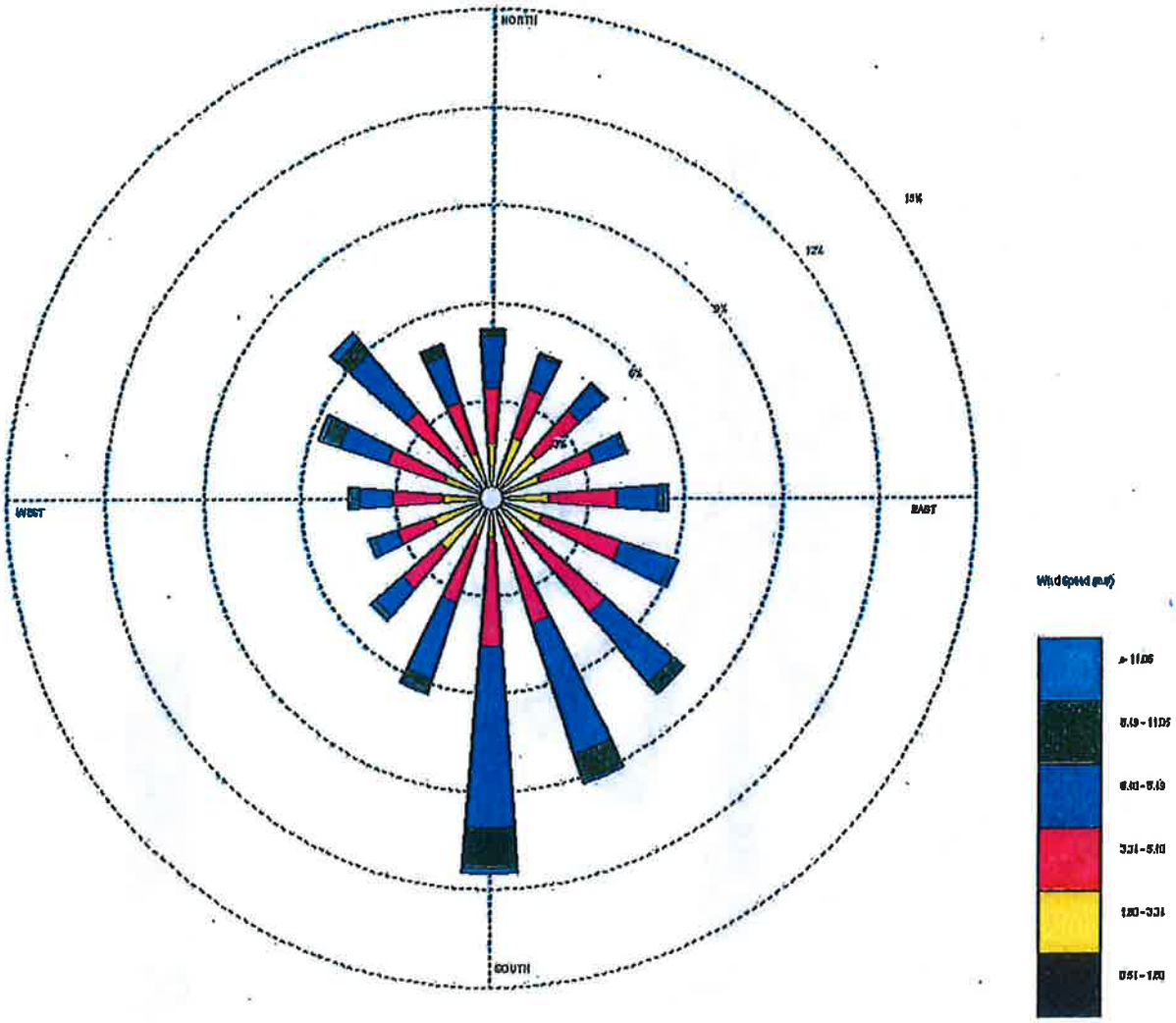
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: June :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
June



South Dakota State University

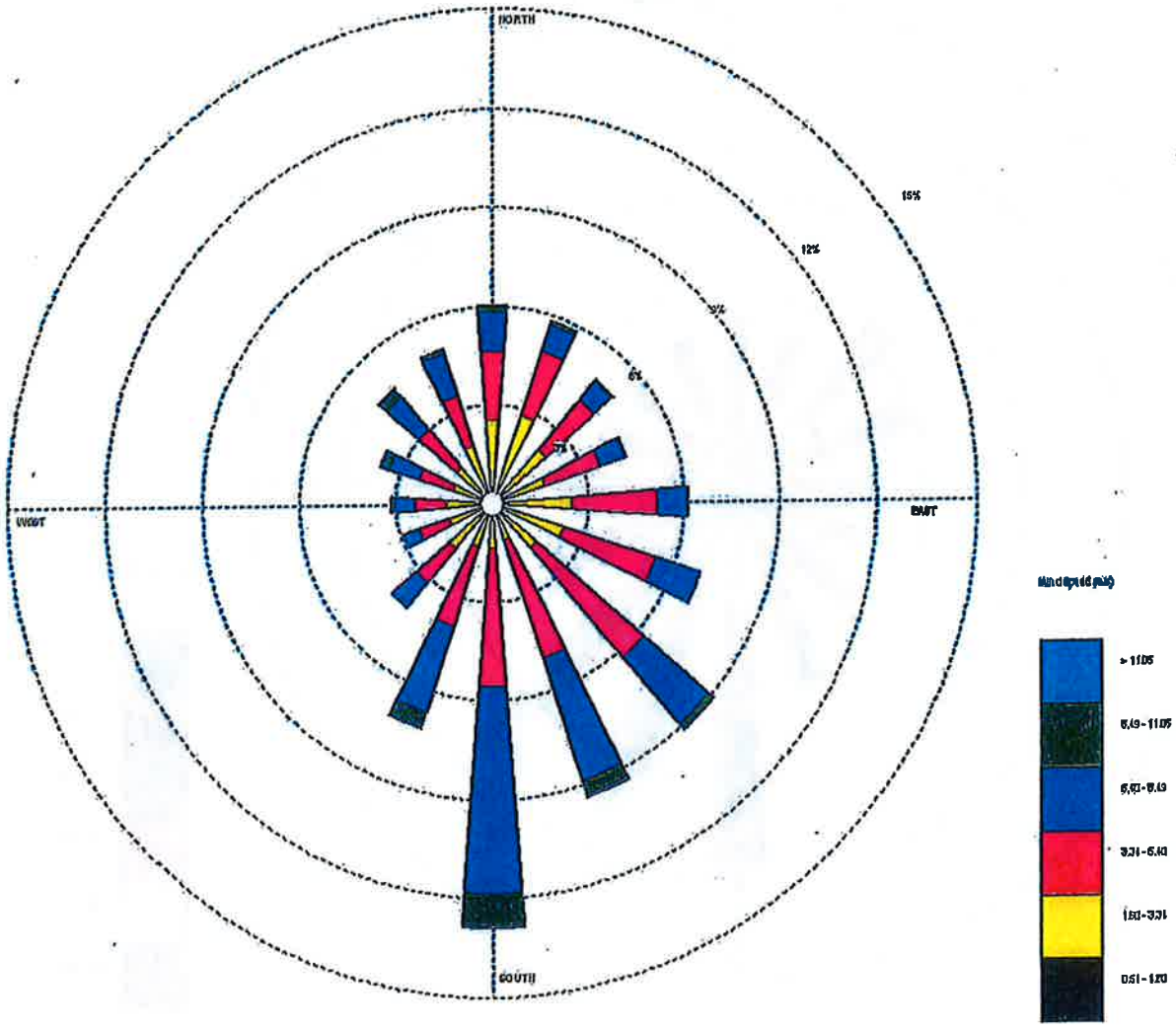
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: July :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
July



South Dakota State University

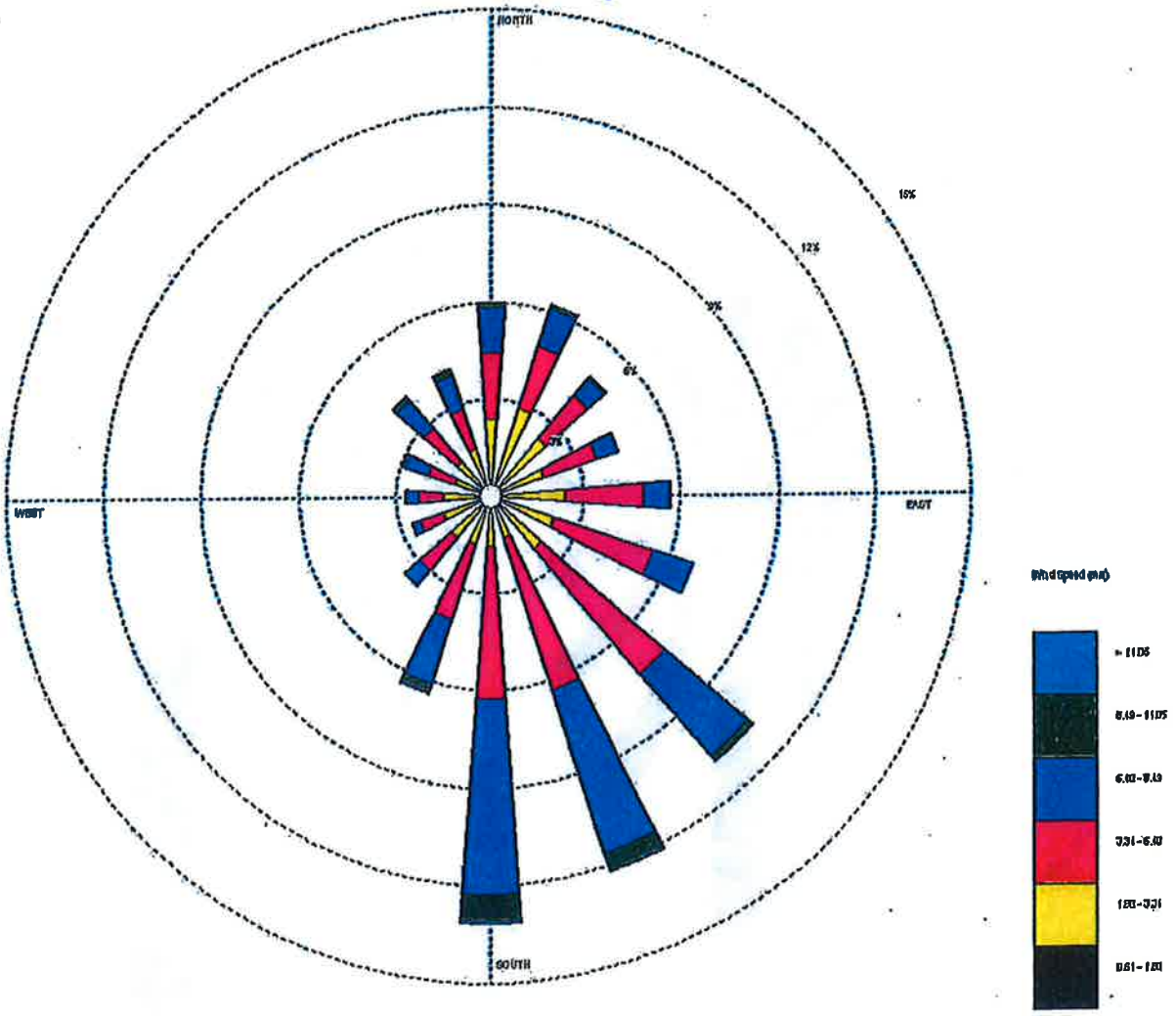
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: August :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
August



SOUTH DAKOTA STATE UNIVERSITY

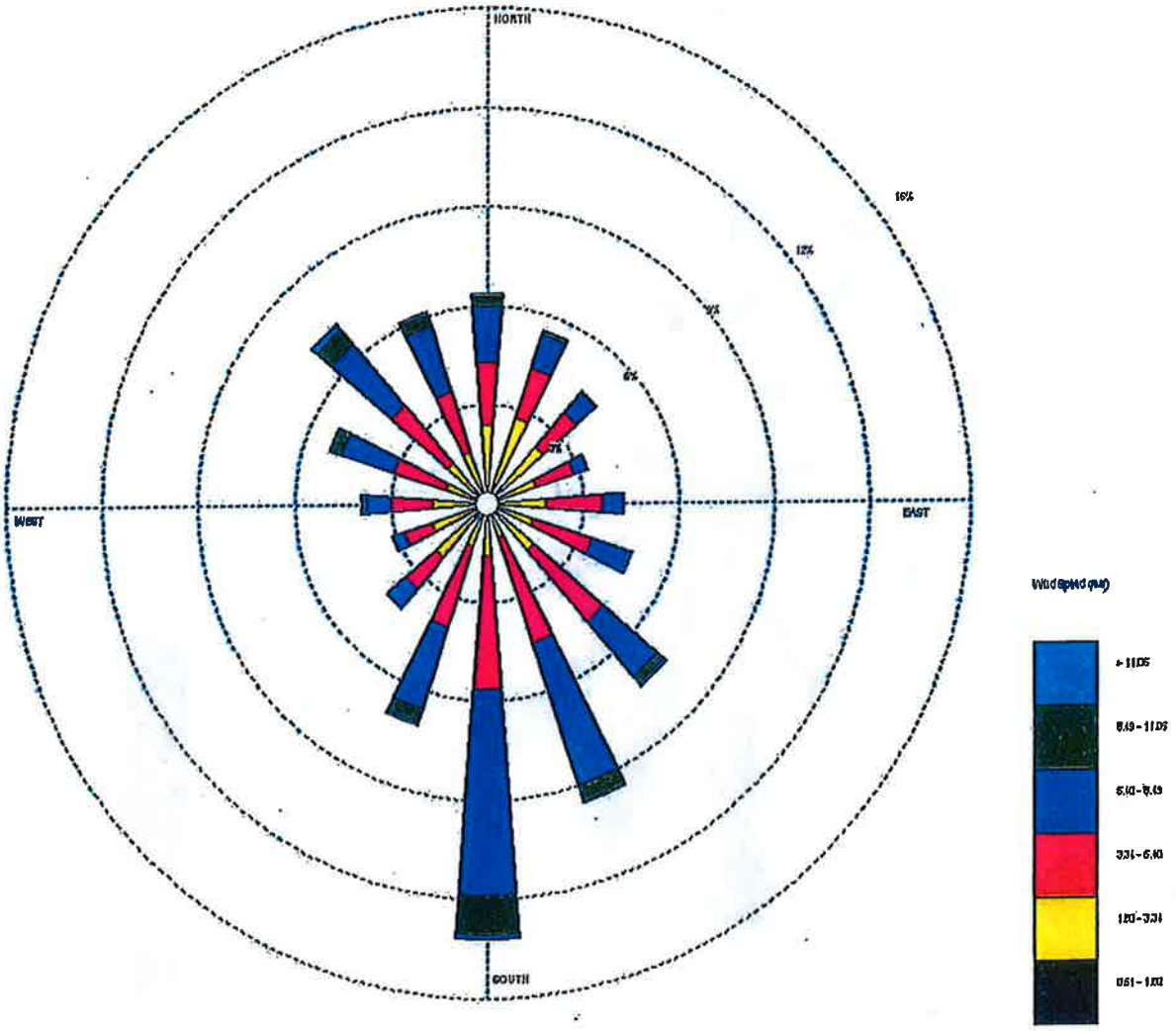
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: September ::Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
September



South Dakota State University

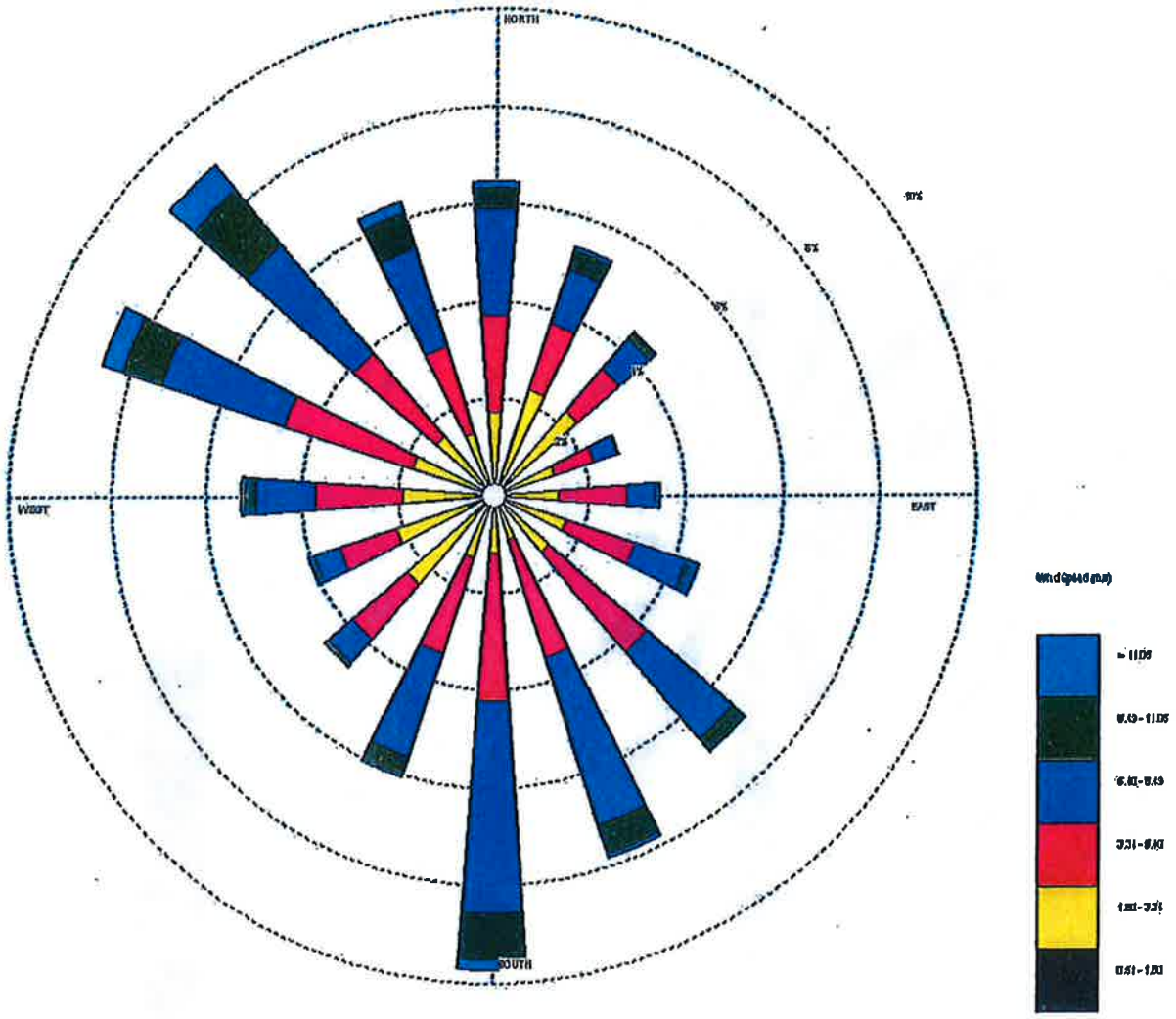
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: October :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
October



South Dakota State University

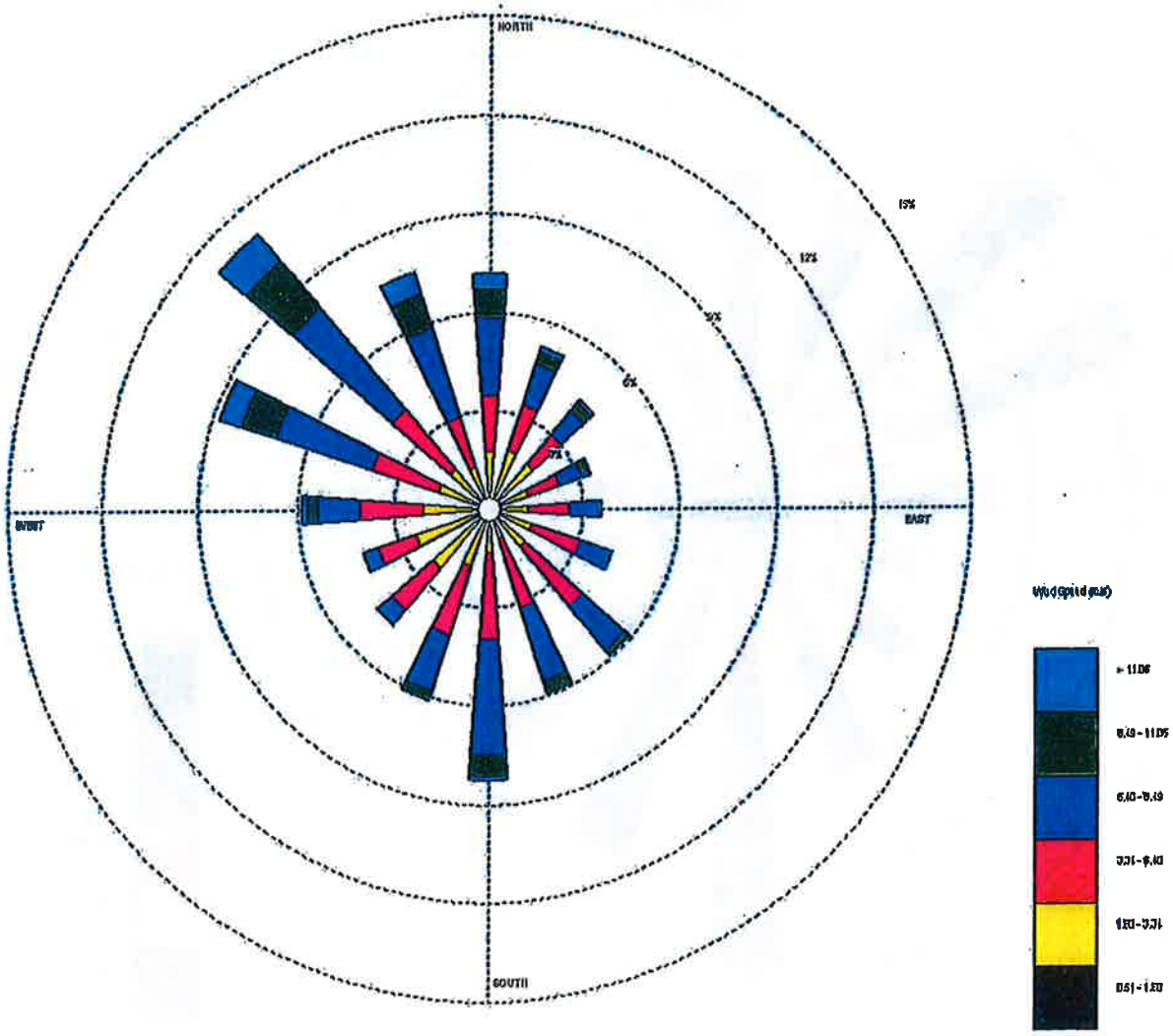
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: November :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
November



South Dakota State University

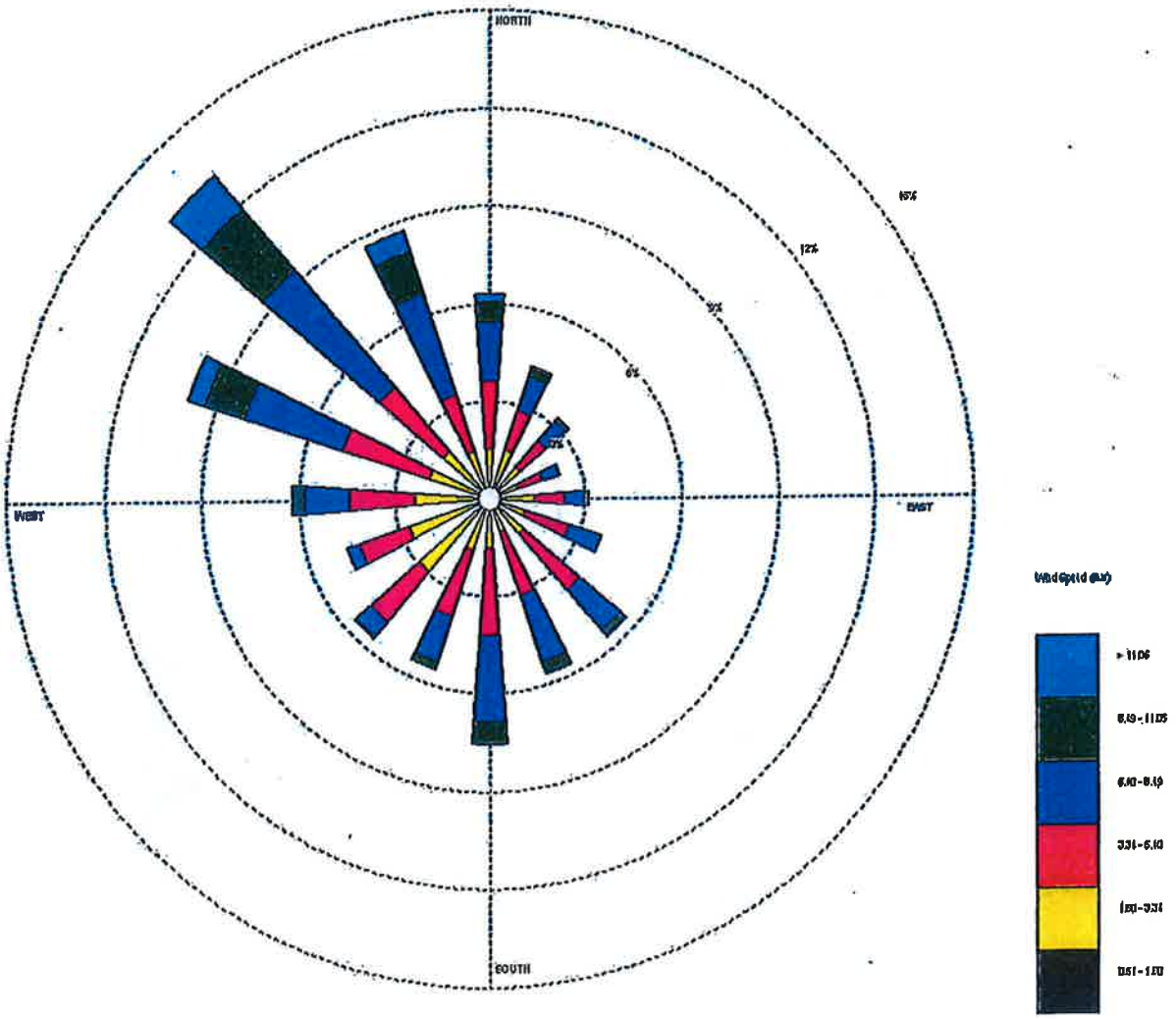
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: December :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
December



Amendment to The Facility Plan for Wastewater Treatment

Dell Rapids, South Dakota

December 2015

DGR Project No. 665430

DGR ENGINEERING

AMENDMENT
TO
THE FACILITY PLAN
FOR
WASTEWATER TREATMENT

DELL RAPIDS, SOUTH DAKOTA

I hereby certify that this plan, specification
or report was prepared by me or under my direct
supervision and that I am a duly
Registered Professional Engineer under the
laws of the State of South Dakota.

By_____

Gabriel, G Laber, P.E.
Registration No. 9236

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
9236
GABRIEL G.
LABER
SOUTH DAKOTA
12/3/15

DGR Engineering

Rock Rapids, IA • Sioux Falls, SD • Sioux City, IA • Ankeny, IA

(712) 472-2531 (605) 339-4157 (712) 266-1554 (515) 963-3488

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INTRODUCTION

BACKGROUND INFORMATION

On November 1, 2014 the City of Dell Rapids' new Surface Water Discharge Permit became effective. This permit included a construction schedule for the City to meet effluent limits. The construction schedule includes a timeline for the City to have completed a study, submit plans, begin construction and complete construction.

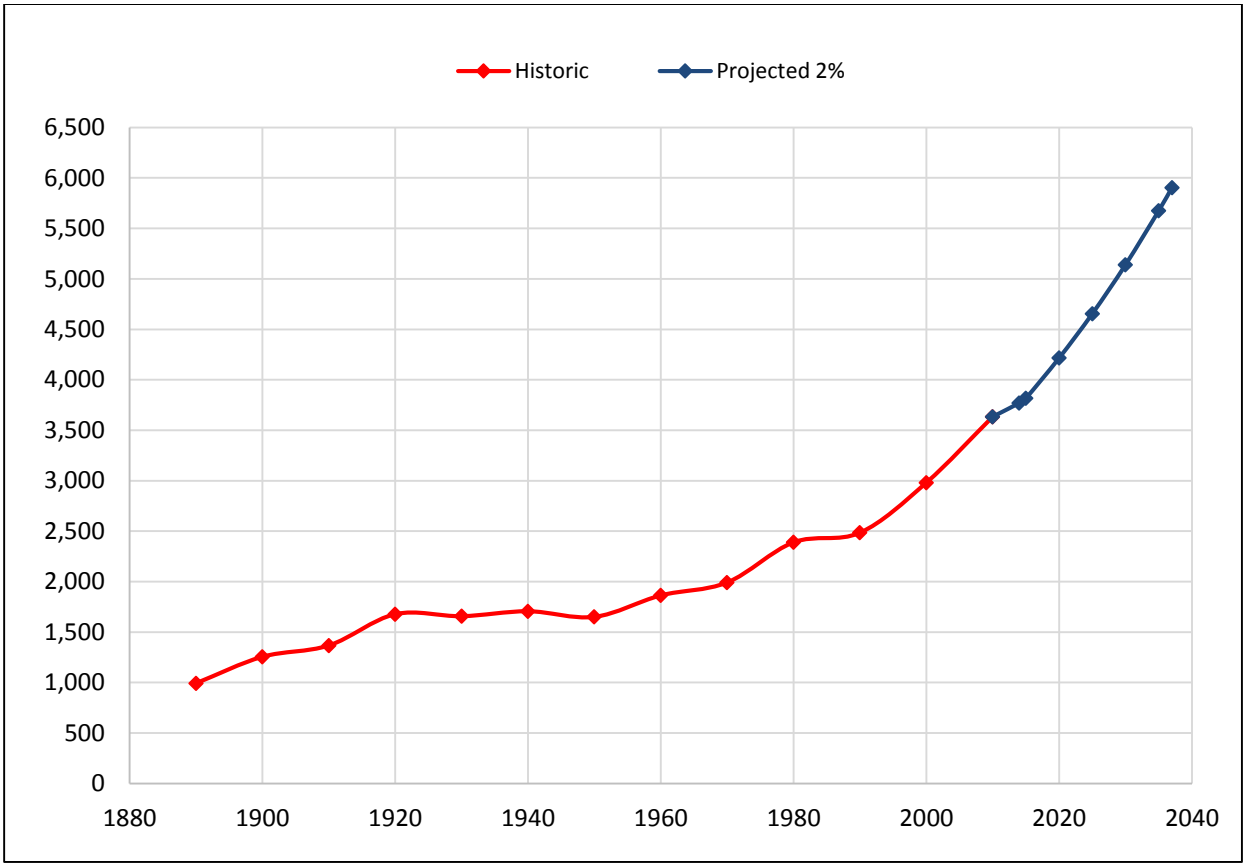
SCOPE OF WORK

The City of Dell Rapids selected Stockwell Engineers, Inc. to complete a wastewater treatment facility plan. The facility plan identified several treatment options and recommended the City build a Submerged Attached Growth Reactor (SAGR); however, the facility plan only included a cursory review of the mechanical treatment alternative. DGR Engineering (DGR) was hired to complete a more thorough review of mechanical treatment processes and compare it to the SAGR alternative. This project is a large capital investment and the City wanted to make sure they explored all options and have the necessary information to select the right long term solution. This report is a supplement to the wastewater treatment facility plan and provides information about different mechanical treatment alternatives.

COMMUNITY INFORMATION

POPULATION STATISTICS

The General and Financial Statistics sections of the Facility Plan will remain the same. Also, the Population Statistics will be utilized; however, the population projection will be extended to 2037. It is anticipated that it will be two years before the treatment system is operational. Therefore, the system will have 20 years of growth available after it is in operation. A graph showing the population projection of 5,904 for year 2037 is below.



Population Trend

EXISTING WASTEWATER SYSTEM

WASTEWATER FLOWS

The wastewater flows and wastewater treatment sections will be updated to include an average wet weather (AWW) flow. This flow rate will be used to compare the SAGR and mechanical treatment options. A review of the main lift station records since May 2010 determined the peak month was September of 2010. This month had an average daily flow of 591,100 gpd. The population trend indicates a growth of 2,087 people by the year 2037 with an average daily flow of 75 gallons per capita per day (gpcpd). The result is a design AWW flow of 750,000 gpd (591,100 + 2,087 * 75). The average influent to the wastewater facility since May of 2010 has been 220,000 gpd.

Historically, the influent flows to the treatment system have exceeded 750,000 on 12 days. DGR recommends the City keep one of their existing cells to shave flows over the design capacity of the mechanical treatment plant. Once the influent flows have returned to normal the operator can then route the wastewater from the existing cell to the head of the plant to be treated. Likewise, the SAGR system can have discharge structures installed between the cells to hold the peak flow back and prevent a large surge to the SAGR beds.

WASTEWATER TREATMENT ORGANIC LOADING

The wastewater treatment organic loading section will be updated to reflect the population projection of 5,904 in 2037. The recommended loading per person based on SD Design Criteria Chapter I.C.2 for BOD and TSS will be utilized. The design loadings for the SAGR and mechanical alternatives are shown in the following table.

Design Loading

	Year 2037
Population	5,904
BOD (lbs/person/day)	0.17
BOD (lbs/day)	1,004
TSS (lbs/person/day)	0.20
TSS (lbs/day)	1,181
TKN (lbs/person/day)	0.036
TKN (lbs/day)	213

DEVELOPMENT OF WASTEWATER ALTERNATIVES

The Development of Wastewater Alternatives Sections will remain the same except for the SAGR and Mechanical Treatment Alternatives.

The SD DENR was contacted about future permit requirements because it is necessary to consider future ammonia and nutrient limits for the treatment alternatives. These future limits will require different upgrades to meet the new permit limits. The following treatment alternatives have been split into two phases. The first phase will be designed to bring the system into compliance and meet ammonia limits the SD DENR plans to implement in 2017. The second phase will be for addressing nutrient removal requirements the SD DENR is expected to implement within the design life of the new treatment system. The SD DENR agreed that the following schedule is the best that can be foreseen at this time.

1. SD DENR implements lower ammonia limits into Water Quality Standards - 2017
2. Dell Rapids Surface Water Discharge Permit renews – October 2019
3. SD DENR implements nutrient limits into Water Quality Standards - 2020
4. Dell Rapids Surface Water Discharge Permit renews – October 2024
5. Construction required to be complete for nutrient removal – October 2028

TREATMENT ALTERNATIVE 5: MECHANICAL TREATMENT

As part of the mechanical treatment analysis DGR performed an in-depth evaluation of mechanical wastewater treatment options that the City could consider using to come in compliance with the current and future effluent limits. There are numerous mechanical wastewater treatment options for the City to analyze and with limited time, it is advised to narrow the alternatives down to a select number. The following is a summary of the alternatives that were evaluated.

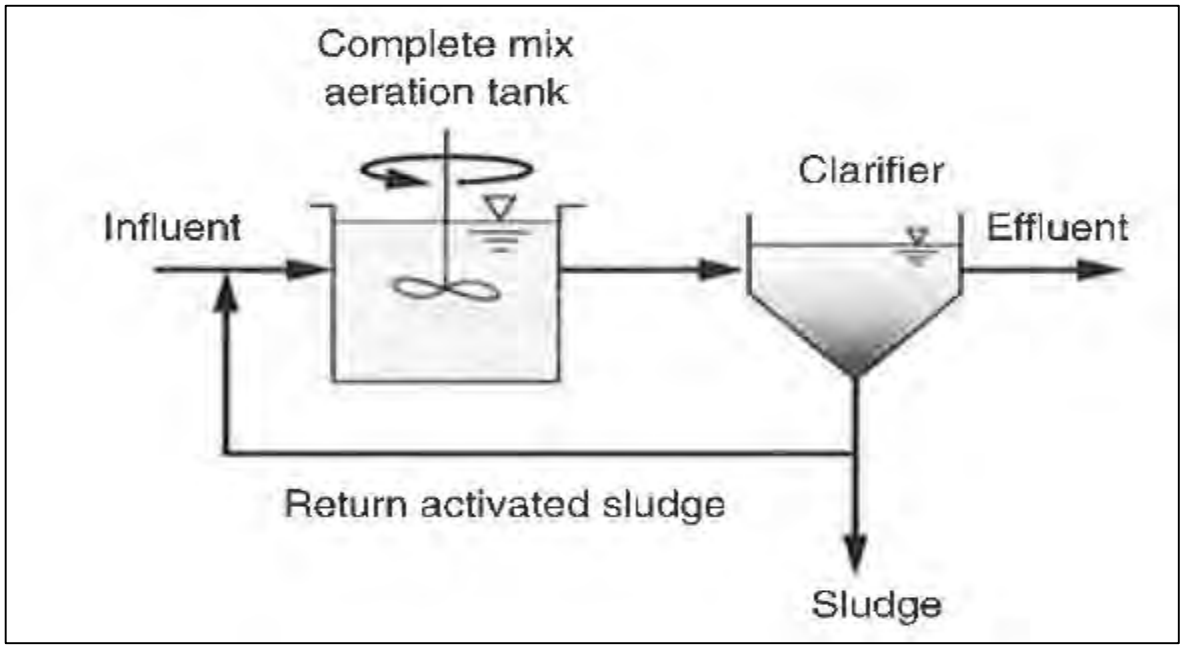
Conventional Activated Sludge

A conventional activated sludge treatment plant is a suspended growth biological treatment process which is routinely used for municipal and industrial wastewater treatment. This biological process consists of three (3) basic components: an aerated concrete reactor or tank in which microorganisms provide treatment, a clarifier for liquid-solids separation, and a recycle stream to transport settled solids from the bottom of the clarifier back to the aeration basin to maintain a microorganism concentration to promote adequate treatment. The aeration basin has a large concentration of microorganisms suspended by the aeration that serve as the medium for treatment. The microorganisms utilize oxygen to convert the organic matter present in the wastewater to simple end products or biomass.

Conventional activated sludge is primarily utilized for organic or Biochemical Oxygen Demand (BOD) removal. However, the aeration scheme in a conventional activated sludge system can be modified to incorporate aerobic and anaerobic zones to promote nitrification and denitrification for total nitrogen removal. Since it is difficult to get proper biological phosphorous removal in the same basin as biological nitrogen removal, an additional treatment step for total phosphorous removal would be required such as a precipitation basin or some version of filtration.

The wasted biomass creates a separate waste stream that requires treatment and storage prior to land application of the solids. The City may be able to utilize the existing lagoon cells for the sludge treatment and storage prior to land applications.

Recommendation: While the conventional activated process can provide the City with adequate treatment for current and future regulations, it does require significant operational control to maintain biomass concentrations in the aeration basin. In addition, two clarifiers would likely have to be added to achieve solids separation and to comply with SD DENR regulations. Based on the large footprint that this option would require and increased operational control, it is recommended that the conventional activated sludge process not be investigated further as an option for the City of Dell Rapids.



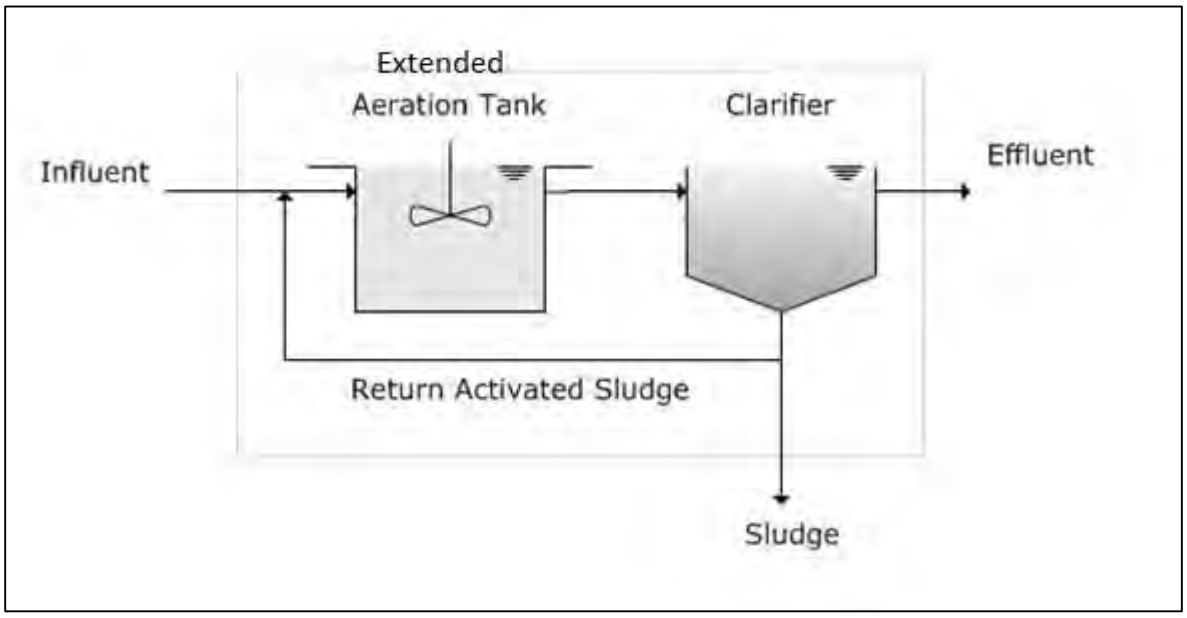
Conventional Activated Sludge

Extended Aeration

Extended aeration is a modification of the activated sludge process which provides biological treatment utilizing suspended growth treatment. This process treats wastewater in a similar way to the activated sludge process with some modification to the system operations to promote BOD and ammonia removal. As like the activated sludge process, there is an aerobic reactor, some sort of solid separation and a recycle stream for the bacteria to return to the aeration basin. Aeration must be used to provide the oxygen required to sustain aerobic biological treatment while promoting mixing in the aeration basin. The process utilizes a longer solids retention time to provide adequate treatment of BOD while allowing nitrification to occur to remove the ammonia present in the wastewater. An increased amount of sludge is consumed by the extended aeration process which limits the amount of excess waste sludge required to dispose of as compared to the conventional activated sludge process.

The extended aeration process could be modified to include anoxic zones within the aeration basin to promote biological nitrogen removal; however, an additional treatment step would be required for total phosphorous removal.

Recommendation: The extended aeration process can provide the City with adequate treatment for current regulations with provisions for operational changes to meet future discharge limits. This process is a modification of the activated sludge process so some operational control is required. In addition, two clarifiers would likely have to be added to achieve solids separation and to comply with SD DENR regulations. Similar to activated sludge, this process requires a large footprint and increased operational control, so it is recommended that the extended aeration process not be investigated further as an option for the City of Dell Rapids.



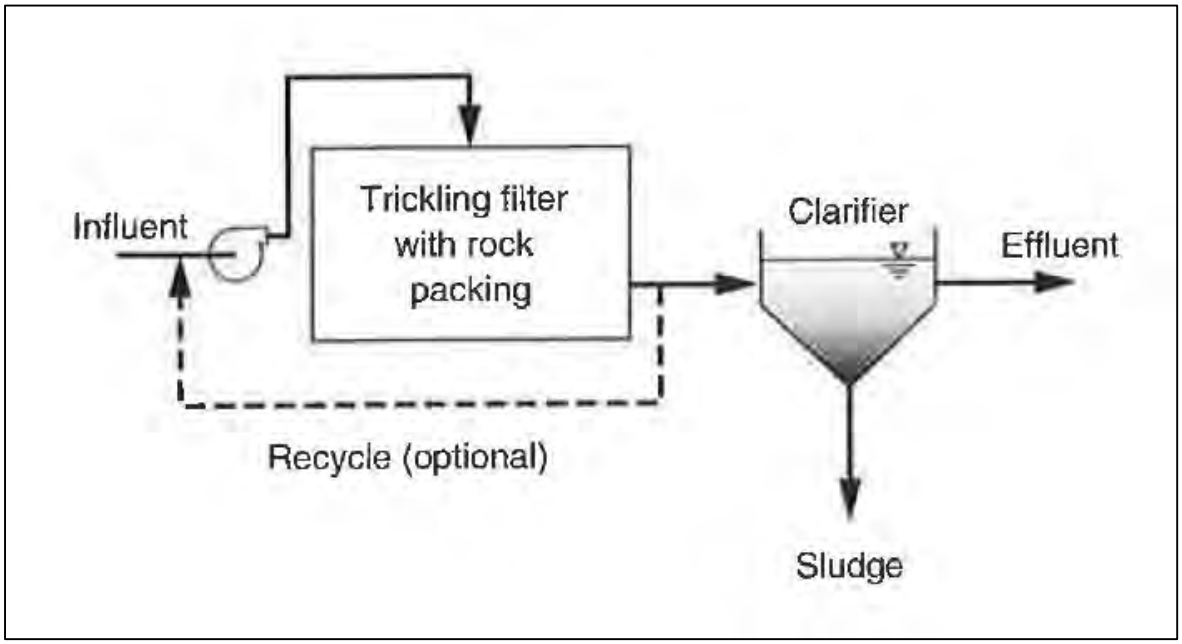
Extended Aeration

Trickling Filter/Rotating Biological Contactors

Trickling filter and rotating biological contactors (RBC) utilize a fixed film biological treatment process used to treat wastewater. The fixed film process utilizes microorganisms that grow and attach to a form of stationary media (rock or plastic) that are contained within a basin. The main goal of the media is to provide a surface in which the organisms can grow and allow for easy contact with both air and wastewater. The wastewater comes in contact with the attached biofilm where the organisms oxidize and consume the organic material present in the wastewater. As more and more organic material is consumed by the biomass, the biomass grows to a point where it can no longer remain attached to the media, thus sloughing off the media. The sloughed material will need to be collected in a subsequent clarifier.

Fixed film processes are primarily designed for organic removal, with some amount of ammonia removal and a limited ability to treat phosphorous. Additional treatment would be required to allow for nitrification and denitrification to occur which would remove total nitrogen from the wastewater. In addition, a clarifier must be added and room for future total nitrogen and total phosphorous removal must be provided.

Recommendation: Since the fixed film treatment process does not address the city's needs for ammonia removal or future nutrient limits and requires a large footprint, it is recommended that the fixed film alternative not be investigated further as a treatment option for the City.



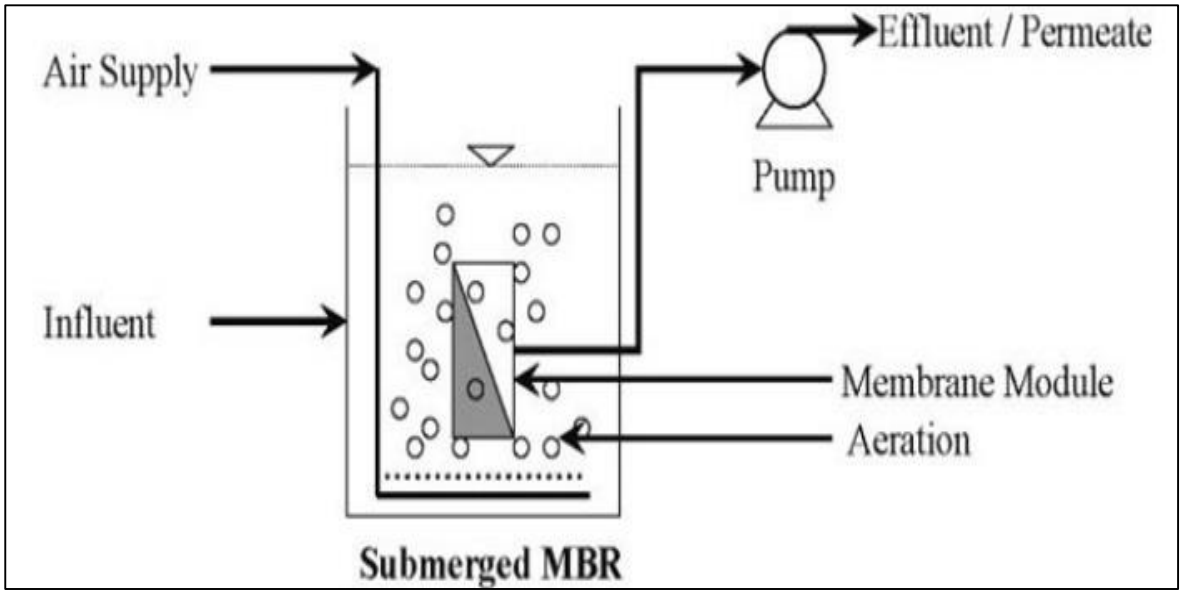
Fixed Film

Membrane Bioreactor

Membrane bioreactors (MBR) utilize a suspended growth biomass which is aerated in order to biologically treat wastewater, similar to conventional activated sludge. However, with an MBR, the solids separation is performed by a micro filter that is typically submerged in the aeration basin tank. The benefit of having the solid separation component located inside the aeration tank is that there is no need for additional clarification. The fact that there is no need for a subsequent clarifier allows MBRs to operate at a much higher biomass concentration. The higher biomass concentration allows the system to treat the wastewater with a lower hydraulic retention time thus requiring significantly less space for treatment. Just like conventional activated sludge, solids are continually wasted from the process due to biomass growth and need to be addressed through treatment and storage prior to land application. One of the existing ponds may be able to be utilized for the sludge treatment and storage prior to land application.

MBR's can be designed to treat organics and also promote nitrification and denitrification for total nitrogen removal. Additional treatment or chemical precipitation may need to be incorporated in the future to meet total phosphorous limits.

Recommendation: The MBR treatment option can provide the City with adequate treatment of organics and nitrogen to meet existing and future limits. While increased operation control would be required, this option appears to be a viable option for the City due to the small footprint size of the treatment facility required. However, discussions with suppliers indicated the design flows for Dell Rapids are below the desired amount to make the MBR alternative cost effective.



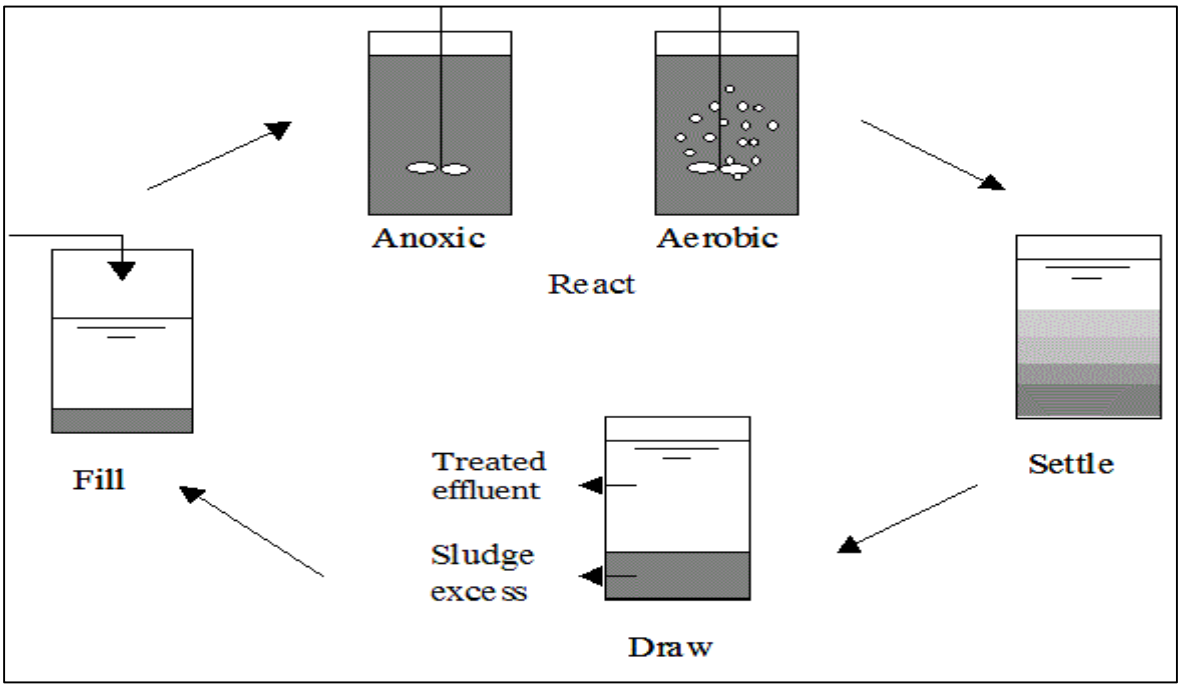
Membrane Bioreactor

Sequencing Batch Reactor

A sequencing batch reactor (SBR) is a suspended growth treatment process that provides treatment in a similar way to the activated sludge process. However, SBR's are designed to operate in batch mode where treatment and solids separation all occur in the same basin with no need for subsequent clarification. A SBR carries out the treatment steps of fill, react (aeration/anoxic), settle, decant, and sludge removal utilizing a time sequence for each step rather than a continuous flow system like activated sludge. In this instance, at least two SBR tanks would be required to ensure that one basin is always receiving flow while the other is in its treatment cycle. The SBR process also creates biomass during the treatment process, meaning that the accumulation of sludge needs to be treated and stored prior to land application. Many SBR manufacturers allow some space for the sludge treatment and storage within the SBR structure. Otherwise the existing lagoons can be utilized for sludge treatment and storage.

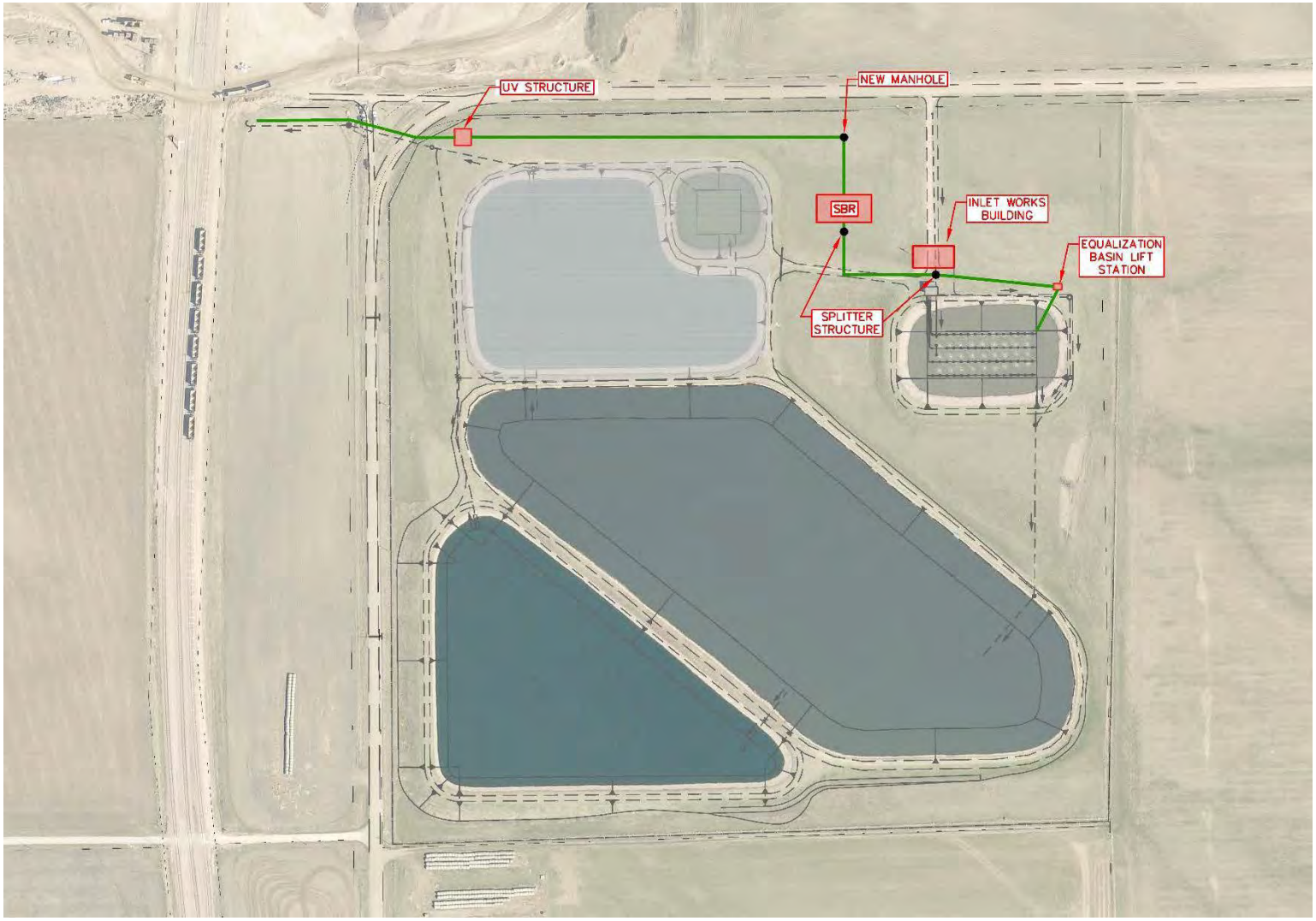
SBRs are able to be designed with cycle times that can be modified for organic, total nitrogen and total phosphorous removal all in one basin. Additional chemical feed in the future may be required to ensure the total phosphorous limits can be met.

Recommendation: The SBR system is a proven compact system that is able to meet the City's current and future wastewater treatment needs. DGR performed further investigation into this technology to get budgetary quotes from suppliers to help compare against alternative treatment technologies.



Sequencing Batch Reactor

The SBR system has been split into two phases. The first phase will be designed to bring the system into compliance and meet ammonia limits the SD DENR plans to implement in 2017. The second phase will be for addressing nutrient removal requirements the SD DENR is expected to implement within the design life of the new treatment system. The following pages show the proposed layout and cost estimate for each phase based on the budgetary quotes that were received.



SBR - Phase 1 Improvements

Cost Estimate for SBR – Phase 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$388,000.00	$388,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Gravel Surfacing	300	TON	$15.00	$4,500.00
5	24" PVC Gravity Sewer	1,000	FT	$90.00	$90,000.00
6	16" PVC Gravity Sewer	2,000	FT	$70.00	$140,000.00
7	12" PVC Gravity Sewer	300	FT	$50.00	$15,000.00
8	24" Gate Valve & Box	1	EA	$13,000.00	$13,000.00
9	16" Gate Valve & Box	1	EA	$7,000.00	$7,000.00
10	12" Gate Valve & Box	1	EA	$4,000.00	$4,000.00
11	24" Sanitary Bedding Material	1,000	FT	$10.00	$10,000.00
12	16" Sanitary Bedding Material	2,000	FT	$7.00	$14,000.00
13	12" Sanitary Bedding Material	300	FT	$5.00	$1,500.00
14	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
15	Connect to Existing Outfall Line	1	EA	$2,500.00	$2,500.00
16	Sanitary Manhole	10	EA	$3,500.00	$35,000.00
17	Splitter Structure	1	EA	$30,000.00	$30,000.00
18	Pre-Treatment	1	LS	$1,010,250.00	$1,010,250.00
19	Sequencing Batch Reactor	1	LS	$1,624,375.00	$1,624,375.00
20	UV Disinfection	1	LS	$510,750.00	$510,750.00
21	SCADA System	1	LS	$75,000.00	$75,000.00
22	Electrical Service	1	LS	$35,000.00	$35,000.00
23	Standby Generator & Tank	1	LS	$90,000.00	$90,000.00
24	EQ Basin Lift Station	1	LS	$120,000.00	$120,000.00
25	Salvage & Place Topsoil	1,500	CY	$3.00	$4,500.00
26	Seeding, Fertilizing & Mulching	13,000	SY	$1.50	$19,500.00
				Subtotal	$4,266,375.00
				Contingencies (15%)	$640,625.00
				Total Estimated Construction Costs	**$4,907,000.00**
				ENGINEERING	**$654,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$197,000.00**
				TOTAL ESTIMATED PROJECT COST	**$5,758,000.00**

EUAC for SBR – Phase 1

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$388,000	$0	$0	$388,000
Clearing	$5,000	$0	$0	$5,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Gravel Surfacing	$4,500	$0	$0	$4,500
24" PVC Gravity Sewer	$90,000	$54,000	$29,898	$60,102
16" PVC Gravity Sewer	$140,000	$84,000	$46,509	$93,491
12" PVC Gravity Sewer	$15,000	$9,000	$4,983	$10,017
24" Gate Valve & Box	$13,000	$7,800	$4,319	$8,681
16" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
12" Gate Valve & Box	$4,000	$2,400	$1,329	$2,671
24" Sanitary Bedding Material	$10,000	$0	$0	$10,000
16" Sanitary Bedding Material	$14,000	$0	$0	$14,000
12" Sanitary Bedding Material	$1,500	$0	$0	$1,500
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Outfall Line	$2,500	$0	$0	$2,500
Sanitary Manhole	$35,000	$21,000	$11,627	$23,373
Splitter Structure	$30,000	$18,000	$9,966	$20,034
Pre-Treatment	$1,010,250	$606,150	$335,611	$674,639
Sequencing Batch Reactor	$1,624,375	$974,625	$539,626	$1,084,749
UV Disinfection	$510,750	$306,450	$169,674	$341,076
SCADA System	$75,000	$45,000	$24,915	$50,085
Electrical Service	$35,000	$21,000	$11,627	$23,373
Standby Generator & Tank	$90,000	$54,000	$29,898	$60,102
EQ Basin Lift Station	$120,000	$72,000	$39,865	$80,135
Salvage & Place Topsoil	$4,500	$0	$0	$4,500
Seeding, Fertilizing & Mulching	$19,500	$0	$0	$19,500
Remaining Capital Costs	$1,491,625	$0	$0	$1,491,625
Total Construction Cost	**$5,758,000**	**$2,279,625**	**$1,262,173**	**$4,495,827**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$4,000			$59,510
Supplies	$10,000			$148,775
Utilities	$45,000			$669,486
Additional Wastewater Sampling	$40,000			$595,099
Sludge Disposal	$29,000			$431,447
Labor (new employee half time)	$50,000			$743,874
Total Annual Cost	**$178,000**			**$2,648,191**
			Total Net Present Worth	**$7,144,017**
			EUAC	**$480,190**

SBR – Phase 2 Improvements

Cost Estimate for SBR – Phase 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$58,000.00	$58,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	50	TON	$15.00	$750.00
4	Remove Existing Dikes	50,000	CY	$4.00	$200,000.00
5	Sludge Removal	6,800	CY	$30.00	$204,000.00
6	Chemical Feed Equipment	1	LS	$75,000.00	$75,000.00
7	Chemcial Feed Building	400	SF	$150.00	$60,000.00
8	Electrical Service	1	LS	$2,000.00	$2,000.00
9	Building Electrical	1	LS	$15,000.00	$15,000.00
10	Building HVAC	1	LS	$15,000.00	$15,000.00
11	Seeding, Fertilizing & Mulching	1,000	SY	$1.50	$1,500.00
				Subtotal	$636,250.00
				Contingencies (15%)	$95,750.00
				Total Estimated Construction Costs	**$732,000.00**
				ENGINEERING	**$127,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$30,000.00**
				TOTAL ESTIMATED PROJECT COST	**$889,000.00**

EUAC for SBR – Phase 2

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$58,000	$0	$0	$58,000
Clearing	$5,000	$0	$0	$5,000
Gravel Surfacing	$750	$0	$0	$750
Remove Existing Dikes	$200,000	$0	$0	$200,000
Sludge Removal	$204,000	$0	$0	$204,000
Chemical Feed Equipment	$75,000	$45,000	$24,915	$50,085
Chemcial Feed Building	$60,000	$36,000	$19,932	$40,068
Electrical Service	$2,000	$1,200	$664	$1,336
Building Electrical	$15,000	$9,000	$4,983	$10,017
Building HVAC	$15,000	$9,000	$4,983	$10,017
Seeding, Fertilizing & Mulching	$1,500	$0	$0	$1,500
Remaining Capital Costs	$252,750	$0	$0	$252,750
Total Construction Cost	**$889,000**	**$100,200**	**$55,478**	**$833,522**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$5,000			$74,387
Supplies & Chemicals	$50,000			$743,874
Utilities	$10,000			$148,775
Additional Wastewater Sampling	$10,000			$148,775
Alum Sludge Removal	$12,000			$178,530
Total Annual Cost	**$87,000**			**$1,294,340**
			Total Net Present Worth	**$2,127,862**
			EUAC	**$143,026**

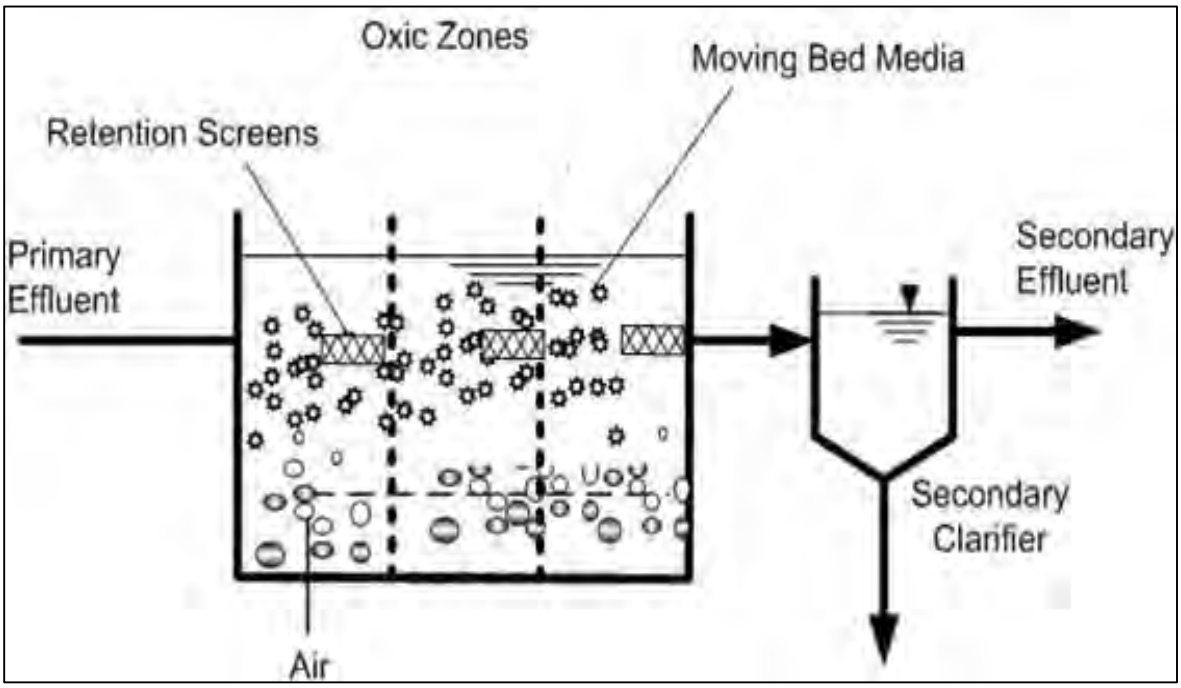
Moving Bed Bioreactor

Moving bed bioreactor (MBBR) incorporates fixed film and suspended growth treatment processes to biologically treat wastewater by the circulation of suspended packing media with large surface area in an aeration basin. Biofilm will grow on the suspended plastic media, thus providing a surface for the microorganisms to properly treat wastewater. Since the media has significantly more surface area than suspended biomass, the MBBR technology can properly treat wastewater in a much smaller footprint that conventional activated sludge.

MBBR's are fully capable of removing organics and can be designed to incorporate aerobic and anaerobic treatment sections within the basin to promote nitrification and denitrification for total nitrogen removal. In addition, since the treatment process is performed with plastic media, there is no need to recycle the biomass concentration in the aeration basin.

There are many subsets of the MBBR technology that incorporate various aeration alternatives. There may be a need to address the small amount of solids that slough off the media during back wash cycles, however one of the existing lagoon cells could act as storage and treatment of the accumulated solids.

Recommendation: The MBBR technology is an emerging treatment alternative that would give the City the capability to meet current and future limits within a small footprint. DGR performed further investigation into this technology to get budgetary quotes from suppliers to help compare against alternative treatment technologies.



Moving Bed Bioreactor

The MBBR system has been split into two phases. The first phase will be designed to bring the system into compliance and meet ammonia limits the SD DENR plans to implement in 2017. The second phase will be for addressing nutrient removal requirements the SD DENR is expected to implement within the design life of the new treatment system. The following pages show the proposed layout and cost estimate for each phase based on the budgetary quotes that were received.

MBBR - Phase 1 Improvements

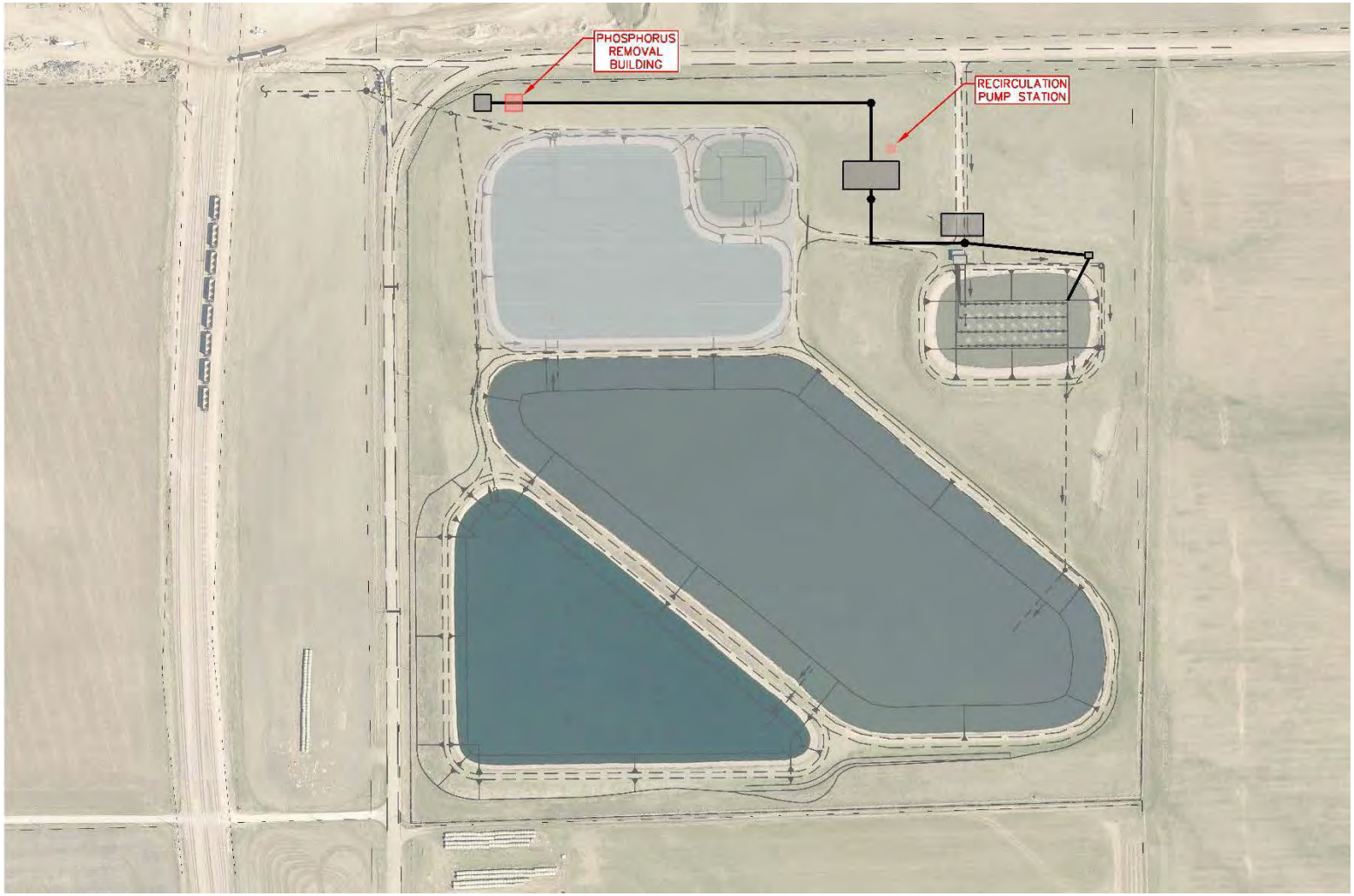
Cost Estimate for MBBR – Phase 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$464,000.00	$464,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Gravel Surfacing	300	TON	$15.00	$4,500.00
5	Remove Existing Dikes	50,000	CY	$4.00	$200,000.00
6	12" PVC Gravity Sewer	1,000	FT	$45.00	$45,000.00
7	12" Gate Valve & Box	2	EA	$3,500.00	$7,000.00
8	12" Sanitary Bedding Material	1,000	FT	$5.00	$5,000.00
9	Connect to Existing Force Main	1	EA	$2,500.00	$2,500.00
10	Connect to Existing Outfall Line	1	EA	$2,500.00	$2,500.00
11	Sanitary Manhole	4	EA	$3,500.00	$14,000.00
12	Splitter Structure	1	EA	$30,000.00	$30,000.00
13	Pre-Treatment	1	LS	$1,101,750.00	$1,101,750.00
14	Moving Bed Bioreactor	1	LS	$2,459,250.00	$2,459,250.00
15	UV Disinfection	1	LS	$395,000.00	$395,000.00
16	SCADA System	1	LS	$75,000.00	$75,000.00
17	Electrical Service	1	LS	$35,000.00	$35,000.00
18	Standby Generator & Tank	1	LS	$90,000.00	$90,000.00
19	EQ Basin Lift Station	1	LS	$120,000.00	$120,000.00
20	Salvage & Place Topsoil	2,000	CY	$3.00	$6,000.00
21	Seeding, Fertilizing & Mulching	13,000	SY	$1.50	$19,500.00
				Subtotal	$5,096,000.00
				Contingencies (15%)	$765,000.00
				Total Estimated Construction Costs	**$5,861,000.00**
				ENGINEERING	**$774,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$235,000.00**
				TOTAL ESTIMATED PROJECT COST	**$6,870,000.00**

EUAC for MBBR – Phase 1

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$464,000	$0	$0	$464,000
Clearing	$5,000	$0	$0	$5,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Gravel Surfacing	$4,500	$0	$0	$4,500
Remove Existing Dikes	$200,000	$0	$0	$200,000
12" PVC Gravity Sewer	$45,000	$27,000	$14,949	$30,051
12" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
12" Sanitary Bedding Material	$5,000	$0	$0	$5,000
Connect to Existing Force Main	$2,500	$0	$0	$2,500
Connect to Existing Outfall Line	$2,500	$0	$0	$2,500
Sanitary Manhole	$14,000	$8,400	$4,651	$9,349
Splitter Structure	$30,000	$18,000	$9,966	$20,034
Pre-Treatment	$1,101,750	$661,050	$366,007	$735,743
Moving Bed Bioreactor	$2,459,250	$1,475,550	$816,976	$1,642,274
UV Disinfection	$395,000	$237,000	$131,221	$263,779
SCADA System	$75,000	$45,000	$24,915	$50,085
Electrical Service	$35,000	$21,000	$11,627	$23,373
Standby Generator & Tank	$90,000	$54,000	$29,898	$60,102
EQ Basin Lift Station	$120,000	$72,000	$39,865	$80,135
Salvage & Place Topsoil	$6,000	$0	$0	$6,000
Seeding, Fertilizing & Mulching	$19,500	$0	$0	$19,500
Remaining Capital Costs	$1,774,000	$0	$0	$1,774,000
Total Construction Cost	**$6,870,000**	**$2,623,200**	**$1,452,402**	**$5,417,598**

Annual Operation and Maintenance Cost Description	Annual Cost	Net Present Worth
Equipment	$4,000	$59,510
Supplies	$10,000	$148,775
Utilities	$45,000	$669,486
Additional Wastewater Sampling	$40,000	$595,099
Sludge Disposal	$29,000	$431,447
Labor (new employee half time)	$50,000	$743,874
Total Annual Cost	**$178,000**	**$2,648,191**
	Total Net Present Worth	**$8,065,788**
	EUAC	**$542,148**



MBBR – Phase 2 Improvements

Cost Estimate for MBBR – Phase 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$146,000.00	$146,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	300	TON	$15.00	$4,500.00
4	Remove Existing Dikes	50,000	CY	$4.00	$200,000.00
5	Sludge Removal	6,800	CY	$30.00	$204,000.00
6	Phosphorous Removal Eq	1	EA	$650,000.00	$650,000.00
7	Recirculation Pumps and More Cap	1	LS	$300,000.00	$300,000.00
8	Electrical Service	1	LS	$35,000.00	$35,000.00
9	Building Electrical	1	LS	$20,000.00	$20,000.00
10	Building HVAC	1	LS	$20,000.00	$20,000.00
11	Seeding, Fertilizing & Mulching	13,000	SY	$1.50	$19,500.00
				Subtotal	$1,604,000.00
				Contingencies (15%)	$241,000.00
				Total Estimated Construction Costs	**$1,845,000.00**
				ENGINEERING	**$268,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$74,000.00**
				TOTAL ESTIMATED PROJECT COST	**$2,187,000.00**

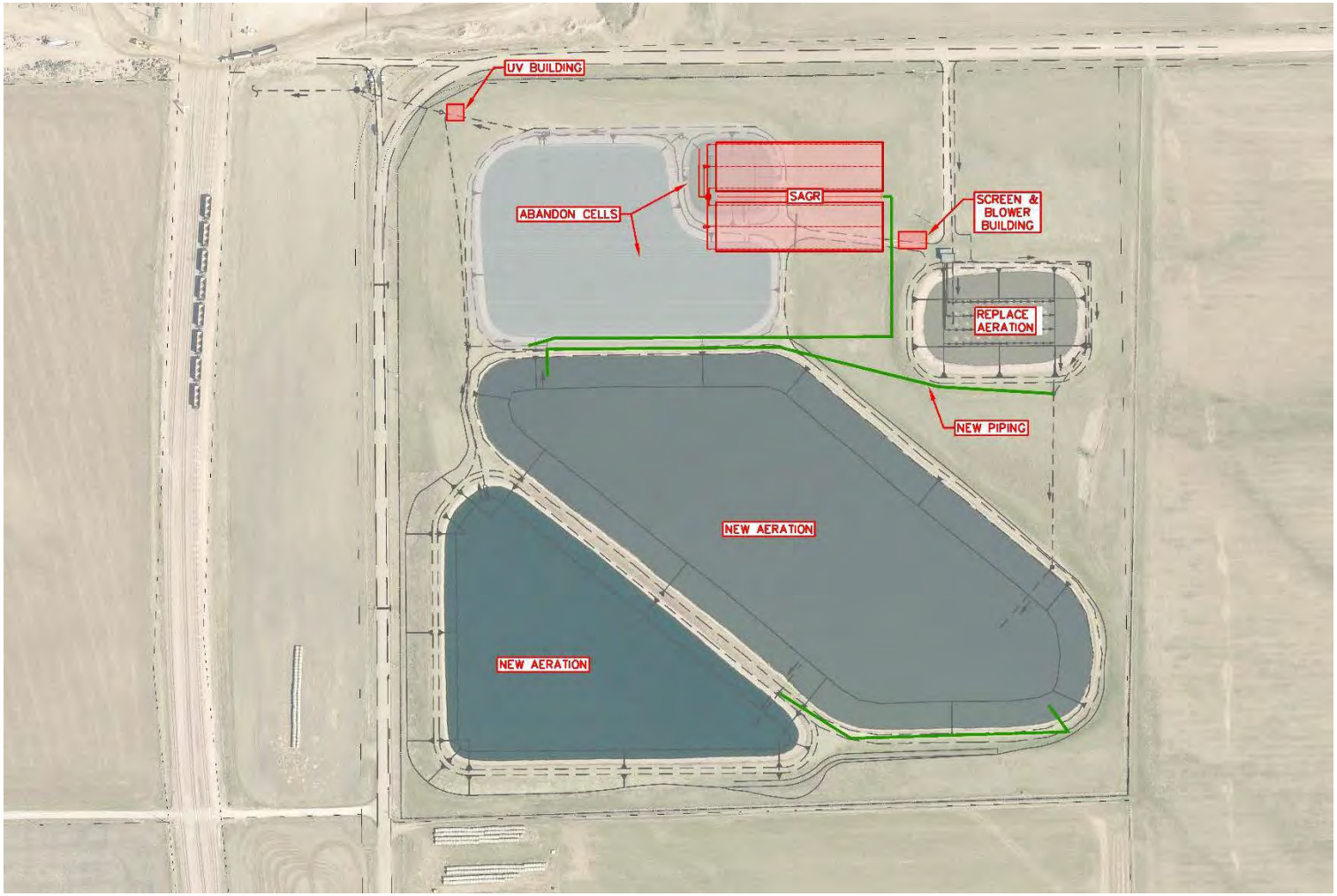
EUAC for MBBR – Phase 2

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$146,000	$0	$0	$146,000
Clearing	$5,000	$0	$0	$5,000
Gravel Surfacing	$4,500	$0	$0	$4,500
Remove Existing Dikes	$200,000	$0	$0	$200,000
Sludge Removal	$204,000	$0	$0	$204,000
Phosphorous Removal Eq	$650,000	$390,000	$215,934	$434,066
Recirculation Pumps and More Cap	$300,000	$180,000	$99,662	$200,338
Electrical Service	$35,000	$21,000	$11,627	$23,373
Building Electrical	$20,000	$12,000	$6,644	$13,356
Building HVAC	$20,000	$12,000	$6,644	$13,356
Seeding, Fertilizing & Mulching	$19,500	$0	$0	$19,500
Remaining Capital Costs	$583,000	$0	$0	$583,000
Total Construction Cost	**$2,187,000**	**$615,000**	**$340,511**	**$1,846,489**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$5,000			$74,387
Supplies	$50,000			$743,874
Utilities	$10,000			$148,775
Additional Wastewater Sampling	$10,000			$148,775
Alum Sludge Removal	$12,000			$178,530
Total Annual Cost	**$87,000**			**$1,294,340**
			Total Net Present Worth	**$3,140,830**
			EUAC	**$211,113**

TREATMENT ALTERNATIVE 7: SAGR/ANSAGR SYSTEM (WITH NUTRIENT REMOVAL)

This alternative has been updated to reflect the revised design flows and loading that was discussed in the previous sections. The revised cost estimate and equivalent uniform annual cost are shown in the following tables. The proposed layout for this alternative is shown in the following figure.

The SAGR system has been split into two phases. The first phase will be designed to bring the system into compliance and meet ammonia limits the SD DENR plans to implement in 2017. The second phase will be for addressing nutrient removal requirements the SD DENR is expected to implement within the design life of the new treatment system. The following pages show the proposed layout and cost estimate for each phase based on the budgetary quotes that were received.



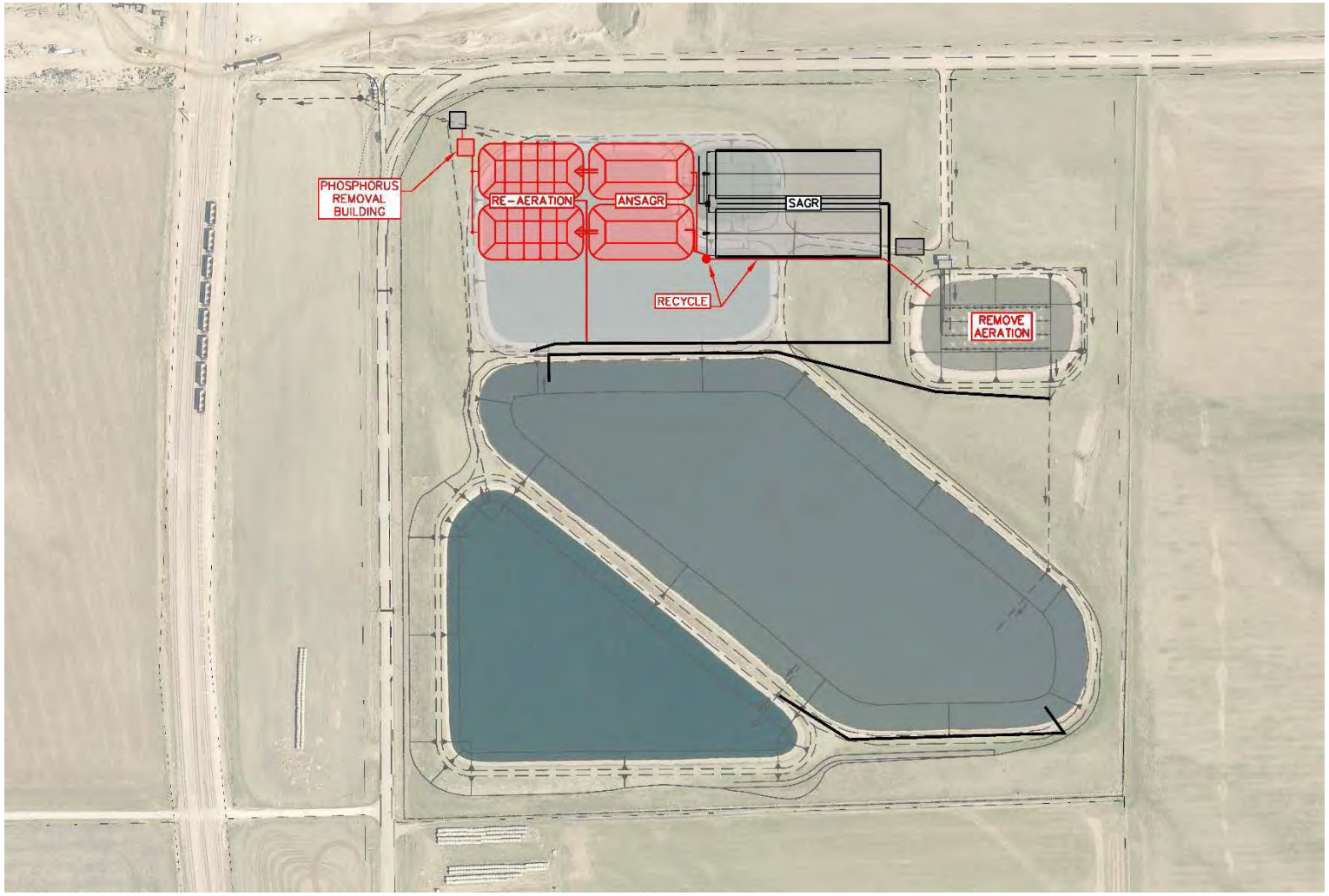
SAGR - Phase 1 Improvements

Cost Estimate for SAGR – Phase 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$336,000.00	$336,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Remove Blower Bld & Equipment	1	LS	$15,000.00	$15,000.00
4	Transfer Pumping	1	LS	$10,000.00	$10,000.00
5	Gravel Surfacing	200	TON	$15.00	$3,000.00
6	Unclassified Excavation	19,200	CY	$3.00	$57,600.00
7	Salvage & Place Topsoil	2,600	CY	$5.00	$13,000.00
8	12" DIP Piping	130	FT	$75.00	$9,750.00
9	12" Gate Valve & Box	2	EA	$3,500.00	$7,000.00
10	Concrete Water Stop	4	EA	$500.00	$2,000.00
11	Pond Inlet Structure	2	EA	$3,000.00	$6,000.00
12	Pond Outlet Structure	1	EA	$4,000.00	$4,000.00
13	12" PVC Gravity Sewer	2,500	FT	$45.00	$112,500.00
14	12" Sanitary Bedding Material	2,500	FT	$5.00	$12,500.00
15	Connect to Existing Piping	3	EA	$2,500.00	$7,500.00
16	Screening Equipment	1	LS	$126,000.00	$126,000.00
17	Inlet Works/Office/Blower Bld	1	LS	$270,000.00	$270,000.00
18	Control & SCADA System	1	LS	$50,000.00	$50,000.00
19	Electrical Service	1	LS	$25,000.00	$25,000.00
20	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
21	Aeration & SAGR System	1	LS	$1,426,000.00	$1,426,000.00
22	Sampler	2	EA	$8,000.00	$16,000.00
23	Water Service	1	LS	$3,500.00	$3,500.00
24	Clean Graded Rock	29,400	TON	$21.00	$617,400.00
25	Mulch Insulation	2,600	CY	$20.00	$52,000.00
26	Geotextile Fabric	14,700	SY	$2.50	$36,750.00
27	HDPE Liner	74,300	SF	$1.60	$118,880.00
28	SAGR Bed Walls	1,600	LF	$30.00	$48,000.00
29	Influent Flow Splitter Structure	1	EA	$15,000.00	$15,000.00
30	Piping, Fittings, Valves	1	LS	$45,000.00	$45,000.00
31	Effluent Level Control MH	2	EA	$5,000.00	$10,000.00
32	Aeration Site Piping	2,700	LF	$20.00	$54,000.00
33	Concrete Anchor Posts	32	EA	$200.00	$6,400.00
34	UV Disinfection System	1	LS	$71,000.00	$71,000.00
35	UV Building	1	LS	$30,000.00	$30,000.00
36	Seeding, Fertilizing & Mulching	15,300	SY	$1.50	$22,950.00
				Subtotal	$3,694,730.00
				Contingencies (15%)	$554,270.00
				Total Estimated Construction Costs	**$4,249,000.00**
				ENGINEERING	**$571,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$170,000.00**
				TOTAL ESTIMATED PROJECT COST	**$4,990,000.00**

EUAC for SAGR – Phase 1

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$336,000	$0	$0	$336,000
Clearing	$5,000	$0	$0	$5,000
Remove Blower Bld & Equipment	$15,000	$0	$0	$15,000
Transfer Pumping	$10,000	$0	$0	$10,000
Gravel Surfacing	$3,000	$0	$0	$3,000
Unclassified Excavation	$57,600	$0	$0	$57,600
Salvage & Place Topsoil	$13,000	$0	$0	$13,000
12" DIP Piping	$9,750	$5,850	$3,239	$6,511
12" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
Concrete Water Stop	$2,000	$1,200	$664	$1,336
Pond Inlet Structure	$6,000	$3,600	$1,993	$4,007
Pond Outlet Structure	$4,000	$2,400	$1,329	$2,671
12" PVC Gravity Sewer	$112,500	$67,500	$37,373	$75,127
12" Sanitary Bedding Material	$12,500	$0	$0	$12,500
Connect to Existing Piping	$7,500	$0	$0	$7,500
Screening Equipment	$126,000	$75,600	$41,858	$84,142
Inlet Works/Office/Blower Bld	$270,000	$162,000	$89,695	$180,305
Control & SCADA System	$50,000	$30,000	$16,610	$33,390
Electrical Service	$25,000	$15,000	$8,305	$16,695
Standby Generator & Tank	$50,000	$30,000	$16,610	$33,390
Aeration & SAGR System	$1,426,000	$855,600	$473,725	$952,275
Sampler	$16,000	$0	$0	$16,000
Water Service	$3,500	$2,100	$1,163	$2,337
Clean Graded Rock	$617,400	$370,440	$205,104	$412,296
Mulch Insulation	$52,000	$0	$0	$52,000
Geotextile Fabric	$36,750	$0	$0	$36,750
HDPE Liner	$118,880	$71,328	$39,493	$79,387
SAGR Bed Walls	$48,000	$0	$0	$48,000
Influent Flow Splitter Structure	$15,000	$9,000	$4,983	$10,017
Piping, Fittings, Valves	$45,000	$27,000	$14,949	$30,051
Effluent Level Control MH	$10,000	$6,000	$3,322	$6,678
Aeration Site Piping	$54,000	$32,400	$17,939	$36,061
Concrete Anchor Posts	$6,400	$3,840	$2,126	$4,274
UV Disinfection System	$71,000	$42,600	$23,587	$47,413
UV Building	$30,000	$18,000	$9,966	$20,034
Seeding, Fertilizing & Mulching	$22,950	$0	$0	$22,950
Remaining Capital Costs	$1,295,270	$0	$0	$1,295,270
Total Construction Cost	**$4,990,000**	**$1,835,658**	**$1,016,359**	**$3,973,641**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Aeration Blowers	$31,000			$461,202
SAGR Blowers	$26,000			$386,814
Diffuser Membrane Replacement	$5,000			$74,387
Additional Wastewater Sampling	$40,000			$595,099
Labor (new employee quarter time)	$25,000			$371,937
Total Annual Cost	**$127,000**			**$1,889,439**
			Total Net Present Worth	**$5,863,080**
			EUAC	**$394,091**



SAGR - Phase 2 Improvements

Cost Estimate for SAGR – Phase 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$200,000.00	$200,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	300	TON	$15.00	$4,500.00
4	Unclassified Excavation	18,000	CY	$3.00	$54,000.00
5	Salvage & Place Topsoil	1,200	CY	$5.00	$6,000.00
6	Scarify & Recompact Liner	8,000	SY	$1.00	$8,000.00
7	Sludge Removal	6,800	CY	$30.00	$204,000.00
8	12" DIP Piping	250	FT	$75.00	$18,750.00
9	12" Gate Valve & Box	2	EA	$3,500.00	$7,000.00
10	Concrete Water Stop	4	EA	$500.00	$2,000.00
11	Pond Inlet Structure	4	EA	$3,000.00	$12,000.00
12	Pond Outlet Structure	4	EA	$4,000.00	$16,000.00
13	Pond Depth Indicators	4	EA	$4,000.00	$16,000.00
14	12" PVC Gravity Sewer	300	FT	$45.00	$13,500.00
15	12" Sanitary Bedding Material	300	FT	$5.00	$1,500.00
16	Connect to Existing Piping	3	EA	$2,500.00	$7,500.00
17	Control System Expansion	1	LS	$25,000.00	$25,000.00
18	ANSAGR/Re-Aeration Phosphorus Equip	1	LS	$1,255,000.00	$1,255,000.00
19	Phosphorus Removal Building	1	LS	$158,000.00	$158,000.00
20	Recirculation Lift Station	1	LS	$120,000.00	$120,000.00
21	Recirculation Force Main	400	FT	$25.00	$10,000.00
22	Piping, Fittings, Valves	1	LS	$22,500.00	$22,500.00
23	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
24	Aeration Site Piping	400	LF	$20.00	$8,000.00
25	Seeding, Fertilizing & Mulching	6,800	SY	$1.50	$10,200.00
				Subtotal	$2,199,450.00
				Contingencies (15%)	$330,550.00
				Total Estimated Construction Costs	**$2,530,000.00**
				ENGINEERING	**$354,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$102,000.00**
				TOTAL ESTIMATED PROJECT COST	**$2,986,000.00**

EUAC for SAGR – Phase 2

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$200,000	$0	$0	$200,000
Clearing	$5,000	$0	$0	$5,000
Gravel Surfacing	$4,500	$0	$0	$4,500
Unclassified Excavation	$54,000	$0	$0	$54,000
Salvage & Place Topsoil	$6,000	$0	$0	$6,000
Scarify & Recompact Liner	$8,000	$0	$0	$8,000
Sludge Removal	$204,000	$0	$0	$204,000
12" DIP Piping	$18,750	$11,250	$6,229	$12,521
12" Gate Valve & Box	$7,000	$4,200	$2,325	$4,675
Concrete Water Stop	$2,000	$1,200	$664	$1,336
Pond Inlet Structure	$12,000	$7,200	$3,986	$8,014
Pond Outlet Structure	$16,000	$9,600	$5,315	$10,685
Pond Depth Indicators	$16,000	$9,600	$5,315	$10,685
12" PVC Gravity Sewer	$13,500	$8,100	$4,485	$9,015
12" Sanitary Bedding Material	$1,500	$0	$0	$1,500
Connect to Existing Piping	$7,500	$0	$0	$7,500
Control System Expansion	$25,000	$15,000	$8,305	$16,695
ANSAGR/Re-Aeration Phosphorus Equip	$1,255,000	$753,000	$416,918	$838,082
Phosphorus Removal Building	$158,000	$94,800	$52,488	$105,512
Recirculation Lift Station	$120,000	$72,000	$39,865	$80,135
Recirculation Force Main	$10,000	$6,000	$3,322	$6,678
Piping, Fittings, Valves	$22,500	$13,500	$7,475	$15,025
Effluent Level Control MH	$15,000	$9,000	$4,983	$10,017
Aeration Site Piping	$8,000	$4,800	$2,658	$5,342
Seeding, Fertilizing & Mulching	$10,200	$0	$0	$10,200
Remaining Capital Costs	$786,550	$0	$0	$786,550
Total Construction Cost	**$2,986,000**	**$1,019,250**	**$564,334**	**$2,421,666**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Disk Filter Replacement	$6,000			$89,265
Carbon	$83,000			$1,234,830
Alum	$29,000			$431,447
Alum Sludge Removal	$12,000			$178,530
Additional Wastewater Sampling	$10,000			$148,775
Total Annual Cost	**$140,000**			**$2,082,846**
			Total Net Present Worth	**$4,504,512**
			EUAC	**$302,774**

IMPLEMENTATION OF ALTERNATIVES

WASTEWATER TREATMENT

The Wastewater Treatment Section shall be updated to include the following information. The SD DENR requires that the total project costs and present worth or equivalent annual costs be compared when selecting the best alternative. The following tables show the total project costs and present worth costs for each phase.

Total Project Cost for Wastewater Treatment Alternatives

Treatment Alternative	Total Project Cost		
	Phase 1	Phase 2	Total
5: Mechanical Treatment - SBR	$5,758,000	$889,000	$6,647,000
5: Mechanical Treatment - MBBR	$6,870,000	$2,187,000	$9,057,000
7: SAGR/ANSAGR with Nutrient Removal	$4,990,000	$2,986,000	$7,976,000

Present Worth Cost for Wastewater Treatment Alternatives

Treatment Alternative	Present Worth Cost		
	Phase 1	Phase 2	Total
5: Mechanical Treatment - SBR	$7,145,000	$2,128,000	$9,273,000
5: Mechanical Treatment - MBBR	$8,066,000	$3,141,000	$11,207,000
7: SAGR/ANSAGR with Nutrient Removal	$5,864,000	$4,505,000	$10,369,000

The MBBR mechanical treatment alternative is not recommended because it has the highest total project cost and present worth cost.

DGR recommended to the Council members that they make their decision based on what is most important to them. If the Council believes it is most important to have a treatment system that requires little operational assistance and has the lowest initial project cost then the SAGR is the best alternative. If the Council wants a treatment system that is easier to adapt for future nutrient removal limits and more capable of handling future developments then the SBR is the best alternative.

In evaluating the two alternatives the Council has asked about required training for the operator. The SD DENR requires operators to hold the necessary certification for the rating of the facility they operate. The SD DENR has a scoring system that determines the facility rating based on how difficult the facility is to operate. The operator is required to maintain a minimum amount of contact hours in order to renew their certification every three years. The rating and contact hours for the current and proposed systems are shown in the following table.

Treatment System Rating

	Rating	Contact Hours
Current	II	10
SAGR	II	10
SBR	III	20

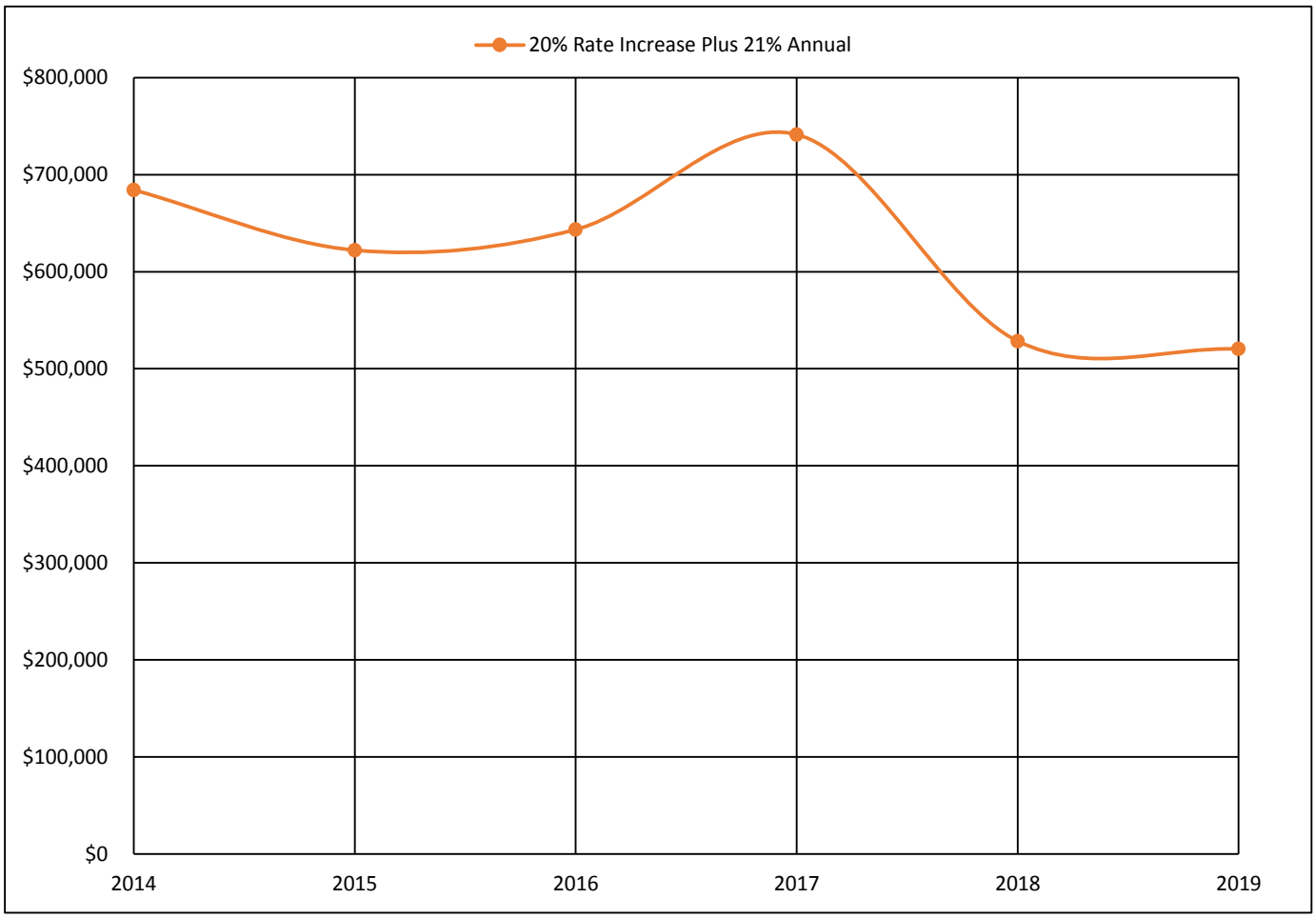
Based on this information, the SBR will require some additional training. While the cost of training is fairly minimal, it is expected that the cost of employing a Class III operator would be more expensive.

In order to help make their decision several council members traveled to Hull, IA to see a SAGR system in operation and to talk to the operator. They also traveled to Grand Falls Casino in Larchwood, IA to see an SBR system and Lennox, SD to see an SBR system and talk to the operator. The Council discussed the two alternatives at several meetings and ultimately passed a motion to build a SBR treatment system.

IMPACT ON OWNER'S BUDGET

This section has been updated to reflect the new cost estimates based on the additional information received. A sewer rate increase will be necessary in order to make the future debt payments and to cover the additional operation and maintenance cost. A sewer rate analysis was completed utilizing the Show-me Ratemaker ™ software. The software considers fund revenue and expenses, customer usage, current rate structure, inflation and future capital projects. The analysis assumed that the sewer fund will balance and there will be no transfers into the account to cover debt payments or other expenses. Future debt service payments were based on the SD DENR's maximum term of 20 years for treatment projects and 30 years for collection projects. The future sewer costs for the proposed 10th Street and SD 115 utility improvement projects were also included in the analysis.

The following graph shows the sewer fund balance over the next four years. The Council is already planning for a 20% rate increase in 2016. Assuming that the City does not receive any grant funding, the rate increase necessary to maintain the sewer fund balance includes an annual increase of 21% for the years 2017, 2018 and 2019. This is the worst case scenario because it is based on the City not receiving any grant dollars. At the end of March 2016, the SD DENR will determine the grant/loan package they will award the City for their three infrastructure projects. The sewer rate analysis can be updated at that time to reflect the grants the City will receive. Print outs from the software are shown in Appendix A.



Sewer Fund Balance

In summary the remaining sections of the report shall remain unchanged. It is recommended the City work with SECOG and DGR to complete funding applications to the SD DENR for the first round of funding in 2016. DGR will work closely with City Staff to establish a project schedule. Selecting a supplier for the SBR equipment will be one of the first steps since each supplier has slight differences in their equipment which will require the treatment system be designed accordingly.

REFERENCES

South Dakota Department of Environment and Natural Resources, (March 1991). Recommended Design Criteria Manual Wastewater Collection and Treatment Facilities, Pierre, SD: Division of Environmental Services.

Stockwell Engineers, Inc, (July 2015). Dell Rapids Wastewater Treatment Facility Plan, Sioux Falls, SD

Appendix A

Show-me Ratemaker ™

Customer Usage Profile

Dell Rapids 2015 Sewer Rate Analysis

(Name of city, district, or community)

For the one year period ending: **12/31/2014**

Date this scenario created: **9/10/2015**

Missouri Department of Natural Resources

Customer Class (use per Month in Gallons)	Median (or Actual Average) use in Gallons	Number of Users in Each Usage Class: November, 2014	December, 2014	January, 2015	February, 2015	March, 2015	April, 2015	May, 2015	June, 2015	July, 2015	August, 2015	September, 2015	October, 2015	Average Users Through-out Year
Residential and General Customers														
Under 1,000	500	121	127	153	106	124	124	124	124	124	124	110	125	124
1,000-1,999	1,500	184	195	225	182	198	198	198	198	198	198	201	198	198
2,000-2,999	2,500	220	274	303	235	259	259	259	259	259	259	259	261	259
3,000-3,999	3,500	271	269	266	269	270	270	270	270	270	270	267	278	270
4,000-4,999	4,500	198	166	157	193	180	180	180	180	180	180	181	186	180
5,000-5,999	5,500	111	108	86	121	105	105	105	105	105	105	102	102	105
6,000-6,999	6,500	79	64	48	83	68	68	68	68	68	68	75	58	68
7,000-7,999	7,500	35	36	25	35	33	33	33	33	33	33	31	35	33
8,000-8,999	8,500	29	19	17	27	22	22	22	22	22	22	25	15	22
9,000-9,999	9,500	20	16	11	15	16	16	16	16	16	16	17	19	16
10,000-14,999	12,500	25	27	19	39	27	27	27	27	27	27	28	22	27
15,000-19,999	17,500	15	10	9	10	11	11	11	11	11	11	7	13	11
20,000-29,999	25,000	8	7	10	6	9	9	9	9	9	9	12	8	9
30,000-39,999	35,000	2	2	1	4	2	2	2	2	2	2	2	3	2
40,000-49,999	45,000	0	0	0	0	0	0	0	0	0	0	0	0	0
50,000 or more	98,000	4	6	4	4	5	5	5	5	5	5	6	4	5
Wholesale and Special Customers														
Commercial 1														0
Commercial 2														0
Wholesale 1														0
Wholesale 2														0
Unmetered, Flat Rate Customers														0
Total Users per Month, Last Column is Average Users Throughout Year		1,322	1,326	1,334	1,329	1,327	1,327	1,327	1,327	1,327	1,327	1,323	1,327	1,327

Dell Rapids 2015 Sewer Rate Analysis
Rate Setting

Missouri Department of Natural Resources

Projected Costs for Year Ending In: 2015		Projected Revenues for Year Ending In: 2015	
		$13,750	Hookup Fees Devoted to Operating Costs
Fixed Costs	$247,829	$245,234	Minimum Charge Revenue
Variable Costs	$392,562	$287,835	Unit Charge Revenue
Surchargeable Service Costs	$0	$3,400	Surcharge Revenue
		$615,567	All Other Revenues
Total Costs	$640,391	$1,165,787	Total Revenue

Proposed Minimum Charge	$18.34	per month		
Proposed Minimum Charge Usage Allowance	0.0	thousand gallons		How much of the proposed average hookup fee at left will be devoted to future capital improvements?
Proposed Unit Charge	$5.06	per 1000 gallons		
Proposed Average Hookup fee	$1,250	Current Average Hookup fee is:	$1,250	$1,250
Proposed Surcharge Revenues	$3,400	(for an entire year at the new rates)		

When the minimum charge is: $13.59 and the unit charge is: $5.06
and the usage allowance is zero, the rates are proportional to use.

Month within "Next Full Year" when new rates will be set: 12

At end of Year 5, Capital Improvement Reserves balance will be (denotes deficit): ($741,651)

Revenue reduction needed to reach working capital goal by end of Year 5 (lower rates to approach $0): ($226,113)

Customer Class (use per Month in Gallons)	Projected Revenues at Old Rates During "Next Full Year": Revenue at old Minimum Charge Rate	Revenue at old Unit Charge Rates	Projected Revenues at Proposed (New) Rates During "Next Full Year": New Minimum Charge Rate for This Class	Revenue at new Minimum Charge Rate	New Unit Charge per 1000 Gallons for Gallons Within This Class	Revenue at new Unit Charge Rates
Residential and General Customers						
Under 1,000	$22,857	$3,156	$18.34	$0	$5.06	$0
1,000-1,999	$36,503	$15,122	$18.34	$0	$5.06	$0
2,000-2,999	$47,809	$33,009	$18.34	$0	$5.06	$0
3,000-3,999	$49,903	$48,238	$18.34	$0	$5.06	$0
4,000-4,999	$33,300	$41,385	$18.34	$0	$5.06	$0
5,000-5,999	$19,407	$29,479	$18.34	$0	$5.06	$0
6,000-6,999	$12,537	$22,507	$18.34	$0	$5.06	$0
7,000-7,999	$6,068	$12,570	$18.34	$0	$5.06	$0
8,000-8,999	$4,066	$9,545	$18.34	$0	$5.06	$0
9,000-9,999	$3,019	$7,921	$18.34	$0	$5.06	$0
10,000-14,999	$4,929	$17,015	$18.34	$0	$5.06	$0
15,000-19,999	$1,971	$9,528	$18.34	$0	$5.06	$0
20,000-29,999	$1,571	$10,847	$18.34	$0	$5.06	$0
30,000-39,999	$431	$4,169	$18.34	$0	$5.06	$0
40,000-49,999	$0	$0	$18.34	$0	$5.06	$0
50,000 or more	$863	$23,345	$18.34	$0	$5.06	$0
Wholesale and Special Customers						
Commercial 1	$0	$0	$18.34	$0	$5.06	$0
Commercial 2	$0	$0	$18.34	$0	$5.06	$0
Wholesale 1	$0	$0	$18.34	$0	$5.06	$0
Wholesale 2	$0	$0	$18.34	$0	$5.06	$0
Unmetered, Flat Rate Customers	$0	$0	$18.34	$0	$5.06	$0
Totals for the Relevant Period of Time	$245,234	$287,835		$0		$0

Note: Revenues above for the year ending in 2015, which is the "next full year," assume the following:
12 months revenues at the existing "Old" user charge rates and; 0 months at the "New" user charge rates.

Dell Rapids 2015 Sewer Rate Analysis

Rate Block Statistics

Missouri Department of Natural Resources

The chart below demonstrates the equitability of your rates as set in the Rate Setting Chart. This is how to use it.

If your rates are absolutely proportional to use on a volumetric basis, your % of usage and % of revenues figures will be the same within all the classes. If you have any minimum charge, that will not happen.

Normally, the % of usage figure will be lower than the % of revenue for the lower volume classes. That will switch for the higher volume classes. Even if you are proposing a declining rate structure in the Rate Setting Chart, this switch should occur near the volume of your average residential user. In your case, that volume is probably between 5,000 gallons per month and

4,284 gallons per month.

For example, for the 5,000-5,999 gallons per month class, your percentages are:

10.2% for % of usage, and
9.2% for % of revenue.

Compare your percentages all the way up the range of user classes. For equitable rates, make reasonable adjustments to your minimum charge and unit charges to get the percentages fairly close together.

"Next Full Year" Rate Block Statistics			
Customer Class (use per Month in Gallons)	% of Users	% of Usage	% of Revenue
Residential and General Customers			
Under 1,000	9%	1%	5%
1,000-1,999	15%	5%	10%
2,000-2,999	19%	11%	15%
3,000-3,999	20%	17%	18%
4,000-4,999	14%	14%	14%
5,000-5,999	8%	10%	9%
6,000-6,999	5%	8%	7%
7,000-7,999	2%	4%	3%
8,000-8,999	2%	3%	3%
9,000-9,999	1%	3%	2%
10,000-14,999	2%	6%	4%
15,000-19,999	1%	3%	2%
20,000-29,999	1%	4%	2%
30,000-39,999	0%	1%	1%
40,000-49,999	0%	0%	0%
50,000 or more	0%	8%	5%
Wholesale and Special Customers			
Commercial 1	0%	0%	0%
Commercial 2	0%	0%	0%
Wholesale 1	0%	0%	0%
Wholesale 2	0%	0%	0%
Unmetered, Flat Rate Customers	0%	0%	0%
Totals	100%	100%	100%

Dell Rapids 2015 Sewer Rate Analysis
Costs and Revenues, 5 - Year Projection

Missouri Department of Natural Resources

Line #	Operating Cost and Income Items	Inflation Factor %	Year Ending In 2014	Year Ending In 2015	Year Ending In 2016	Year Ending In 2017	Year Ending In 2018	Year Ending In 2019
1	Total Number of Customers		1327	1337	1348	1359	1370	1381
2	Annual Increase in Customers (%)	0.8%	0.8%	was last year's actual rate for adding new customers				
3	Total User Charges (Billable)	21.0%	$528,839	$533,069	$780,209	$951,605	$1,160,654	$1,415,626
4	Operating Incomes							
5	User Charges (Actual or Projected Receipts)		$529,418	$533,653	$781,063	$952,647	$1,161,924	$1,417,176
6	Surcharges		$3,400	$3,400	$4,976	$6,069	$7,403	$9,029
7	Working Capital Carried Over From Previous Year (for Operating Expenses)		$610,000	$605,123	$525,979	$534,081	$700,969	$913,128
8	Working Capital Interest Earned (or Paid)		$1,380	$1,513	$1,315	$1,335	$1,752	$2,283
9	Hookup Fees Devoted to Operating Costs		$13,750	$13,750	$0	$0	$0	$0
10	Other Charges (late payments, forfeited deposits, etc.)		$5,224	$5,224	$5,224	$5,224	$5,224	$5,224
11	Transfers From Capital Improvements Reserve		$0	$0	$0	$0	$0	$0
12	Withdrawals From Debt Reserve		$0	$0	$0	$0	$0	$0
13	Debt Reserve Interest Earned (or Paid)		$0	$50	$50	$61	$282	$503
14	Withdrawals From Other Reserves		$0	$0	$0	$0	$0	$0
15	Other Reserve Interest Earned (or Paid)		$0	$50	$50	$50	$50	$50
16	Other Income Impact Fees		$1,169	$1,169	$1,169	$1,169	$1,169	$1,169
17	Other Income Material Sales		$2,439	$2,439	$2,439	$2,439	$2,439	$2,439
18	Other Adjust.		$0	$0	$0	$0	$0	$0
19	Total Actual or Projected Operating Revenues		$1,166,779	$1,166,370	$1,322,265	$1,503,075	$1,881,212	$2,351,001
20	Operating Costs							
21	Salaries & Benefits for Administration Staff	3.0%	$25,090	$25,843	$26,618	$27,417	$28,239	$29,086
22	Billing, Office Operation & Utilities, Rent & Other Overhead	3.0%	$13,060	$13,452	$13,855	$14,271	$14,699	$15,140
23	Insurance & Bonding	3.0%	$3,750	$3,863	$3,978	$4,098	$4,221	$4,347
24	Accounting, Legal, Engineering & Other Professional Services	3.0%	$42,090	$43,353	$44,653	$45,993	$47,373	$48,794
25	Debt Repayment & Related Expenses	N.A.	$239,290	$239,290	$239,290	$239,290	$239,290	$239,290
26	Debt Reserve Payments	N.A.	$0	$0	$0	$0	$0	$0
27	Other Reserve Payments	N.A.	$0	$0	$0	$0	$0	$0
28	** Salaries & Benefits for Operations Staff	3.0%	$115,700	$119,171	$123,728	$128,459	$133,372	$138,472
29	** Electricity & Utilities for Operations	3.0%	$35,710	$36,781	$38,188	$39,648	$41,164	$42,738
30	** Operating Supplies & Equipment	3.0%	$29,440	$30,323	$31,483	$32,687	$33,937	$35,234
31	Chemicals	3.0%	$0	$0	$0	$0	$0	$0
32	Equipment Leases	3.0%	$0	$0	$0	$0	$0	$0
33	Regular Maintenance & Repairs	3.0%	$18,460	$19,014	$19,584	$20,172	$20,777	$21,400
34	Auto & Other Rolling Stock	3.0%	$0	$0	$0	$0	$0	$0
35	Permits, Training	3.0%	$0	$0	$0	$0	$0	$0
36	Taxes and Franchise Fees	3.0%	$0	$0	$0	$0	$0	$0
37	Payment to R & R Account	N.A.	$3,604	$3,604	$3,604	$3,604	$3,604	$3,604
38	Surchargeable Services (Adjustment)	3.0%	$0	$0	$0	$0	$0	$0
39	Water Loss (Adjustment)	3.0%	$0	$0	$0	$0	$0	$0
40	New WWT Utilites, Supplies & Equip	3.0%	$0	$0	$0	$0	$128,000	$131,840
41	Depreciation	3.0%	$0	$105,699	$108,869	$112,136	$115,500	$118,965
42	New WWT Operator	3.0%	$0	$0	$0	$0	$50,000	$51,500
43	Reduction for existing utilities at WWTF	3.0%	$0	$0	$0	$0	($26,424)	($26,424)
44	Offset 2016 rate increase	0.0%	$0	$0	$134,333	$134,333	$134,333	$134,333
45	Total Operating Costs		$526,194	$640,391	$788,184	$802,107	$968,084	$988,320
	** These cost items are forecast using both the inflation factor and increase in number of customers.							
46	Net Operating Income (Total Operating Income - Total Operating Costs)		$640,585	$525,979	$534,081	$700,969	$913,128	$1,362,681
47	Working Capital Goal is:	115%	$605,123	$736,450	$906,412	$922,423	$1,113,296	$1,136,568
	(Total Operating Costs times Working Capital Goal percentage)							
48	Transfer to Capital Improvements Reserve		$35,463	$0	$0	$0	$0	$226,113
	(Net Operating Income in excess of the Working Capital Goal above are transferred into the Capital Improvements Reserve.)							
49	Additional Operating Income Needed to "Break Even" With Operating Costs		NA	NA	NA	NA	NA	NA
50	Additional Income/ Reduced Costs Needed to Attain Working Capital Goal (See note below)		($35,463)	$210,471	$372,331	$221,454	$200,168	($226,113)

Note: If a figure on line 50 is in parentheses ( ), that means you will exceed your working capital goal by that amount for that year. Within reason, that is a desirable situation. If a figure is not in parentheses, you were short of reaching your goal by that amount.

Dell Rapids 2015 Sewer Rate Analysis
Capital Investments and Reserves, 5 - Year Projection

Missouri Department of Natural Resources

Line #	Investment and Reserve Items		Year Ending In 2014	Year Ending In 2015	Year Ending In 2016	Year Ending In 2017	Year Ending In 2018	Year Ending In 2019
51	Sources of Funds							
52	Capital Improvements Carryovers Plus Transfers		$45,463	$45,463	$58,870	$68,339	($6,521)	($253,398)
53	Capital Improvements Interest Earned (or Paid)		$0	$139	$294	$342	($212)	($15,584)
54	Repair and Replacement Account Withdrawals		$0	$0	$0	$0	$0	$17,389
55	Hook up Fees Devoted to Capital Improvements		$0	$13,268	$13,374	$13,481	$13,589	$13,698
56	Cash Contributions From Customers and Others		$0	$0	$0	$0	$0	$0
57	Grants	(CDBG & Consolidated)	$0	$0	$0	$0	$0	$0
58	Loans	SRF 3.0% for 20 years	$0	$0	$0	$5,758,000	$0	$0
59	Other Reserve Withdrawals		$0	$0	$0	$0	$0	$0
60	Other Fund Sources	SRF 3.25% for 30 years	$0	$0	$420,000	$0	$0	$0
61	Other Fund Sources	SRF 3.25% for 30 years	$0	$0	$0	$693,600	$0	$0
62	Total Sources of Funds		$45,463	$58,870	$492,539	$6,533,762	$6,857	($237,894)
63	Use of Capital Improvement and New Debt Funds							
64	Transfers to Operating Account for Operating Costs		$0	$0	$0	$0	$0	$0
65	Capital Improvement Plan (CIP) Expenditures							
66	Items from Repair and Replacement Account		$0	$0	$0	$0	$0	$17,389
67	Wastewater Treatment Improvements		$0	$0	$0	$5,758,000	$0	$0
68	10th Street Improvements		$0	$0	$420,000	$0	$0	$0
69	SD 115 Utility Improvements		$0	$0	$0	$693,600	$0	$0
70			$0	$0	$0	$0	$0	$0
71	Total Transfers & CIP Expenditures		$0	$0	$420,000	$6,451,600	$0	$17,389
72	New Debt Obligations (These exclude debt from Costs and Revenues worksheet.)							
73	Repayments to Customers and Others		$0	$0	$0	$0	$0	$0
74	Debt Service		$0	$0	$0	$21,969	$442,153	$442,153
75	Debt Reserve payments	(10% of loan payment)	$0	$0	$0	$2,197	$44,215	$44,215
76	Fees for New Loans	(bond council 1% of loan)	$0	$0	$4,200	$64,516	$0	$0
77	Other Obligations		$0	$0	$0	$0	$0	$0
78	Total New Debt Obligations		$0	$0	$4,200	$88,682	$486,368	$486,368
79	Total Use of Capital Improvement and New Debt Funds		$0	$0	$424,200	$6,540,282	$486,368	$503,757

WRAP REVIEW SHEET
Sanitary/Storm Sewer Facilities Funding Application
APPLICANT: LAKE POINSETT SANITARY DISTRICT

Project Title:	West and Northwest Lake Drive Wastewater Expansion
Funding Requested:	$8,580,000
Total Project Cost:	$8,580,000
Project Description:	The Lake Poinsett Sewer Improvements project is a multi-phase project that involves constructing three new total retention stabilization ponds and a wastewater collection system to replace or remove the existing on-site septic systems. In order to make the proposed plan financially feasible, the planning/service area was broken up into three project areas. Each project area was broken into segments. • Project area 1 = 3 segments • Project area 2 = 1 segment • Project area 3 = 5 segments The current funding application will construct all five segments in project area 3. This project will connect the northwest portion of the lake to a community sewer line and construct a new wastewater treatment pond. Wastewater collection and treatment has been installed for project area 1 and is under design for project area 2.
Alternatives Evaluated:	The No Action alternative is not considered a feasible alternative for the Lake Poinsett Sanitary District. The use of existing septic systems that are possibly leaking or to near the lake will continue to be a problem if not corrected. Project Area 3 will be constructed in two phases. At the completion of these two phases, construction will include approximately 30,000 feet of gravity sewer, 24,000 feet of force main, 14 lift stations, 40 grinder pump stations, and the construction of a new wastewater treatment pond system on the northwest side of Lake Poinsett. Approximately 167 new users will be connected to the Lake Poinsett Sanitary District wastewater collection system as a result of this project.

Implementation Schedule:	The Lake Poinsett Sanitary District anticipates bidding and constructing the first phase by summer 2017 with completion in fall 2018. The second phase will be bid in summer 2018 with completion in fall 2019.
Service Population:	754
Current Domestic Rate:	$59.33 flat rate

Interest Rate: 3.25% Term: 30 years Security: Surcharge Revenue

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Lake Poinsett Sanitary District would have to establish a surcharge of approximately $55.30. When added to current rate of $59.33 residents would be paying a flat rate of $114.63.

25% Funding Subsidy:	$2,145,000 subsidy with a loan of $6,435,000.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $6,435,000 Lake Poinsett Sanitary District would have to establish a surcharge of approximately $41.47. Thereby paying a flat rate of $100.80.

50% Funding Subsidy:	$4,290,000 subsidy with a loan of $4,290,000.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $4,290,000 Lake Poinsett Sanitary District would have to establish a surcharge of approximately $27.65. Thereby paying a flat rate of $86.98.

75% Funding Subsidy:	$6,435,000 subsidy with a loan of $2,145,000.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $2,145,000 Lake Poinsett Sanitary District would have to establish a surcharge of approximately $13.82. Thereby paying a flat rate of $73.15.

ENGINEERING REVIEW COMPLETED BY: CLAIRE PESCHONG

FINANCIAL REVIEW COMPLETED BY: DEREK LANKFORD

SD EForm - 2127LD V4

RECEIVED
JAN 04 2016
Division of Financial
& Technical Assistance

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: Lake Poinsett Sanitary District	Proposed Funding Package
Address: 19553 US Highway 81 Arlington, SD 57212	Requested Funding $8,580,000 Local Cash _____
Subapplicant: None	Other: _____ _____ Other: _____ _____
DUNS Number: 044206638	Other: _____ _____ TOTAL $8,580,000

Project Title: Lake Poinsett Sanitary District - West and Northwest Lake Drive

Description:

This proposed project would complete the wastewater collection system around Lake Poinsett that is owned and operated by the Lake Poinsett Sanitary District. Maps and cost estimates showing further project detail are included.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Larry Furney, Board President	Larry L. Furney	12-30-
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: First District

Contact Person: Ted Haeder

Mailing Address: PO Box 1207

City, State, and Zip: Watertown, SD 57201

Telephone Number: (605) 882-5115 Fax: (605) 882-5049

Email address: ted@1stdistrict.org

Consulting Engineering Firm: Banner Associates

Contact Person: Pat Carey, P.E.

Mailing Address: 409 22nd Avenue South

City, State, and Zip: Brookings, SD 57006

Telephone Number: (605) 692-6342 Fax: (605) 692-5714

Email address: patc@bannerassociates.com

Legal Counsel's Firm: Lammers, Kleibacker & Brown, LLC

Contact Person: Jerome Lammers

Mailing Address: 108 Egan Avenue North

City, State, and Zip: Madison, SD 57042

Telephone Number: (605) 256-6677 Fax: (605) 256-6679

Email address: jb@lammerskleibacker.ocm

Bond Counsel's Firm: Davenport, Evans, Hurwitz & Smith, LLP

Contact Person: Douglas J. Hajek

Mailing Address: 206 West 14th Street

City, State, and Zip: Sioux Falls, SD 57101

Telephone Number: (605) 357-1227 Fax: (605) 335-3639

Email address: Dhajek@dehs.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services	$71,000					$71,000
B. Travel						
C. Legal & Bond Counsel	$80,000					$80,000
D. Other						
2. Land, Structure, Right-of-Way	$150,000					$150,000
3. Engineering						
A. Bidding and Design Fees	$465,000					$465,000
B. Project Inspection Fees	$443,000					$443,000
C. Other						
4. Construction & Improvements	$6,700,000					$6,700,000
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$7,909,000					$7,909,000
10. Contingencies	$671,000					$671,000
11. Total (Lines 9 and 10)	$8,580,000					$8,580,000
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) SD DENR		$8,580,000	March 31, 2016
Other (Explain)			
Other (Explain)			
Total		$8,580,000	$8,580,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 754 2010 574 2000 100

Top three employers within 30 miles	Number of Employees	Type of Business
Davisco	180	Cheese Plant
Hamlin/Estelline School District	100	Education
Dairy	100	Dairy

Repayment Information

Interest rate you are applying for: 3% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☒ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	1989	2011	2013			
Purpose	System expansion	System Expansion	System Expansion			
Security Pledged	User Fees	User Fees	User Fees			
Amount	$138,800	$1,057,832	$1,115,928			
Maturity Date (mmm/yyyy)	Jan/2029	7/15/2039	4/15/2043			
Debt Holder	Rural Development	SD DENR	SD DENR			
Debt Coverage Requirement	105%	110%	110%			
Avg. Annual Required Payment	$10,416	$59,110	$60,852			
Outstanding Balance	$0	$924,518	$1,103,586			

Comments:

Rural Development loan was paid in full in 2015

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$108,808	$207,578	$283,701	$353,976	$353,976	$631,600
Surcharge Fees						
Other (Explain)	$133,192	$6,700	$3,803	$297,500	$5,000	$592,000
Operating Expenses						
Personal Services	($38,693)	($51,252)	($63,378)	($67,500)	($67,500)	($70,000)
Chemical, Material & Supplies	($47,794)	($32,327)	($60,555)	($20,000)	($20,000)	($20,000)
Electric & Other Utilities	($9,541)	($10,213)	($9,762)	($9,000)	($11,790)	($11,790)
Other (Explain)						
Operating Net Cash	$145,972	$120,486	$153,809	$554,976	$259,686	$1,121,810
Nonoperating Cash Flow						
Interest Revenue						
Transfers In (Explain)						
Fixed Asset Purchases			($96,111)			($100,000)
Transfers Out (Explain)			($260,726)			
Principal Debt Payments	($23,578)	($24,414)	($49,735)	($220,180)	($220,180)	($430,000)
Interest Debt Payments	($35,531)	($34,695)	($70,146)			
Other (Explain)						
Nonoperating Net Cash	($59,109)	($59,109)	($476,718)	($220,180)	($220,180)	($530,000)
Increase (Decrease) Cash	$86,863	$61,377	($322,909)	$334,796	$39,506	$591,810
Beginning Cash Balance	$243,378	$330,241	$391,618	$68,709	$403,505	$443,011
Ending Cash Balance	$330,241	$391,618	$68,709	$403,505	$443,011	$1,034,821
Restricted Balance						
Unrestricted Balance	$330,241	$391,618	$68,709	$403,505	$443,011	$1,034,821

Additional Comments (Explanations)

2015 Transfer Out - $167,726 expansion project reimbursable expenses that will be rolled in to the new SRF loan and $93,000 used to retire Rural Development loan

Other Operating Revenue - connection fees and late fees

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$712.00	$960.00	640	flat
Business	$800.00	$1,080.00	22	flat
Other: Camper fee	$150.00	$200.00	70	flat
Other: Hotel unit fee	$178.00	$240.00	12	flat

Are fees based on usage or flat rate? flat

When is proposed fee scheduled to take effect? As directed by SD DENR

When did the current fee take effect? 1/1/2016

What was the fee prior to the current rate? $592.00/year

Storm Sewer Projects Only: Does applicant have a separate storm water fee? n/a

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	_____
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	_____
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	_____
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	_____

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	$8,580,000
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$8,580,000

Larry Furney, Board President

Name & Title of Authorized Representative

Larry F. Furney

Signature of Authorized Representative

12-30-15

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Larry Furney, Board President

Name & Title of Authorized Representative

Larry L. Furney

Signature of Authorized Representative

12-30-15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

2015 Profit and Loss Standard

Lake Poinsett Sanitary District
19552 US HWY 81 Lake Poinsett
Arlington SD 57217

Ordinanary Income/Expense Sewer Fund	
Income	
Sewer Income - Residential	256,148
Sewer Income - Commercial	27,553
Hamlin and Brookings City Tax Levy*	28,000
Late Fee Income	3,803
Sewer Income - Permits	100
Uncategorized Income	82
Total Income	315,686
Gross Profit	**$315,686**
Expense	
Advertising and Promotion	300
Bank Service Charges	300
Computer and Internet Expenses	981
Fuel Expense	305
Good Will / Annual Picnic	1,004
Insurnace Expense	6,284
Interest Expense	74,253
Licenses/Permits	114
Mileage	2,178
Office Supplies	1,954
Postage	2,651
Professional Fees**	12,096
Publications	2,920
Reconcilliation Discrepancies	1,123
Rent Expense	3,900
Repairs and Maintenance	66,673
Small A/R Adjusments	239
Telephone Expenses	819
Uncategorized Expenses	300

Utilities	8,944
Payroll Expenses	
Employee Contributions to SDRS	1,007
Employer Contributions to SDRS	1,007
Health Care Stipend	280
Payroll Expenses	61,084
Payroll Taxes/Unemployement	499
Total Expenses	**$251,214**
Net Ordinary Income	64,472
Other Income - Interest Income	12
Net Income	**$64,484**

prepared by Bradylee McGeough
Business Manager and Clerk of District

Refuse and Recycling Account

(Amounts Not Included in the Above)

Recycling and Refuse Income	79,602
Recycling and Refuse Expense	74,199
Annual Cleanup Expense	2,155
Net Income	**$3,249**

Northeast and East Lake Drives Expansion Project

Reimburssable Expense $167,726 *Amount paid ahead of receiving grant and loan package from state and DENR.*

* Tax Levy adjusted to $28,000; current accounting system counts amounts received from special assessments twice.
Tax Levy adjusted to show expected and usual amount from tax levy.

** Nearly all of this amount is reimburssable through Northeast and East Lake Drives Expansion Project.

100 South Phillips Avenue
P.O. Box 5186
Sioux Falls, SD 57117-5186

P 605.335.5180
www.fnbsf.com

FirstNational
Trust and Investment
Management Services
Located at The First National Bank in Sioux Falls

February17, 2011

Donna Rhody
Lake Poinsett Sanitary District
PO Box 116
Lake Norden, SD 57248-0116

RE: $1,094,700 Lake Poinsett Sanitary District
Clean Water State Revolving Fund #461027-02

Dear Donna:

As per our conversation enclosed is a revised amortization schedule for the above referenced SRF loan, with quarterly payments of $14,777.62 beginning July 15, 2011. This schedule reflects the activity (one advance and five payments) for the period of April, 2010 through today.

The accrued interest and administrative surcharge, in the amount of $92.50 on funds paid to you during the above referenced period, are also due on or before **April 15, 2011. Therefore, the total amount due on or before April 15, 2011 is $14,777.19.**

As per your request included is an External Debit Authorization Agreement. Please complete and return to my attention. **The accrued interest and administrative surcharge amount would be paid directly by the City with the first ACH payment beginning on July 15, 2011.** A business reply envelope has been included for your convenience.

Also enclosed is Schedule A, which lists the advancement amounts and dates.

If you have any questions regarding the above, please contact me at (605) 335-5248.

Sincerely,

Kristie Wiederrich

Kristie Wiederrich
Assistant Vice President
and Trust Officer

Enclosure

cc: Mr. Dave Ruhnke

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,057,832.54		07-15-2039					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "****" has been omitted due to text length limitations.

Borrower: Lake Poinsett San Dist
Clean Water # 2

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

Disbursement Date:
Interest Rate: 3.500

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	07-15-2011	14,777.62	9,256.03	5,521.59	1,052,311.05
2	10-15-2011	14,777.62	9,207.72	5,569.90	1,046,741.15
2011 TOTALS:		**29,555.24**	**18,463.75**	**11,091.49**	
3	01-15-2012	14,777.62	9,158.99	5,618.63	1,041,122.52
4	04-15-2012	14,777.62	9,109.82	5,667.80	1,035,454.72
5	07-15-2012	14,777.62	9,060.23	5,717.39	1,029,737.33
6	10-15-2012	14,777.62	9,010.20	5,767.42	1,023,969.91
2012 TOTALS:		**59,110.48**	**36,339.24**	**22,771.24**	
7	01-15-2013	14,777.62	8,959.74	5,817.88	1,018,152.03
8	04-15-2013	14,777.62	8,908.83	5,868.79	1,012,283.24
9	07-15-2013	14,777.62	8,857.48	5,920.14	1,006,363.10
10	10-15-2013	14,777.62	8,805.67	5,971.95	1,000,391.15
2013 TOTALS:		**59,110.48**	**35,531.72**	**23,578.76**	
11	01-15-2014	14,777.62	8,753.42	6,024.20	994,366.95
12	04-15-2014	14,777.62	8,700.72	6,076.90	988,290.05
13	07-15-2014	14,777.62	8,647.53	6,130.09	982,159.96
14	10-15-2014	14,777.62	8,593.90	6,183.72	975,976.24
2014 TOTALS:		**59,110.48**	**34,695.57**	**24,414.91**	
15	01-15-2015	14,777.62	8,539.80	6,237.82	969,738.42
16	04-15-2015	14,777.62	8,485.21	6,292.41	963,446.01
17	07-15-2015	14,777.62	8,430.15	6,347.47	957,098.54
18	10-15-2015	14,777.62	8,374.61	6,403.01	950,695.53
2015 TOTALS:		**59,110.48**	**33,829.77**	**25,280.71**	
19	01-15-2016	14,777.62	8,318.59	6,459.03	944,236.50
20	04-15-2016	14,777.62	8,262.07	6,515.55	937,720.95
21	07-15-2016	14,777.62	8,205.05	6,572.57	931,148.38
22	10-15-2016	14,777.62	8,147.55	6,630.07	924,518.31
2016 TOTALS:		**59,110.48**	**32,933.26**	**26,177.22**	
23	01-15-2017	14,777.62	8,089.54	6,688.08	917,830.23
24	04-15-2017	14,777.62	8,031.01	6,746.61	911,083.62
25	07-15-2017	14,777.62	7,971.98	6,805.64	904,277.98
26	10-15-2017	14,777.62	7,912.44	6,865.18	897,412.80
2017 TOTALS:		**59,110.48**	**32,004.97**	**27,105.51**	
27	01-15-2018	14,777.62	7,852.36	6,925.26	890,487.54
28	04-15-2018	14,777.62	7,791.76	6,985.86	883,501.68
29	07-15-2018	14,777.62	7,730.64	7,046.98	876,454.70
30	10-15-2018	14,777.62	7,668.98	7,108.64	869,346.06
2018 TOTALS:		**59,110.48**	**31,043.74**	**28,066.74**	
31	01-15-2019	14,777.62	7,606.78	7,170.84	862,175.22
32	04-15-2019	14,777.62	7,544.03	7,233.59	854,941.63
33	07-15-2019	14,777.62	7,480.74	7,296.88	847,644.75
34	10-15-2019	14,777.62	7,416.90	7,360.72	840,284.03
2019 TOTALS:		**59,110.48**	**30,048.45**	**29,062.03**	
35	01-15-2020	14,777.62	7,352.48	7,425.14	832,858.89
36	04-15-2020	14,777.62	7,287.52	7,490.10	825,368.79
37	07-15-2020	14,777.62	7,221.97	7,555.65	817,813.14
38	10-15-2020	14,777.62	7,155.87	7,621.75	810,191.39

** INTEREST PAID also includes Admin Surcharge amounts

AMORTIZATION SCHEDULE
(Continued)

2020 TOTALS:		**59,110.48**	**29,017.84**	**30,092.64**	
39	01-15-2021	14,777.62	7,089.17	7,688.45	802,502.94
40	04-15-2021	14,777.62	7,021.90	7,755.72	794,747.22
41	07-15-2021	14,777.62	6,954.04	7,823.58	786,923.64
42	10-15-2021	14,777.62	6,885.58	7,892.04	779,031.60
2021 TOTALS:		**59,110.48**	**27,950.69**	**31,159.79**	
43	01-15-2022	14,777.62	6,816.53	7,961.09	771,070.51
44	04-15-2022	14,777.62	6,746.87	8,030.75	763,039.76
45	07-15-2022	14,777.62	6,676.59	8,101.03	754,938.73
46	10-15-2022	14,777.62	6,605.72	8,171.90	746,766.83
2022 TOTALS:		**59,110.48**	**26,845.71**	**32,264.77**	
47	01-15-2023	14,777.62	6,534.21	8,243.41	738,523.42
48	04-15-2023	14,777.62	6,462.08	8,315.54	730,207.88
49	07-15-2023	14,777.62	6,389.32	8,388.30	721,819.58
50	10-15-2023	14,777.62	6,315.92	8,461.70	713,357.88
2023 TOTALS:		**59,110.48**	**25,701.53**	**33,408.95**	
51	01-15-2024	14,777.62	6,241.88	8,535.74	704,822.14
52	04-15-2024	14,777.62	6,167.19	8,610.43	696,211.71
53	07-15-2024	14,777.62	6,091.86	8,685.76	687,525.95
54	10-15-2024	14,777.62	6,015.85	8,761.77	678,764.18
2024 TOTALS:		**59,110.48**	**24,516.78**	**34,593.70**	
55	01-15-2025	14,777.62	5,939.18	8,838.44	669,925.74
56	04-15-2025	14,777.62	5,861.85	8,915.77	661,009.97
57	07-15-2025	14,777.62	5,783.84	8,993.78	652,016.19
58	10-15-2025	14,777.62	5,705.14	9,072.48	642,943.71
2025 TOTALS:		**59,110.48**	**23,290.01**	**35,820.47**	
59	01-15-2026	14,777.62	5,625.76	9,151.86	633,791.85
60	04-15-2026	14,777.62	5,545.68	9,231.94	624,559.91
61	07-15-2026	14,777.62	5,464.90	9,312.72	615,247.19
62	10-15-2026	14,777.62	5,383.41	9,394.21	605,852.98
2026 TOTALS:		**59,110.48**	**22,019.75**	**37,090.73**	
63	01-15-2027	14,777.62	5,301.22	9,476.40	596,376.58
64	04-15-2027	14,777.62	5,218.29	9,559.33	586,817.25
65	07-15-2027	14,777.62	5,134.65	9,642.97	577,174.28
66	10-15-2027	14,777.62	5,050.28	9,727.34	567,446.94
2027 TOTALS:		**59,110.48**	**20,704.44**	**38,406.04**	
67	01-15-2028	14,777.62	4,965.16	9,812.46	557,634.48
68	04-15-2028	14,777.62	4,879.30	9,898.32	547,736.16
69	07-15-2028	14,777.62	4,792.69	9,984.93	537,751.23
70	10-15-2028	14,777.62	4,705.32	10,072.30	527,678.93
2028 TOTALS:		**59,110.48**	**19,342.47**	**39,768.01**	
71	01-15-2029	14,777.62	4,617.19	10,160.43	517,518.50
72	04-15-2029	14,777.62	4,528.29	10,249.33	507,269.17
73	07-15-2029	14,777.62	4,438.61	10,339.01	496,930.16
74	10-15-2029	14,777.62	4,348.14	10,429.48	486,500.68
2029 TOTALS:		**59,110.48**	**17,932.23**	**41,178.25**	
75	01-15-2030	14,777.62	4,256.88	10,520.74	475,979.94
76	04-15-2030	14,777.62	4,164.82	10,612.80	465,367.14
77	07-15-2030	14,777.62	4,071.96	10,705.66	454,661.48
78	10-15-2030	14,777.62	3,978.29	10,799.33	443,862.15
2030 TOTALS:		**59,110.48**	**16,471.95**	**42,638.53**	
79	01-15-2031	14,777.62	3,883.79	10,893.83	432,968.32
80	04-15-2031	14,777.62	3,788.48	10,989.14	421,979.18
81	07-15-2031	14,777.62	3,692.32	11,085.30	410,893.88
82	10-15-2031	14,777.62	3,595.32	11,182.30	399,711.58
2031 TOTALS:		**59,110.48**	**14,959.91**	**44,150.57**	
83	01-15-2032	14,777.62	3,497.47	11,280.15	388,431.43
84	04-15-2032	14,777.62	3,398.78	11,378.84	377,052.59
85	07-15-2032	14,777.62	3,299.21	11,478.41	365,574.18
86	10-15-2032	14,777.62	3,198.77	11,578.85	353,995.33

AMORTIZATION SCHEDULE
(Continued)

2032 TOTALS:		**59,110.48**	**13,394.23**	**45,716.25**	
87	01-15-2033	14,777.62	3,097.46	11,680.16	342,315.17
88	04-15-2033	14,777.62	2,995.26	11,782.36	330,532.81
89	07-15-2033	14,777.62	2,892.16	11,885.46	318,647.35
90	10-15-2033	14,777.62	2,788.17	11,989.45	306,657.90
2033 TOTALS:		**59,110.48**	**11,773.05**	**47,337.43**	
91	01-15-2034	14,777.62	2,683.25	12,094.37	294,563.53
92	04-15-2034	14,777.62	2,577.43	12,200.19	282,363.34
93	07-15-2034	14,777.62	2,470.68	12,306.94	270,056.40
94	10-15-2034	14,777.62	2,363.00	12,414.62	257,641.78
2034 TOTALS:		**59,110.48**	**10,094.36**	**49,016.12**	
95	01-15-2035	14,777.62	2,254.36	12,523.26	245,118.52
96	04-15-2035	14,777.62	2,144.79	12,632.83	232,485.69
97	07-15-2035	14,777.62	2,034.25	12,743.37	219,742.32
98	10-15-2035	14,777.62	1,922.74	12,854.88	206,887.44
2035 TOTALS:		**59,110.48**	**8,356.14**	**50,754.34**	
99	01-15-2036	14,777.62	1,810.27	12,967.35	193,920.09
100	04-15-2036	14,777.62	1,696.80	13,080.82	180,839.27
101	07-15-2036	14,777.62	1,582.34	13,195.28	167,643.99
102	10-15-2036	14,777.62	1,466.89	13,310.73	154,333.26
2036 TOTALS:		**59,110.48**	**6,556.30**	**52,554.18**	
103	01-15-2037	14,777.62	1,350.41	13,427.21	140,906.05
104	04-15-2037	14,777.62	1,232.93	13,544.69	127,361.36
105	07-15-2037	14,777.62	1,114.41	13,663.21	113,698.15
106	10-15-2037	14,777.62	994.86	13,782.76	99,915.39
2037 TOTALS:		**59,110.48**	**4,692.61**	**54,417.87**	
107	01-15-2038	14,777.62	874.26	13,903.36	86,012.03
108	04-15-2038	14,777.62	752.61	14,025.01	71,987.02
109	07-15-2038	14,777.62	629.88	14,147.74	57,839.28
110	10-15-2038	14,777.62	506.10	14,271.52	43,567.76
2038 TOTALS:		**59,110.48**	**2,762.85**	**56,347.63**	
111	01-15-2039	14,777.62	381.22	14,396.40	29,171.36
112	04-15-2039	14,777.62	255.25	14,522.37	14,648.99
113	07-15-2039	14,777.62	128.63	14,648.99	0.00
2039 TOTALS:		**44,332.86**	**765.10**	**43,567.76**	
TOTALS:		**1,669,871.06**	**612,038.42**	**1,057,832.64**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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SCHEDULE A
SCHEDULE OF AMOUNTS ADVANCED

Lake Poinsett Sanitary District
Clean Water SRF #C461027-02

DATE	ADVANCE	TOTAL AMT ADVANCED	NOTATION MADE BY
09/26/07	$53,766.00	$53,766.00	kw
10/25/07	91,171.00	144,937.00	kw
11/28/07	211,338.00	356,275.00	kw
12/21/07	83,504.00	439,779.00	kw
07/02/08	192,789.00	632,568.00	kw
07/28/08	189,957.00	822,525.00	kw
08/21/08	119,345.00	941,870.00	kw
09/25/08	122,176.00	1,064,046.00	kw
08/15/09	24,002.00	1,088,048.00	kw
01/13/11	6,652.00	1,094,700.00	kw

100 South Phillips Avenue
P.O. Box 5186
Sioux Falls, SD 57117-5186

(P) 605.335.5180
www.fnbsf.com

FirstNational
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September 29, 2014

Bradylee McGeough
Lake Poinsett Sanitary District
19553 US Hwy 81 Ste 3
Arlington, SD 57212-5643

RE: $3,075,000 Lake Poinsett Sanitary District
Clean Water SRF Loan #461027-03

Dear Bradylee:

Enclosed is the revised amortization schedule for the above referenced SRF loan, with quarterly payments of $15,174.75 beginning January 15, 2015. This schedule reflects the activity (two advances and two payments) for the period of April, 2014 through today.

The accrued interest and administrative surcharge, in the amount of **$304.47** on funds paid to you during the above referenced period, are also due on or before **October 15, 2014**. **Therefore, the total amount due on or before October 15, 2014 is $14,774.18.**

This payment will be taken via ACH as per the recently signed authorization.

Also included is Schedule A, which lists the amounts advanced along with the dates.

If you have any questions regarding the above, please contact me at (605) 335-5248.

Sincerely,

Kristie Wiederrich

Kristie Wiederrich
Assistant Vice President
and Trust Officer

Enclosure

cc: Mr. Dave Ruhnke

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,125,226.07		04-15-2043					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Lake Poinsett San Dist - Clean Water #3
Total Advances $2,407,793.00
Principal Forgiveness $1,254,460.00
Principal Payments $28,106.93

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

Principal Advance:	$1,125,226.07
Amount Financed:	$1,125,226.07
Finance Charge:	$604,694.57
APR:	3.2500%
Total Principal:	$1,125,226.07
Total Interest:	$604,694.57
Total of Payments:	$1,729,920.64

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Jan 15, 2015	Quarterly	113	$15,174.75
Regular Payment	Apr 15, 2043	Quarterly	1	$15,173.89

* Interest Payment also includes Admin Surcharge amounts

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
Oct 15, 2014	Beginning Balance					1,125,226.07
2014 Totals						
Jan 15, 2015	Regular Payment	15,174.75	15,174.75	6,032.28	9,142.47	1,119,193.79
Apr 15, 2015	Regular Payment	15,174.75	15,174.75	6,081.30	9,093.45	1,113,112.49
Jul 15, 2015	Regular Payment	15,174.75	15,174.75	6,130.71	9,044.04	1,106,981.78
Oct 15, 2015	Regular Payment	15,174.75	15,174.75	6,180.52	8,994.23	1,100,801.26
2015 Totals		**60,699.00**	**60,699.00**	**24,424.81**	**36,274.19**	
Jan 15, 2016	Regular Payment	15,174.75	15,174.75	6,230.73	8,944.02	1,094,570.53
Apr 15, 2016	Regular Payment	15,174.75	15,174.75	6,281.36	8,893.39	1,088,289.17
Jul 15, 2016	Regular Payment	15,174.75	15,174.75	6,332.40	8,842.35	1,081,956.77
Oct 15, 2016	Regular Payment	15,174.75	15,174.75	6,383.85	8,790.90	1,075,572.92
2016 Totals		**60,699.00**	**60,699.00**	**25,228.34**	**35,470.66**	
Jan 15, 2017	Regular Payment	15,174.75	15,174.75	6,435.72	8,739.03	1,069,137.20
Apr 15, 2017	Regular Payment	15,174.75	15,174.75	6,488.01	8,686.74	1,062,649.19
Jul 15, 2017	Regular Payment	15,174.75	15,174.75	6,540.72	8,634.03	1,056,108.47
Oct 15, 2017	Regular Payment	15,174.75	15,174.75	6,593.86	8,580.89	1,049,514.61
2017 Totals		**60,699.00**	**60,699.00**	**26,058.31**	**34,640.69**	
Jan 15, 2018	Regular Payment	15,174.75	15,174.75	6,647.44	8,527.31	1,042,867.17
Apr 15, 2018	Regular Payment	15,174.75	15,174.75	6,701.45	8,473.30	1,036,165.72
Jul 15, 2018	Regular Payment	15,174.75	15,174.75	6,755.90	8,418.85	1,029,409.82
Oct 15, 2018	Regular Payment	15,174.75	15,174.75	6,810.79	8,363.96	1,022,599.03
2018 Totals		**60,699.00**	**60,699.00**	**26,915.58**	**33,783.42**	
Jan 15, 2019	Regular Payment	15,174.75	15,174.75	6,866.13	8,308.62	1,015,732.90
Apr 15, 2019	Regular Payment	15,174.75	15,174.75	6,921.92	8,252.83	1,008,810.98
Jul 15, 2019	Regular Payment	15,174.75	15,174.75	6,978.16	8,196.59	1,001,832.82
Oct 15, 2019	Regular Payment	15,174.75	15,174.75	7,034.85	8,139.90	994,797.97
2019 Totals		**60,699.00**	**60,699.00**	**27,801.06**	**32,897.94**	
Jan 15, 2020	Regular Payment	15,174.75	15,174.75	7,092.01	8,082.74	987,705.96
Apr 15, 2020	Regular Payment	15,174.75	15,174.75	7,149.63	8,025.12	980,556.33
Jul 15, 2020	Regular Payment	15,174.75	15,174.75	7,207.72	7,967.03	973,348.61
Oct 15, 2020	Regular Payment	15,174.75	15,174.75	7,266.29	7,908.46	966,082.32
2020 Totals		**60,699.00**	**60,699.00**	**28,715.65**	**31,983.35**	
Jan 15, 2021	Regular Payment	15,174.75	15,174.75	7,325.33	7,849.42	958,756.99
Apr 15, 2021	Regular Payment	15,174.75	15,174.75	7,384.84	7,789.91	951,372.15
Jul 15, 2021	Regular Payment	15,174.75	15,174.75	7,444.85	7,729.90	943,927.30
Oct 15, 2021	Regular Payment	15,174.75	15,174.75	7,505.34	7,669.41	936,421.96
2021 Totals		**60,699.00**	**60,699.00**	**29,660.36**	**31,038.64**	
Jan 15, 2022	Regular Payment	15,174.75	15,174.75	7,566.32	7,608.43	928,855.64
Apr 15, 2022	Regular Payment	15,174.75	15,174.75	7,627.79	7,546.96	921,227.85

Jul 15, 2022	Regular Payment	15,174.75	15,174.75	7,689.77	7,484.98	913,538.08
Oct 15, 2022	Regular Payment	15,174.75	15,174.75	7,752.25	7,422.50	905,785.83
2022 Totals		**60,699.00**	**60,699.00**	**30,636.13**	**30,062.87**	
Jan 15, 2023	Regular Payment	15,174.75	15,174.75	7,815.24	7,359.51	897,970.59
Apr 15, 2023	Regular Payment	15,174.75	15,174.75	7,878.73	7,296.02	890,091.86
Jul 15, 2023	Regular Payment	15,174.75	15,174.75	7,942.75	7,232.00	882,149.11
Oct 15, 2023	Regular Payment	15,174.75	15,174.75	8,007.28	7,167.47	874,141.83
2023 Totals		**60,699.00**	**60,699.00**	**31,644.00**	**29,055.00**	
Jan 15, 2024	Regular Payment	15,174.75	15,174.75	8,072.34	7,102.41	866,069.49
Apr 15, 2024	Regular Payment	15,174.75	15,174.75	8,137.93	7,036.82	857,931.56
Jul 15, 2024	Regular Payment	15,174.75	15,174.75	8,204.05	6,970.70	849,727.51
Oct 15, 2024	Regular Payment	15,174.75	15,174.75	8,270.71	6,904.04	841,456.80
2024 Totals		**60,699.00**	**60,699.00**	**32,685.03**	**28,013.97**	
Jan 15, 2025	Regular Payment	15,174.75	15,174.75	8,337.91	6,836.84	833,118.89
Apr 15, 2025	Regular Payment	15,174.75	15,174.75	8,405.65	6,769.10	824,713.24
Jul 15, 2025	Regular Payment	15,174.75	15,174.75	8,473.95	6,700.80	816,239.29
Oct 15, 2025	Regular Payment	15,174.75	15,174.75	8,542.80	6,631.95	807,696.49
2025 Totals		**60,699.00**	**60,699.00**	**33,760.31**	**26,938.69**	
Jan 15, 2026	Regular Payment	15,174.75	15,174.75	8,612.21	6,562.54	799,084.28
Apr 15, 2026	Regular Payment	15,174.75	15,174.75	8,682.19	6,492.56	790,402.09
Jul 15, 2026	Regular Payment	15,174.75	15,174.75	8,752.73	6,422.02	781,649.36
Oct 15, 2026	Regular Payment	15,174.75	15,174.75	8,823.84	6,350.91	772,825.52
2026 Totals		**60,699.00**	**60,699.00**	**34,870.97**	**25,828.03**	
Jan 15, 2027	Regular Payment	15,174.75	15,174.75	8,895.54	6,279.21	763,929.98
Apr 15, 2027	Regular Payment	15,174.75	15,174.75	8,967.81	6,206.94	754,962.17
Jul 15, 2027	Regular Payment	15,174.75	15,174.75	9,040.68	6,134.07	745,921.49
Oct 15, 2027	Regular Payment	15,174.75	15,174.75	9,114.13	6,060.62	736,807.36
2027 Totals		**60,699.00**	**60,699.00**	**36,018.16**	**24,680.84**	
Jan 15, 2028	Regular Payment	15,174.75	15,174.75	9,188.19	5,986.56	727,619.17
Apr 15, 2028	Regular Payment	15,174.75	15,174.75	9,262.84	5,911.91	718,356.33
Jul 15, 2028	Regular Payment	15,174.75	15,174.75	9,338.10	5,836.65	709,018.23
Oct 15, 2028	Regular Payment	15,174.75	15,174.75	9,413.97	5,760.78	699,604.26
2028 Totals		**60,699.00**	**60,699.00**	**37,203.10**	**23,495.90**	
Jan 15, 2029	Regular Payment	15,174.75	15,174.75	9,490.46	5,684.29	690,113.80
Apr 15, 2029	Regular Payment	15,174.75	15,174.75	9,567.57	5,607.18	680,546.23
Jul 15, 2029	Regular Payment	15,174.75	15,174.75	9,645.31	5,529.44	670,900.92
Oct 15, 2029	Regular Payment	15,174.75	15,174.75	9,723.68	5,451.07	661,177.24
2029 Totals		**60,699.00**	**60,699.00**	**38,427.02**	**22,271.98**	
Jan 15, 2030	Regular Payment	15,174.75	15,174.75	9,802.68	5,372.07	651,374.56
Apr 15, 2030	Regular Payment	15,174.75	15,174.75	9,882.33	5,292.42	641,492.23
Jul 15, 2030	Regular Payment	15,174.75	15,174.75	9,962.62	5,212.13	631,529.61
Oct 15, 2030	Regular Payment	15,174.75	15,174.75	10,043.57	5,131.18	621,486.04

2030 Totals		**60,699.00**	**60,699.00**	**39,691.20**	**21,007.80**	
Jan 15, 2031	Regular Payment	15,174.75	15,174.75	10,125.17	5,049.58	611,360.87
Apr 15, 2031	Regular Payment	15,174.75	15,174.75	10,207.44	4,967.31	601,153.43
Jul 15, 2031	Regular Payment	15,174.75	15,174.75	10,290.37	4,884.38	590,863.06
Oct 15, 2031	Regular Payment	15,174.75	15,174.75	10,373.98	4,800.77	580,489.08
2031 Totals		**60,699.00**	**60,699.00**	**40,996.96**	**19,702.04**	
Jan 15, 2032	Regular Payment	15,174.75	15,174.75	10,458.27	4,716.48	570,030.81
Apr 15, 2032	Regular Payment	15,174.75	15,174.75	10,543.24	4,631.51	559,487.57
Jul 15, 2032	Regular Payment	15,174.75	15,174.75	10,628.91	4,545.84	548,858.66
Oct 15, 2032	Regular Payment	15,174.75	15,174.75	10,715.27	4,459.48	538,143.39
2032 Totals		**60,699.00**	**60,699.00**	**42,345.69**	**18,353.31**	
Jan 15, 2033	Regular Payment	15,174.75	15,174.75	10,802.33	4,372.42	527,341.06
Apr 15, 2033	Regular Payment	15,174.75	15,174.75	10,890.10	4,284.65	516,450.96
Jul 15, 2033	Regular Payment	15,174.75	15,174.75	10,978.58	4,196.17	505,472.38
Oct 15, 2033	Regular Payment	15,174.75	15,174.75	11,067.78	4,106.97	494,404.60
2033 Totals		**60,699.00**	**60,699.00**	**43,738.79**	**16,960.21**	
Jan 15, 2034	Regular Payment	15,174.75	15,174.75	11,157.71	4,017.04	483,246.89
Apr 15, 2034	Regular Payment	15,174.75	15,174.75	11,248.36	3,926.39	471,998.53
Jul 15, 2034	Regular Payment	15,174.75	15,174.75	11,339.76	3,834.99	460,658.77
Oct 15, 2034	Regular Payment	15,174.75	15,174.75	11,431.89	3,742.86	449,226.88
2034 Totals		**60,699.00**	**60,699.00**	**45,177.72**	**15,521.28**	
Jan 15, 2035	Regular Payment	15,174.75	15,174.75	11,524.78	3,649.97	437,702.10
Apr 15, 2035	Regular Payment	15,174.75	15,174.75	11,618.42	3,556.33	426,083.68
Jul 15, 2035	Regular Payment	15,174.75	15,174.75	11,712.82	3,461.93	414,370.86
Oct 15, 2035	Regular Payment	15,174.75	15,174.75	11,807.98	3,366.77	402,562.88
2035 Totals		**60,699.00**	**60,699.00**	**46,664.00**	**14,035.00**	
Jan 15, 2036	Regular Payment	15,174.75	15,174.75	11,903.92	3,270.83	390,658.96
Apr 15, 2036	Regular Payment	15,174.75	15,174.75	12,000.64	3,174.11	378,658.32
Jul 15, 2036	Regular Payment	15,174.75	15,174.75	12,098.15	3,076.60	366,560.17
Oct 15, 2036	Regular Payment	15,174.75	15,174.75	12,196.44	2,978.31	354,363.73
2036 Totals		**60,699.00**	**60,699.00**	**48,199.15**	**12,499.85**	
Jan 15, 2037	Regular Payment	15,174.75	15,174.75	12,295.54	2,879.21	342,068.19
Apr 15, 2037	Regular Payment	15,174.75	15,174.75	12,395.44	2,779.31	329,672.75
Jul 15, 2037	Regular Payment	15,174.75	15,174.75	12,496.15	2,678.60	317,176.60
Oct 15, 2037	Regular Payment	15,174.75	15,174.75	12,597.69	2,577.06	304,578.91
2037 Totals		**60,699.00**	**60,699.00**	**49,784.82**	**10,914.18**	
Jan 15, 2038	Regular Payment	15,174.75	15,174.75	12,700.04	2,474.71	291,878.87
Apr 15, 2038	Regular Payment	15,174.75	15,174.75	12,803.23	2,371.52	279,075.64
Jul 15, 2038	Regular Payment	15,174.75	15,174.75	12,907.26	2,267.49	266,168.38
Oct 15, 2038	Regular Payment	15,174.75	15,174.75	13,012.13	2,162.62	253,156.25
2038 Totals		**60,699.00**	**60,699.00**	**51,422.66**	**9,276.34**	
Jan 15, 2039	Regular Payment	15,174.75	15,174.75	13,117.85	2,056.90	240,038.40

Apr 15, 2039	Regular Payment	15,174.75	15,174.75	13,224.43	1,950.32	226,813.97
Jul 15, 2039	Regular Payment	15,174.75	15,174.75	13,331.88	1,842.87	213,482.09
Oct 15, 2039	Regular Payment	15,174.75	15,174.75	13,440.20	1,734.55	200,041.89
2039 Totals		**60,699.00**	**60,699.00**	**53,114.36**	**7,584.64**	
Jan 15, 2040	Regular Payment	15,174.75	15,174.75	13,549.40	1,625.35	186,492.49
Apr 15, 2040	Regular Payment	15,174.75	15,174.75	13,659.49	1,515.26	172,833.00
Jul 15, 2040	Regular Payment	15,174.75	15,174.75	13,770.48	1,404.27	159,062.52
Oct 15, 2040	Regular Payment	15,174.75	15,174.75	13,882.36	1,292.39	145,180.16
2040 Totals		**60,699.00**	**60,699.00**	**54,861.73**	**5,837.27**	
Jan 15, 2041	Regular Payment	15,174.75	15,174.75	13,995.16	1,179.59	131,185.00
Apr 15, 2041	Regular Payment	15,174.75	15,174.75	14,108.87	1,065.88	117,076.13
Jul 15, 2041	Regular Payment	15,174.75	15,174.75	14,223.50	951.25	102,852.63
Oct 15, 2041	Regular Payment	15,174.75	15,174.75	14,339.07	835.68	88,513.56
2041 Totals		**60,699.00**	**60,699.00**	**56,666.60**	**4,032.40**	
Jan 15, 2042	Regular Payment	15,174.75	15,174.75	14,455.57	719.18	74,057.99
Apr 15, 2042	Regular Payment	15,174.75	15,174.75	14,573.02	601.73	59,484.97
Jul 15, 2042	Regular Payment	15,174.75	15,174.75	14,691.43	483.32	44,793.54
Oct 15, 2042	Regular Payment	15,174.75	15,174.75	14,810.80	363.95	29,982.74
2042 Totals		**60,699.00**	**60,699.00**	**58,530.82**	**2,168.18**	
Jan 15, 2043	Regular Payment	15,174.75	15,174.75	14,931.14	243.61	15,051.60
Apr 15, 2043	Regular Payment	15,173.89	15,173.89	15,051.60	122.29	
2043 Totals		**30,348.64**	**30,348.64**	**29,982.74**	**365.90**	
Grand Total		**1,729,920.64**	**1,729,920.64**	**1,125,226.07**	**604,694.57**	

SCHEDULE A
SCHEDULE OF AMOUNTS ADVANCED

Lake Poinsett Sanitary District
Clean Water #461027-03

DATE	ADVANCE	TOTAL AMT ADVANCED	NOTATION MADE BY
6/8/12	$78,397.00	$78,397.00	kw
6-8-12 Prin Forgiveness	(40,844.00)	37,553.00	kw
11/2/12	360,894.00	398,447.00	kw
11-2-12 Prin Forgiveness	(188,026.00)	210,421.00	kw
11/28/12	428,650.00	639,071.00	kw
11-28-12 Prin Forgiveness	(223,327.00)	415,744.00	kw
1/9/13	343,825.00	759,569.00	kw
1-9-13 Prin Forgiveness	(179,133.00)	580,436.00	kw
1/18/13	120,852.00	701,288.00	kw
1-18-13 Prin Forgiveness	(62,963.00)	638,325.00	kw
3/26/13	93,074.00	731,399.00	kw
3-26-13 Prin Forgiveness	(48,492.00)	682,907.00	kw
6/26/13	155,895.00	838,802.00	kw
6-26-13 Prin Forgiveness	(81,221.00)	757,581.00	kw
8/16/13	225,419.00	983,000.00	kw
8-16-13 Prin Forgiveness	(117,444.00)	865,556.00	kw
8/26/13	242,205.00	1,107,761.00	kw
8-26-13 Prin Forgiveness	(126,188.00)	981,573.00	kw
12/6/13	72,698.00	1,054,271.00	kw
12-6-13 Prin Forgiveness	(37,876.00)	1,016,395.00	kw
12/13/13	118,886.00	1,135,281.00	kw
12-13-13 Prin Forgiveness	(61,940.00)	1,073,341.00	kw
2/10/14	20,940.00	1,094,281.00	kw
2-10-14 Prin Forgiveness	(10,909.00)	1,083,372.00	kw
2/27/14	36,916.00	1,120,288.00	kw
2-27-14 Prin Forgiveness	(19,234.00)	1,101,054.00	kw
8/4/14	93,418.00	1,194,472.00	kw
8-4-14 Prin Forgiveness	(48,670.00)	1,145,802.00	kw
9/26/14	15,724.00	1,161,526.00	kw
9-26-14 Prin Forgiveness	(8,193.00)	1,153,333.00	kw

DEPARTMENT OF ENVIRONMENT and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

October 2, 2014

Mr. Lawrence Furney, President
Lake Poinsett Sanitary District
19553 U.S. Hwy 81, Ste. 3
Arlington, SD 57212

RE: Clean Water SRF C461027-03
(Sanitary Sewer Expansion/New Treatment Pond)

Dear Mr. Furney:

Lake Poinsett Sanitary District has drawn the following loan funds on the above referenced loan. The Clean Water SRF loan was awarded with 52.1 percent principal forgiveness.

Obligated	Principal Forgiveness Possible	Drawn to Date	Principal Forgiveness Awarded	Principal Payments Through 10/15/2014	Amortized Balance	Balance of Funds Available
$3,075,000	$1,603,000	$2,407,793	$1,254,460	$28,106.93	$1,125,226.07	$667,207

Ms. Kristie Wiederrich, Assistant Vice President and Trust Officer at The First National Bank in Sioux Falls, will prepare a draw schedule and amortization schedule, which will include accrued interest on the entire amount drawn.

If you have any questions, please feel free to contact me via email at Elayne.Lande@state.sd.us.

Sincerely,

Elayne M Lande

Elayne M. Lande
Grant and Loan Specialist I
Water Resources Assistance Program

Cc: Andy Bruels
Kristie Wiederrich, FNB

100 South Phillips Avenue
P.O. Box 5186
Sioux Falls, SD 57117-5186

(P) 605.335.5180
www.fnbsf.com

FirstNational
Trust and Investment
Management Services
Located at The First National Bank in Sioux Falls

February 26, 2015

Bradylee McGeough
Lake Poinsett Sanitary District
19553 US Hwy 81 Ste 3
Arlington, SD 57212-5643

RE: $3,075,000 Lake Poinsett Sanitary District
Clean Water SRF Loan #461027-03

Dear Bradylee:

Enclosed is the revised amortization schedule for the above referenced SRF loan, with quarterly payments of $15,213.14 beginning July 15, 2015. This schedule reflects the activity (one advance and two payments) for the period of January, 2015 through today.

The accrued interest and administrative surcharge, in the amount of **$19.83** on funds paid to you during the above referenced period, are also due on or before **April 15, 2015**. **Therefore, the total amount due on or before April 15, 2015 is $15,194.58.**

This payment will be taken via ACH as per the recently signed authorization.

Also included is Schedule A, which lists the amounts advanced along with the dates.

If you have any questions regarding the above, please contact me at (605) 335-5248.

Sincerely,

Kristie Wiederrich

Kristie Wiederrich
Assistant Vice President
and Trust Officer

Enclosure

cc: Mr. Dave Ruhnke

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,115,928.49		04-15-2043					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Lake Poinsett San Dist - Clean Water #3
Total Advances $2,413,671.00
Principal Forgiveness $1,257,522.00
Principal Payments $40,220.51

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

Principal Advance:	$1,115,928.49
Amount Financed:	$1,115,928.49
Finance Charge:	$587,942.28
APR:	3.2500%
Total Principal:	$1,115,928.49
Total Interest:	$587,942.28
Total of Payments:	$1,703,870.77

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Jul 15, 2015	Quarterly	111	$15,213.14
Regular Payment	Apr 15, 2043	Quarterly	1	$15,212.23

Interest Payment also includes
Admin Surcharge amounts

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
Apr 15, 2015	Beginning Balance					1,115,928.49
Jul 15, 2015	Regular Payment	15,213.14	15,213.14	6,146.22	9,066.92	1,109,782.27
Oct 15, 2015	Regular Payment	15,213.14	15,213.14	6,196.15	9,016.99	1,103,586.12
2015 Totals		**30,426.28**	**30,426.28**	**12,342.37**	**18,083.91**	
Jan 15, 2016	Regular Payment	15,213.14	15,213.14	6,246.50	8,966.64	1,097,339.62
Apr 15, 2016	Regular Payment	15,213.14	15,213.14	6,297.25	8,915.89	1,091,042.37
Jul 15, 2016	Regular Payment	15,213.14	15,213.14	6,348.42	8,864.72	1,084,693.95
Oct 15, 2016	Regular Payment	15,213.14	15,213.14	6,400.00	8,813.14	1,078,293.95
2016 Totals		**60,852.56**	**60,852.56**	**25,292.17**	**35,560.39**	
Jan 15, 2017	Regular Payment	15,213.14	15,213.14	6,452.00	8,761.14	1,071,841.95
Apr 15, 2017	Regular Payment	15,213.14	15,213.14	6,504.42	8,708.72	1,065,337.53
Jul 15, 2017	Regular Payment	15,213.14	15,213.14	6,557.27	8,655.87	1,058,780.26
Oct 15, 2017	Regular Payment	15,213.14	15,213.14	6,610.55	8,602.59	1,052,169.71
2017 Totals		**60,852.56**	**60,852.56**	**26,124.24**	**34,728.32**	
Jan 15, 2018	Regular Payment	15,213.14	15,213.14	6,664.26	8,548.88	1,045,505.45
Apr 15, 2018	Regular Payment	15,213.14	15,213.14	6,718.40	8,494.74	1,038,787.05
Jul 15, 2018	Regular Payment	15,213.14	15,213.14	6,772.99	8,440.15	1,032,014.06
Oct 15, 2018	Regular Payment	15,213.14	15,213.14	6,828.02	8,385.12	1,025,186.04
2018 Totals		**60,852.56**	**60,852.56**	**26,983.67**	**33,868.89**	
Jan 15, 2019	Regular Payment	15,213.14	15,213.14	6,883.50	8,329.64	1,018,302.54
Apr 15, 2019	Regular Payment	15,213.14	15,213.14	6,939.43	8,273.71	1,011,363.11
Jul 15, 2019	Regular Payment	15,213.14	15,213.14	6,995.81	8,217.33	1,004,367.30
Oct 15, 2019	Regular Payment	15,213.14	15,213.14	7,052.65	8,160.49	997,314.65
2019 Totals		**60,852.56**	**60,852.56**	**27,871.39**	**32,981.17**	
Jan 15, 2020	Regular Payment	15,213.14	15,213.14	7,109.95	8,103.19	990,204.70
Apr 15, 2020	Regular Payment	15,213.14	15,213.14	7,167.72	8,045.42	983,036.98
Jul 15, 2020	Regular Payment	15,213.14	15,213.14	7,225.96	7,987.18	975,811.02
Oct 15, 2020	Regular Payment	15,213.14	15,213.14	7,284.67	7,928.47	968,526.35
2020 Totals		**60,852.56**	**60,852.56**	**28,788.30**	**32,064.26**	
Jan 15, 2021	Regular Payment	15,213.14	15,213.14	7,343.86	7,869.28	961,182.49
Apr 15, 2021	Regular Payment	15,213.14	15,213.14	7,403.53	7,809.61	953,778.96
Jul 15, 2021	Regular Payment	15,213.14	15,213.14	7,463.68	7,749.46	946,315.28
Oct 15, 2021	Regular Payment	15,213.14	15,213.14	7,524.32	7,688.82	938,790.96
2021 Totals		**60,852.56**	**60,852.56**	**29,735.39**	**31,117.17**	
Jan 15, 2022	Regular Payment	15,213.14	15,213.14	7,585.46	7,627.68	931,205.50
Apr 15, 2022	Regular Payment	15,213.14	15,213.14	7,647.09	7,566.05	923,558.41
Jul 15, 2022	Regular Payment	15,213.14	15,213.14	7,709.22	7,503.92	915,849.19
Oct 15, 2022	Regular Payment	15,213.14	15,213.14	7,771.86	7,441.28	908,077.33
2022 Totals		**60,852.56**	**60,852.56**	**30,713.63**	**30,138.93**	
Jan 15, 2023	Regular Payment	15,213.14	15,213.14	7,835.01	7,378.13	900,242.32

Apr 15, 2023	Regular Payment	15,213.14	15,213.14	7,898.67	7,314.47	892,343.65
Jul 15, 2023	Regular Payment	15,213.14	15,213.14	7,962.84	7,250.30	884,380.81
Oct 15, 2023	Regular Payment	15,213.14	15,213.14	8,027.54	7,185.60	876,353.27
2023 Totals		**60,852.56**	**60,852.56**	**31,724.06**	**29,128.50**	
Jan 15, 2024	Regular Payment	15,213.14	15,213.14	8,092.76	7,120.38	868,260.51
Apr 15, 2024	Regular Payment	15,213.14	15,213.14	8,158.52	7,054.62	860,101.99
Jul 15, 2024	Regular Payment	15,213.14	15,213.14	8,224.81	6,988.33	851,877.18
Oct 15, 2024	Regular Payment	15,213.14	15,213.14	8,291.63	6,921.51	843,585.55
2024 Totals		**60,852.56**	**60,852.56**	**32,767.72**	**28,084.84**	
Jan 15, 2025	Regular Payment	15,213.14	15,213.14	8,359.00	6,854.14	835,226.55
Apr 15, 2025	Regular Payment	15,213.14	15,213.14	8,426.92	6,786.22	826,799.63
Jul 15, 2025	Regular Payment	15,213.14	15,213.14	8,495.39	6,717.75	818,304.24
Oct 15, 2025	Regular Payment	15,213.14	15,213.14	8,564.41	6,648.73	809,739.83
2025 Totals		**60,852.56**	**60,852.56**	**33,845.72**	**27,006.84**	
Jan 15, 2026	Regular Payment	15,213.14	15,213.14	8,634.00	6,579.14	801,105.83
Apr 15, 2026	Regular Payment	15,213.14	15,213.14	8,704.15	6,508.99	792,401.68
Jul 15, 2026	Regular Payment	15,213.14	15,213.14	8,774.87	6,438.27	783,626.81
Oct 15, 2026	Regular Payment	15,213.14	15,213.14	8,846.17	6,366.97	774,780.64
2026 Totals		**60,852.56**	**60,852.56**	**34,959.19**	**25,893.37**	
Jan 15, 2027	Regular Payment	15,213.14	15,213.14	8,918.04	6,295.10	765,862.60
Apr 15, 2027	Regular Payment	15,213.14	15,213.14	8,990.50	6,222.64	756,872.10
Jul 15, 2027	Regular Payment	15,213.14	15,213.14	9,063.55	6,149.59	747,808.55
Oct 15, 2027	Regular Payment	15,213.14	15,213.14	9,137.19	6,075.95	738,671.36
2027 Totals		**60,852.56**	**60,852.56**	**36,109.28**	**24,743.28**	
Jan 15, 2028	Regular Payment	15,213.14	15,213.14	9,211.43	6,001.71	729,459.93
Apr 15, 2028	Regular Payment	15,213.14	15,213.14	9,286.27	5,926.87	720,173.66
Jul 15, 2028	Regular Payment	15,213.14	15,213.14	9,361.72	5,851.42	710,811.94
Oct 15, 2028	Regular Payment	15,213.14	15,213.14	9,437.79	5,775.35	701,374.15
2028 Totals		**60,852.56**	**60,852.56**	**37,297.21**	**23,555.35**	
Jan 15, 2029	Regular Payment	15,213.14	15,213.14	9,514.47	5,698.67	691,859.68
Apr 15, 2029	Regular Payment	15,213.14	15,213.14	9,591.78	5,621.36	682,267.90
Jul 15, 2029	Regular Payment	15,213.14	15,213.14	9,669.71	5,543.43	672,598.19
Oct 15, 2029	Regular Payment	15,213.14	15,213.14	9,748.27	5,464.87	662,849.92
2029 Totals		**60,852.56**	**60,852.56**	**38,524.23**	**22,328.33**	
Jan 15, 2030	Regular Payment	15,213.14	15,213.14	9,827.48	5,385.66	653,022.44
Apr 15, 2030	Regular Payment	15,213.14	15,213.14	9,907.33	5,305.81	643,115.11
Jul 15, 2030	Regular Payment	15,213.14	15,213.14	9,987.82	5,225.32	633,127.29
Oct 15, 2030	Regular Payment	15,213.14	15,213.14	10,068.98	5,144.16	623,058.31
2030 Totals		**60,852.56**	**60,852.56**	**39,791.61**	**21,060.95**	
Jan 15, 2031	Regular Payment	15,213.14	15,213.14	10,150.79	5,062.35	612,907.52
Apr 15, 2031	Regular Payment	15,213.14	15,213.14	10,233.26	4,979.88	602,674.26
Jul 15, 2031	Regular Payment	15,213.14	15,213.14	10,316.41	4,896.73	592,357.85

Oct 15, 2031	Regular Payment	15,213.14	15,213.14	10,400.23	4,812.91	581,957.62
2031 Totals		**60,852.56**	**60,852.56**	**41,100.69**	**19,751.87**	
Jan 15, 2032	Regular Payment	15,213.14	15,213.14	10,484.73	4,728.41	571,472.89
Apr 15, 2032	Regular Payment	15,213.14	15,213.14	10,569.92	4,643.22	560,902.97
Jul 15, 2032	Regular Payment	15,213.14	15,213.14	10,655.80	4,557.34	550,247.17
Oct 15, 2032	Regular Payment	15,213.14	15,213.14	10,742.38	4,470.76	539,504.79
2032 Totals		**60,852.56**	**60,852.56**	**42,452.83**	**18,399.73**	
Jan 15, 2033	Regular Payment	15,213.14	15,213.14	10,829.66	4,383.48	528,675.13
Apr 15, 2033	Regular Payment	15,213.14	15,213.14	10,917.65	4,295.49	517,757.48
Jul 15, 2033	Regular Payment	15,213.14	15,213.14	11,006.36	4,206.78	506,751.12
Oct 15, 2033	Regular Payment	15,213.14	15,213.14	11,095.78	4,117.36	495,655.34
2033 Totals		**60,852.56**	**60,852.56**	**43,849.45**	**17,003.11**	
Jan 15, 2034	Regular Payment	15,213.14	15,213.14	11,185.94	4,027.20	484,469.40
Apr 15, 2034	Regular Payment	15,213.14	15,213.14	11,276.82	3,936.32	473,192.58
Jul 15, 2034	Regular Payment	15,213.14	15,213.14	11,368.45	3,844.69	461,824.13
Oct 15, 2034	Regular Payment	15,213.14	15,213.14	11,460.81	3,752.33	450,363.32
2034 Totals		**60,852.56**	**60,852.56**	**45,292.02**	**15,560.54**	
Jan 15, 2035	Regular Payment	15,213.14	15,213.14	11,553.93	3,659.21	438,809.39
Apr 15, 2035	Regular Payment	15,213.14	15,213.14	11,647.81	3,565.33	427,161.58
Jul 15, 2035	Regular Payment	15,213.14	15,213.14	11,742.45	3,470.69	415,419.13
Oct 15, 2035	Regular Payment	15,213.14	15,213.14	11,837.85	3,375.29	403,581.28
2035 Totals		**60,852.56**	**60,852.56**	**46,782.04**	**14,070.52**	
Jan 15, 2036	Regular Payment	15,213.14	15,213.14	11,934.04	3,279.10	391,647.24
Apr 15, 2036	Regular Payment	15,213.14	15,213.14	12,031.00	3,182.14	379,616.24
Jul 15, 2036	Regular Payment	15,213.14	15,213.14	12,128.75	3,084.39	367,487.49
Oct 15, 2036	Regular Payment	15,213.14	15,213.14	12,227.30	2,985.84	355,260.19
2036 Totals		**60,852.56**	**60,852.56**	**48,321.09**	**12,531.47**	
Jan 15, 2037	Regular Payment	15,213.14	15,213.14	12,326.65	2,886.49	342,933.54
Apr 15, 2037	Regular Payment	15,213.14	15,213.14	12,426.80	2,786.34	330,506.74
Jul 15, 2037	Regular Payment	15,213.14	15,213.14	12,527.77	2,685.37	317,978.97
Oct 15, 2037	Regular Payment	15,213.14	15,213.14	12,629.56	2,583.58	305,349.41
2037 Totals		**60,852.56**	**60,852.56**	**49,910.78**	**10,941.78**	
Jan 15, 2038	Regular Payment	15,213.14	15,213.14	12,732.17	2,480.97	292,617.24
Apr 15, 2038	Regular Payment	15,213.14	15,213.14	12,835.62	2,377.52	279,781.62
Jul 15, 2038	Regular Payment	15,213.14	15,213.14	12,939.91	2,273.23	266,841.71
Oct 15, 2038	Regular Payment	15,213.14	15,213.14	13,045.05	2,168.09	253,796.66
2038 Totals		**60,852.56**	**60,852.56**	**51,552.75**	**9,299.81**	
Jan 15, 2039	Regular Payment	15,213.14	15,213.14	13,151.04	2,062.10	240,645.62
Apr 15, 2039	Regular Payment	15,213.14	15,213.14	13,257.89	1,955.25	227,387.73
Jul 15, 2039	Regular Payment	15,213.14	15,213.14	13,365.61	1,847.53	214,022.12
Oct 15, 2039	Regular Payment	15,213.14	15,213.14	13,474.21	1,738.93	200,547.91
2039 Totals		**60,852.56**	**60,852.56**	**53,248.75**	**7,603.81**	
Jan 15, 2040	Regular Payment	15,213.14	15,213.14	13,583.68	1,629.46	186,964.23

Apr 15, 2040	Regular Payment	15,213.14	15,213.14	13,694.05	1,519.09	173,270.18
Jul 15, 2040	Regular Payment	15,213.14	15,213.14	13,805.31	1,407.83	159,464.87
Oct 15, 2040	Regular Payment	15,213.14	15,213.14	13,917.48	1,295.66	145,547.39
2040 Totals		**60,852.56**	**60,852.56**	**55,000.52**	**5,852.04**	
Jan 15, 2041	Regular Payment	15,213.14	15,213.14	14,030.56	1,182.58	131,516.83
Apr 15, 2041	Regular Payment	15,213.14	15,213.14	14,144.56	1,068.58	117,372.27
Jul 15, 2041	Regular Payment	15,213.14	15,213.14	14,259.49	953.65	103,112.78
Oct 15, 2041	Regular Payment	15,213.14	15,213.14	14,375.34	837.80	88,737.44
2041 Totals		**60,852.56**	**60,852.56**	**56,809.95**	**4,042.61**	
Jan 15, 2042	Regular Payment	15,213.14	15,213.14	14,492.14	721.00	74,245.30
Apr 15, 2042	Regular Payment	15,213.14	15,213.14	14,609.89	603.25	59,635.41
Jul 15, 2042	Regular Payment	15,213.14	15,213.14	14,728.60	484.54	44,906.81
Oct 15, 2042	Regular Payment	15,213.14	15,213.14	14,848.27	364.87	30,058.54
2042 Totals		**60,852.56**	**60,852.56**	**58,678.90**	**2,173.66**	
Jan 15, 2043	Regular Payment	15,213.14	15,213.14	14,968.91	244.23	15,089.63
Apr 15, 2043	Regular Payment	15,212.23	15,212.23	15,089.63	122.60	
2043 Totals		**30,425.37**	**30,425.37**	**30,058.54**	**366.83**	
Grand Total		**1,703,870.77**	**1,703,870.77**	**1,115,928.49**	**587,942.28**	

SCHEDULE A
SCHEDULE OF AMOUNTS ADVANCED

Lake Poinsett Sanitary District
Clean Water #461027-03

DATE	ADVANCE	TOTAL AMT ADVANCED	NOTATION MADE BY
6/8/12	$78,397.00	$78,397.00	kw
6-8-12 Prin Forgiveness	(40,844.00)	37,553.00	kw
11/2/12	360,894.00	398,447.00	kw
11-2-12 Prin Forgiveness	(188,026.00)	210,421.00	kw
11/28/12	428,650.00	639,071.00	kw
11-28-12 Prin Forgiveness	(223,327.00)	415,744.00	kw
1/9/13	343,825.00	759,569.00	kw
1-9-13 Prin Forgiveness	(179,133.00)	580,436.00	kw
1/18/13	120,852.00	701,288.00	kw
1-18-13 Prin Forgiveness	(62,963.00)	638,325.00	kw
3/26/13	93,074.00	731,399.00	kw
3-26-13 Prin Forgiveness	(48,492.00)	682,907.00	kw
6/26/13	155,895.00	838,802.00	kw
6-26-13 Prin Forgiveness	(81,221.00)	757,581.00	kw
8/16/13	225,419.00	983,000.00	kw
8-16-13 Prin Forgiveness	(117,444.00)	865,556.00	kw
8/26/13	242,205.00	1,107,761.00	kw
8-26-13 Prin Forgiveness	(126,188.00)	981,573.00	kw
12/6/13	72,698.00	1,054,271.00	kw
12-6-13 Prin Forgiveness	(37,876.00)	1,016,395.00	kw
12/13/13	118,886.00	1,135,281.00	kw
12-13-13 Prin Forgiveness	(61,940.00)	1,073,341.00	kw
2/10/14	20,940.00	1,094,281.00	kw
2-10-14 Prin Forgiveness	(10,909.00)	1,083,372.00	kw
2/27/14	36,916.00	1,120,288.00	kw
2-27-14 Prin Forgiveness	(19,234.00)	1,101,054.00	kw
8/4/14	93,418.00	1,194,472.00	kw
8-4-14 Prin Forgiveness	(48,670.00)	1,145,802.00	kw
9/26/14	15,724.00	1,161,526.00	kw
9-26-14 Prin Forgiveness	(8,193.00)	1,153,333.00	kw
1/28/15	5,878.00	1,159,211.00	kw
1-28-15 Prin Forgiveness	(3,062.00)	1,156,149.00	kw

ORDINANCE NO. 38

AN ORDINANCE TO AMEND ORDINANCE NO. 14 TO ESTABLISH SEWER SERVICE CHARGES TO BE LEVIED ON ALL USERS WHICH DISCHARGE WASTEWATER INTO THE WASTEWATER SYSTEM OF LAKE POINSETT SANITARY DISTRICT, HAMLIN AND BROOKINGS COUNTIES, SOUTH DAKOTA, HEREINAFTER DESIGNATED AS "DISTRICT."

BE IT ORDAINED AND ENACTED BY THE BOARD OF TRUSTEES OF LAKE POINSETT SANITARY DISTRICT, HEREINAFTER RESIDNATED AS "BOARD:"

SECTION 1.

That Section 8 of Ordinance No. 14 be amended to read as follows:

SECTION 8

USER'S WASTEWATER RATES AND CHARGES

A. Users shall be billed quarterly at $178.00 per quarter. Billing shall occur on the 10th of each of the months of January, April, July and October.

B. Commercial users shall be billed quarterly. Each establishment shall be billed $200.00 per quarter. Each rental unit (hotel or cabin) shall be assessed a $178.00 annual fee.

C. Commercial campgrounds shall be billed annually $150.00 per unit campsite per year, without a quarterly fee. This rate may be renegotiated in the future in the event of an act of God or natural catastrophe.

D. Mobile home Users (unit is owned by inhabitant on rental lot rather than in a commercial campground) shall be billed at $178.00 per quarter.

E. Vacant lots shall be assessed an annual rate of 60% of the scheduled rate for debt retirement fees.

F. Any person or firm who shall fail to pay to District at its office address sewer service charges within ninety (90) days after the billing date thereof, shall be assessed and be liable to District a penalty in the sum of $10.00 per month for that month in which the delinquency occurs, and a like amount each month thereafter for which said charges remain unpaid.

G. In the event that the Board shall cause the amount of any delinquent charges, interest or penalties on charges to be certified by the clerk to the county auditor pursuant to SDCL 34A-5-40, a $35.00 administrative charge may be added to each of the delinquent charges certified to the county auditor.

SECTION 2.

1. This Ordinance shall be in full force and effect from and after January 1, 2016, after its passage, approval, recording and publication as required by law.

2. Passed and adopted by the Board of Trustees of Lake Poinsett Sanitary District on the 10th day of October, 2015, by the following vote:

Ayes: 4, Namely: Anderson, Larson, Furney, Pentaho

Nayes: NONE, Namely: _____

Passed First Reading: 9/12/15
Passed Second Reading: 10/10/15
Published: _____

President, Lake Poinsett Sanitary District

ATTEST:

Clerk, Lake Poinsett Sanitary District

L P
S D

Lake Poinsett Sanitary District

19553 US HWY 8:
Arlington SD 5721:

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- **Rates and Services**

Rates and Services

Garbage Rates

Seasonal (April 1st through October 31st) -- **$118** -- (*plus 4% sales tax)*

Year-round -- **$188** -- (*plus 4% sales tax)*

Please set your bin on the very edge of the road. Pickup day is Monday. The service provider will not collect if the bin is more than three feet away from the side of the road.

Recycling day is every other Tuesday.

Please place recycling bin and refuse bin at least three fee apart if put out together.

Commercial Accounts -- *negotiated individually with service provider*

Sewer Rates

Quarterly Residential Rate -- **$178**

Quarterly Commercial Rate -- **$200**

Each rental unit (hotel, or cabin, or camper hookup) shall be assessed $178 annual fee.

Commercial Camper units -- $150 per occupiable site

Vacant lots -- 60% of quarterly rate per quarter for debt retirement fees.

Connection Fee--$1500

Permit Fee--$100

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L P
S D

Lake Poinsett Sanitary District
19553 US HWY 81 Suite 3
Lake Poinsett
Arlington SD 57212

RESOLUTION NO. 2015-12-13

RESOLUTION APPROVING A CHANGE IN SCOPE FOR THE EXPANSION PROJECT ON NORTHEAST AND EAST LAKE DRIVES, LAKE POINSETT, AUTHORIZING LPSD TO PURSUE INSTALLATION OF A CONVENTIONAL SEWER SYSTEM INSTEAD OF A GREY-WATER SEWER SYSTEM

WHEREAS, the Lake Poinsett Sanitary District (the "District") has determined it is necessary to proceed with installation of a conventional sewer system instead of the grey-water sewer system originally planned,

WHEREAS, the District has determined that installation of a conventional sewer system is in the best interest of the Lake Poinsett community,

NOW THEREFORE BE IT RESOLVED by the District as follows:

1. The District hereby approves installation of a conventional sewer system for Northeast and East Lake Drives,

2. The District authorizes Banner Engineering to make the necessary changes to the plans for the system,

3. The District hereby requests the Department of Environment and Natural Resources and the South Dakota Board of Water and Natural Resources to recognize the change in scope of the project,

4. The District hereby notifies DENR and the SDBWNR that no change in the financial packages previously awarded is requested or intended,

Adopted at the Lake Poinsett Sanitary District Board Meeting, South Dakota, this 12th day of December 2015.

APPROVED:

(SEAL)

Larry Furney
Board President
Lake Poinsett Sanitary District

Attest: Bradylee McGeough
Bradylee McGeough
Business Manager and Clerk of District

http://bit.do/LPSD lakepoinsettsanitarydistrict@gmail.com 605-880-4503

OPINION OF PROBABLE PROJECT COST
PROJECT AREA 3 - WEST & NORTHWEST LAKE DRIVE
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
BAI No. 20628.04.01

BANNER
Engineering | Architecture | Surveying
Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006
Tel | 605.692.6342 Fax | 605.692.5714
Toll Free | 1.855.323.6342
www.bannerassociates.com

Project Area 3 - Phase 1 - Nitteberg Beach, Saaranen's Beach and Nitteberg Subdivision (Hwy 28)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$189,100	$189,100
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	8,400	SY	$3	$25,200
4	Remove Existing Concrete Driveway	2,500	SY	$5	$12,500
5	Remove Existing Septic Tank	62	Each	$500	$31,000
6	Granular Bedding Material	8,000	Ton	$12	$96,000
7	Pipe Foundation Material	2,000	Ton	$15	$30,000
8	Stabilization Pond Unclassified Excavation	44,000	CY	$5	$220,000
9	Stabilization Pond 12-Inch Clay Liner	18,900	CY	$4	$75,600
10	Topsoil Placement	3,100	CY	$3	$9,300
11	Geotechnical Services	1	Lump Sum	$6,000	$6,000
12	Compaction - Moisture/Density Test	35	Each	$200	$7,000
13	Percolation or Permeability Tests	3	Each	$500	$1,500
14	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$4,000	$4,000
15	Stabilization Pond Inlet Structure	1	Each	$5,000	$5,000
16	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$6,000	$6,000
17	48-inch Woven Wire with 2-Strand Barbed Wire Fence	3,000	LF	$5	$15,000
18	Riprap, Class A	4,500	Ton	$50	$225,000
19	Erosion Control Fabric	6,600	SY	$4	$26,400
20	16-foot Tubular Frame Gate	1	Each	$300	$300
21	Warning Sign	4	Each	$200	$800
22	Exploratory Excavation	100	Hour	$200	$20,000
23	8" Dia. SDR 35 PVC Gravity Sewer Pipe	6,950	LF	$32	$222,400
24	4" Dia. SDR 35 PVC Gravity Sewer Pipe	4,300	LF	$32	$137,600
25	6" Dia. Class 150 PVC Forcemain Pipe	12,100	LF	$24	$290,400
26	4" Dia. Class 150 PVC Forcemain Pipe	1,850	LF	$24	$44,400
27	2" Dia. Class 200 PVC Forcemain Pipe	2,200	LF	$20	$44,000
28	1-$^{1}/_{4}$" Dia. Class 200 PVC Forcemain Pipe	1,800	LF	$20	$36,000
29	48" Dia. Sanitary Sewer Manhole	21	Each	$3,500	$73,500
30	4" Sewer Service Connection w/ Cleanout	43	Each	$800	$34,400
31	1$^{1}/_{4}$" Sewer Service Connection	19	Each	$800	$15,200
32	Sewage Air Release Valve and Manhole	6	Each	$4,000	$24,000
33	Sewage Pressure Cleanout and Manhole	3	Each	$4,000	$12,000
34	Grinder Pump Station, Control and Appurtenances	19	Each	$8,000	$152,000
35	Remove and Replace Drainage Culvert	500	LF	$40	$20,000
36	Base Course and Gravel Surfacing	6,300	Ton	$15	$94,500
37	Geotextile Fabric	2,500	SY	$3	$7,500
38	Hot-Mix Asphalt Pavement	1,400	Ton	$90	$126,000
39	PCC Driveway Pavement	2,500	SY	$50	$125,000
40	Hydro Seeding Lawn Areas	20	Acre	$3,500	$70,000
41	Seeding Stabilization Pond Area	3	Acre	$1,800	$5,400
42	Allowance for Landscaping Repairs	1	Lump Sum	$25,000	$25,000
43	Silt Fence	2,000	LF	$5	$10,000
44	Lift Station, Valve Vault and Appurtenances	5	Each	$150,000	$750,000
	Opinion of Probable Construction Costs (December 2015)				**$3,330,000**
	Land Purchase for Stabilization Pond (13 acres)				$150,000
	Contingencies				$333,000
	Engineering Services:				
	Design Engineering and Bidding Services				$231,000
	Construction Engineering Services				$220,000
	Administration and Legal				$76,000
	Opinion of Probable Construction Costs				**$4,340,000**

OPINION OF PROBABLE PROJECT COST
PROJECT AREA 3 - WEST & NORTHWEST LAKE DRIVE
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
BAI No. 20628.04.01

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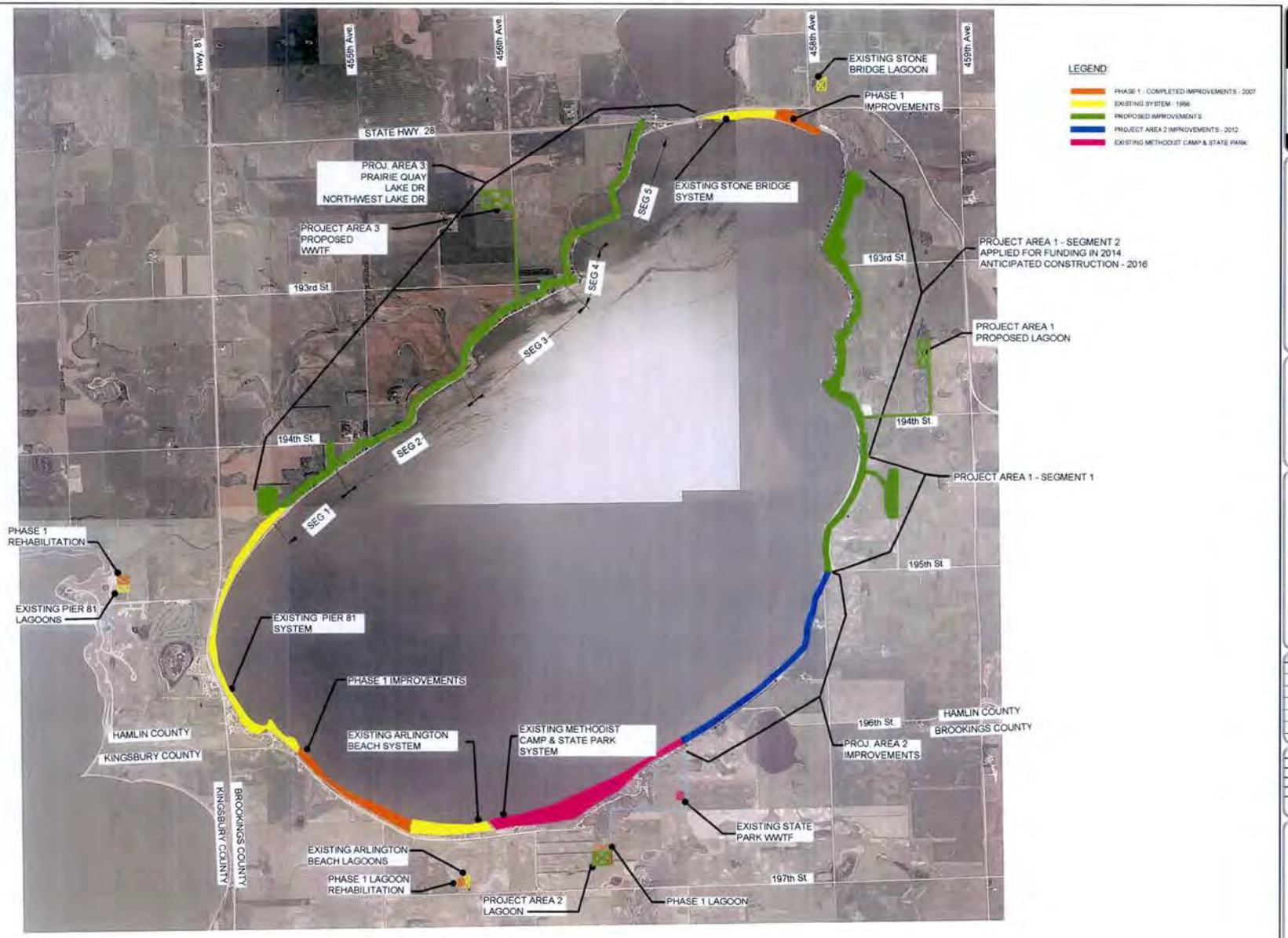
www.bannerassociates.com

Project Area 3 - Phase 2 - Prairie Quay, Indian Knolls, Olsen's Subdivision and Nitteberg Beach					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$192,750	$192,750
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	3,100	SY	$3	$9,300
4	Remove Existing Concrete Driveway	2,500	SY	$5	$12,500
5	Remove Existing Septic Tank	105	Each	$500	$52,500
6	Granular Bedding Material	8,000	Ton	$12	$96,000
7	Pipe Foundation Material	2,000	Ton	$15	$30,000
8	Compaction - Moisture/Density Test	35	Each	$200	$7,000
9	Exploratory Excavation	100	Hour	$200	$20,000
10	8" Dia. SDR 35 PVC Gravity Sewer Pipe	10,400	LF	$32	$332,800
11	4" Dia. SDR 35 PVC Gravity Sewer Pipe	8,400	LF	$32	$268,800
12	4" Dia. Class 150 PVC Forcemain Pipe	7,400	LF	$24	$177,600
13	1-$^{1}/_{4}$" Dia. Class 200 PVC Forcemain Pipe	2,100	LF	$20	$42,000
14	48" Dia. Sanitary Sewer Manhole	25	Each	$3,500	$87,500
15	4" Sewer Service Connection w/ Cleanout	84	Each	$800	$67,200
16	1$^{1}/_{4}$" Sewer Service Connection	21	Each	$800	$16,800
17	Sewage Air Release Valve and Manhole	5	Each	$4,000	$20,000
18	Grinder Pump Station, Control and Appurtenances	21	Each	$8,000	$168,000
19	Remove and Replace Drainage Culvert	500	LF	$40	$20,000
20	Base Course and Gravel Surfacing	7,200	Ton	$15	$108,000
21	Geotextile Fabric	2,500	SY	$3	$7,500
22	Hot-Mix Asphalt Pavement	525	Ton	$150	$78,750
23	PCC Driveway Pavement	2,500	SY	$50	$125,000
24	Hydro Seeding Lawn Areas	10	Acre	$3,500	$35,000
25	Allowance for Landscaping Repairs	1	Lump Sum	$30,000	$30,000
26	Silt Fence	2,000	LF	$5	$10,000
27	Lift Station, Valve Vault and Appurtenances	9	Each	$150,000	$1,350,000
	Opinion of Probable Construction Costs (December 2015)				**$3,370,000**
	Contingencies				$338,000
	Engineering Services:				
	Design Engineering and Bidding Services				$234,000
	Construction Engineering Services				$223,000
	Administration and Legal				$75,000
	Opinion of Probable Construction Costs				**$4,240,000**



NORTH SCALE: NONE

PROJECT LAYOUT

BANNER
409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-6342
www.bannerassociates.com

CONSULTANTS

FOR REVIEW ONLY NOT FOR CONSTRUCTION

PROJECT TITLE
LAKE POINSETT WW COLLECTION & WWTF FACILITY PLAN AMENDMENT

PROJECT LOCATION
HAMLIN/BROOKINGS CO. SOUTH DAKOTA

REV	DATE	DESCRIPTION

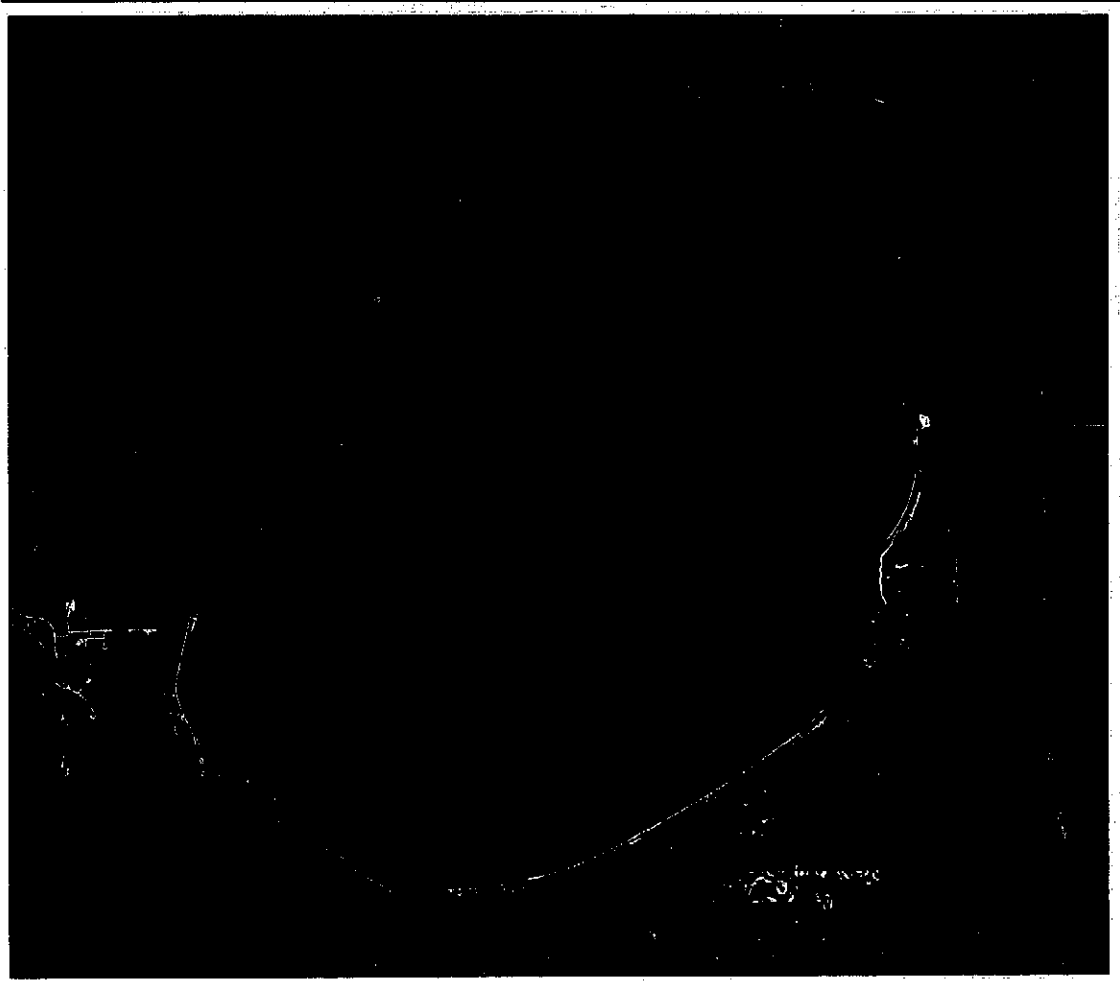
DRAWN BY: C.M.C.
DESIGNED BY: J.J.M.
CHECKED BY: J.P.H.
JOB NO: 20626-04
DATE: DECEMBER 2015
SCALE: 1" = 1000'

SHEET TITLE
PROJECT LAYOUT

SHEET NO.
FIGURE 3.1

F:\20626-04\Design Phase\Acad\Project layout - updated 12-7-15.dwg12/14/2015 10:41 AM

FACILITY PLAN AMENDMENT



Facility Plan Amendent For:

Wastewater Collection and Treatment Facilities

Lake Poinsett Sanitary District

Prepared by

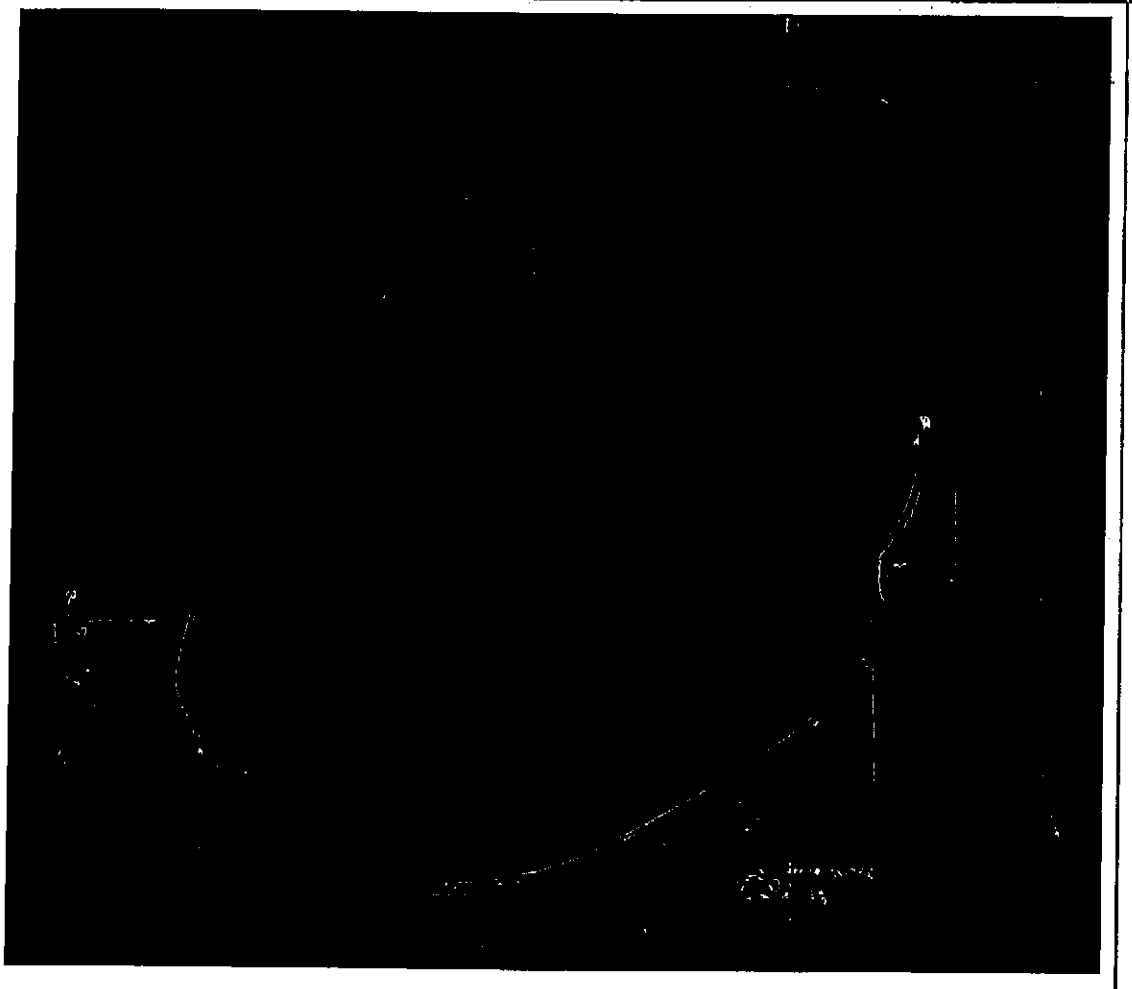
Banner Associates, Inc.
Brookings, South Dakota

May 2009

BANNER

BAI Project No. 20627.01.00

FACILITY PLAN AMENDMENT



Facility Plan Amendent For:

Wastewater Collection and Treatment Facilities

Lake Poinsett Sanitary District

REGISTERED PROFESSIONAL ENGINEER
REG NO.
6854
PATRICK J.
CAREY
SOUTH DAKOTA
5-8-09

Prepared by

Banner Associates, Inc.
Brookings, South Dakota

May 2009

BANNER
BAI Project No. 20627.01.00

FACILITIES PLAN AMENDMENT

Lake Poinsett, SOUTH DAKOTA

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SECTION 1: INTRODUCTION

1.1 STUDY AUTHORIZATION, PURPOSE AND SCOPE

Preparation of this Facility Plan for the Lake Poinsett service area was authorized by the Lake Poinsett Sanitary District on April 8, 2006.

The Lake Poinsett Sanitary District retained Banner Associates, Inc. to prepare a facility plan amendment to identify the existing conditions within the project areas, project future flows, identify future project areas in order to complete the wastewater collection system around Lake Poinsett, and recommend wastewater treatment facilities (WWTFs) for each project area.

The facility plan addresses the following major items:

1. Effluent Limitations;
2. Environmental Information Document;
3. Evaluation of Existing Conditions;
4. Evaluation of Future Conditions;
5. Evaluation of Wastewater Treatment Facility Alternatives;
6. Recommendation of a Selected Treatment Alternative; and,
7. Public Participation and Assistance.

1.2 PROJECT AREA AND CURRENT STATUS

Lake Poinsett is located in east central South Dakota in Brookings and Hamlin Counties between the towns of Estelline and Lake Norden. During the Fall of 2007, Lake Poinsett Sanitary District started construction of Phase 1 improvements and are on-going. Phase 1 improvements include:

- Completing the Arlington Beach collections system;
- Completing Stone Bridge collections system;
- Rehabilitation of existing WWTFs; Arlington Beach and Pier 81; and,
- Construction a new WWTF to service Arlington Beach, Methodist Camp and State Park systems.

The planning / service area for this project includes all land within a 1,000 foot wide area around the perimeter of the lake not currently served by wastewater collection facilities. Since Phase 1 improvements area currently under construction, areas to be served by Phase 1 were not considered as part of the planning / service area for this project. The proposed Jody Howard Campground will likely send their wastewater flows to the nearest WWTF operated by the Lake Poinsett Sanitary District. Proposed new WWTF located nearest to the Jody Howard Campground has been projected to handle this additional wastewater load.

The service area of the Lake Poinsett Sanitary District includes approximately 658 service connections. In addition, Lake Poinsett serves thousands of vacationers from South Dakota as well as from other states. The Lake Poinsett Recreation Area, Methodist Camp, and Jody Howard Campground are all facilities located on or near Lake Poinsett. The Lake Poinsett Recreational Area is operated by the South Dakota Department of Game, Fish and Parks and recorded an estimated 20,336 users for the year of 2006. The Methodist Camp is located along the lake shore which neighbors the Lake Poinsett Recreational Area to the west. The Jody Howard campground is in the planning/construction phases. It is expected to offer 68 recreational vehicle spaces. The campground is planned to be constructed on the east side of the Lake Poinsett in Section 23, Township 113 North, and Range 52 West.

The facility plan amendment will investigate the feasibility of a wastewater collection system and WWTFs to treat wastewater generated in the planning/service area. The current means of handling wastewater generated in these areas is privately owned, on-site disposal systems, which utilize septic tanks and drain fields. During previous construction projects systems were encountered that discharged wastewater directly into the lake or had failed drain fields. Improvements to and construction of a wastewater collection system and WWTFs will ultimately effect all residents and other Lake Poinsett users. In an effort to ensure sanitary conditions and environmental longevity, the Lake Poinsett Sanitary District has authorized the preparation of this facility plan amendment.

SECTION 2: EFFLUENT LIMITATION

2.1 SURFACE WATER

The Lake Poinsett Sanitary District currently has a Surface Water Discharge (SWD) Permit to have "no discharge" from its wastewater treatment facilities (WWTFs) at Arlington Beach, Pier 81, Stone Bridge, and the new WWTF constructed during Phase 1 improvements. The existing WWTF for Lake Poinsett Recreation Area operated by South Dakota Game, Fish and Parks will be abandoned as part of the Phase I Improvements. The effluent limits for the existing WWTFs at Arlington Beach, Stone Bridge, Pier 81, and the new Phase 1 WWTF are set by the South Dakota Department of Natural Resources (SDDENR) SWD Permit No.: SD0026450. See Appendix A for complete details of SDDENR SWD Permit No.: SD0026450. The effluent limits and self-monitoring requirements stated in this section come from the SWD Permit No.: SD0026450. The expansion of any existing WWTFs or the construction of new WWTFs are assumed to be under the same or similar requirements detailed in the SDDENR surface SDDENR SWD Permit No.: SD0026450. Applications for permits for proposed new WWTFs will be filed with SDDENR by the Lake Poinsett Sanitary District. The proposed new WWTFs are to utilize total retention stabilization ponds. Although a total retention stabilization pond WWTFs are not anticipated to discharge treated wastewater, a SWD Permit will likely still be required for each WWTF.

2.1.1 Effluent Limits It is anticipated that there shall be no discharge from the Lake Poinsett Sanitary District's WWTFs except in the case of emergency release, bypass, or sanitary sewer overflow of the WWTFs. If an emergency release, bypass, sanitary sewer overflow is expected to occur, the Lake Poinsett Sanitary District shall report the occurrence in accordance with the emergency and noncompliance reporting section of the discharge permit and take

the appropriate measures to minimize the discharge of pollutants. Such measures may include the closing of wastewater sources that contribute the WWTFs until discharge is terminated.

2.1.2 Self-Monitoring Requirements Promptly upon the discovery of an emergency release, bypass, or sanitary sewer overflow of the WWTFs, the discharge shall be monitored as shown below in Table 2.1.

Table 2.1

Discharge Monitoring Requirements

Effluent Characteristic	Frequency	Sample Type[1]
Flow Rate, (MGD)	At least three per discharge[2]	Instantaneous
Total Flow, million gallons	Each discharge	Calculated
Duration of Discharge, days	Each discharge	Calculated
pH, stand units	At least three per discharge[2]	Instantaneous
Total Residual Chlorine, mg/L (only if chlorinating)	At least three per discharge[2]	Instantaneous
Water Temperature, °C	At least three per discharge[2]	Instantaneous
Total Suspended Solids, mg/L	At least three per discharge[2]	Grab or composite
BOD_5, mg/L	At least three per discharge[2]	Grab or composite
Ammonia as N, mg/L	At least three per discharge[2]	Grab or composite
Fecal Coliform, no. /100 mL	At least three per discharge[2]	Grab

[1] See definitions

[2] A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week

The results of the analyses shall be summarized and reported on a photocopy of the Discharge Monitoring Summary Form, and shall be

submitted to the SDDENR as well as to the Environmental Protection Agency (EPA). The request for emergency release and bypass shall describe the events leading to the discharge; steps taken or planned to reduce, eliminate and prevent reoccurrence; describe any adverse affects, duration of the discharge and the total flow; and include analytical test results of the discharge. No discharge shall occur until permission has been granted by the SDDENR. Knowingly discharging from an unauthorized location or failing to report a discharge could subject the Lake Poinsett Sanitary District to penalties as provided under the South Dakota Water Pollution Control Act.

2.2 GROUNDWATER

The Lake Poinsett Sanitary District may have to prepare an application for a Groundwater Discharge Permit if any discharge to the groundwater is required. The proposed new WWTFs are to limit seepage to 1/16" per day. By meeting these seepage limitations it is anticipated that a Groundwater Discharge Permit will not be required.

SECTION 3: ENVIRONMENTAL INFORMATION DOCUMENT

3.1 PROJECT AREA ENVIRONMENT

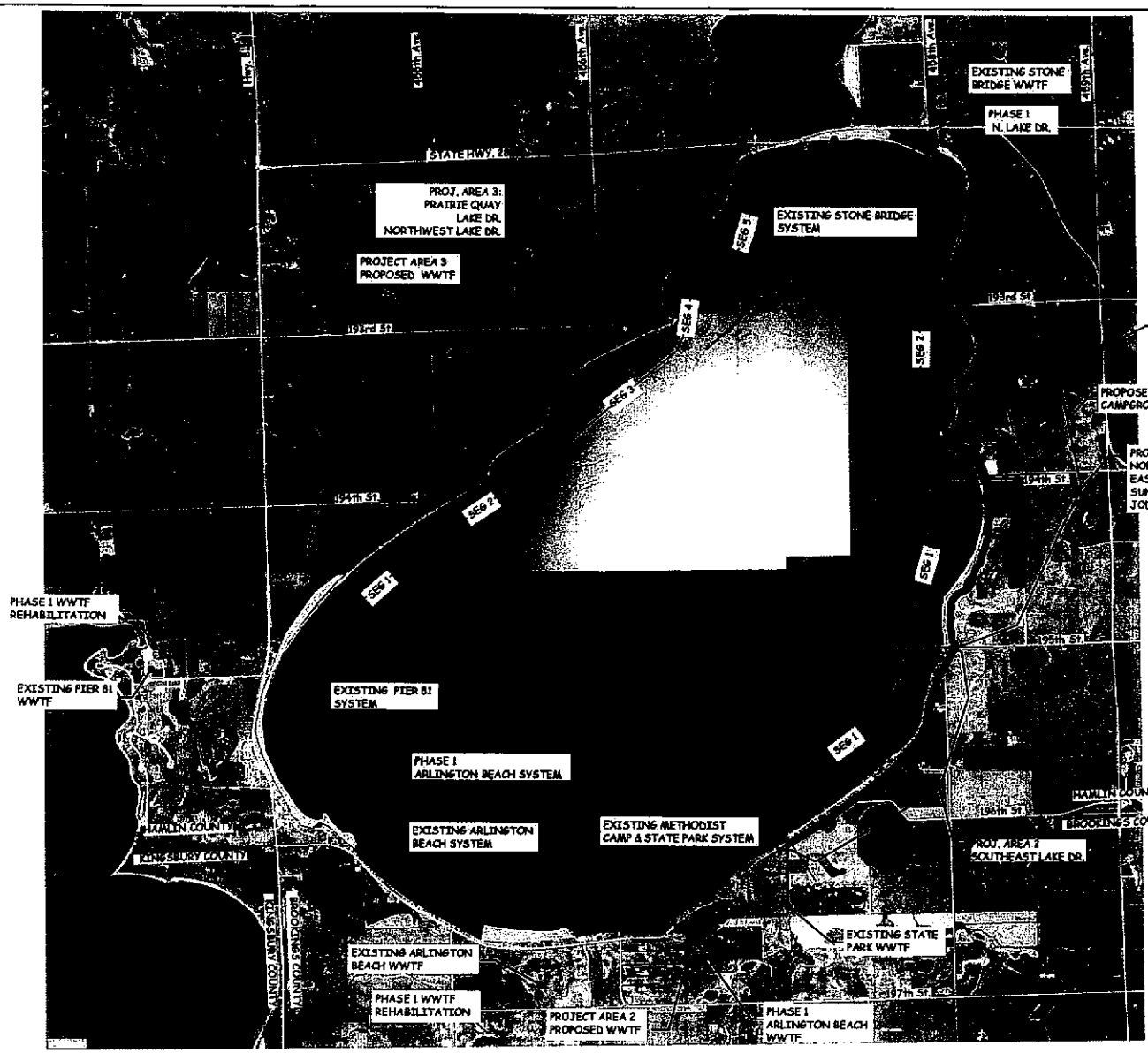
3.1.1 General Description of Project Area and Project: The planning/service area includes all land within a 1,000 foot wide area around the perimeter of Lake Poinsett not currently served by wastewater treatment facilities WWTFs which includes the Jody Howard Campground. Since Phase 1 improvements are currently under construction; areas to be served by Phase 1 improvements will not be considered part of the planning/service area. The proposed new WWTFs and wastewater collection system improvements are designed to handle the current and future projected flows and loads for the planning/service area. A layout plan showing all the project areas is presented in Figure 3.1. The project areas are generally described as follows:

Project Area 1: Northeast Lake Dr., East Lake Dr., Sunset Park Estates, and Jody Howard Campground

Project Area 2: Southeast Lake Dr.

Project Area 3: Prairie Quay, Lake Dr., and Northwest Lake Dr.

Lake Poinsett, located in Brookings and Hamlin Counties, is one of the largest natural lakes in South Dakota. Covering approximately 8,000 acres, the lake has a maximum depth of 19.5 feet with an average depth of 9.5 feet and is used as a recreational area. Lake Poinsett is fed from two sources: (1) a natural watershed enters the lake from the west and connects Lake Poinsett to Lake Albert, Lake St. John, Lake Mary, Lake Norden, Thisted Lake, Badger Lake and Marsh Lake; and (2) and by the Boswell Diversion, which was constructed in 1929 to divert water from the Big Sioux River to Lake Poinsett via Dry Lake. The outlet of Lake Poinsett is located in the northeast section of the lake and is connected to the Big Sioux River.



NORTH SCALE: NONE

PROJECT LAYOUT

BANNER

409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-5342
www.bannerassociates.com

CONSULTANTS:

PROJECT TITLE:

LAKE POINSETT WW COLLECTION & WWTF FACILITY PLAN AMENDMENT

PROJECT LOCATION:

HAMLIN/BROOKINGS CO. SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: C.R.C.
DESIGNED BY: J.J.H.
CHECKED BY: J.P.H.
JOB NO.: 20427.01.00
DATE: MAY, 2009

SHEET TITLE:

PROJECT LAYOUT

SHEET NO.:

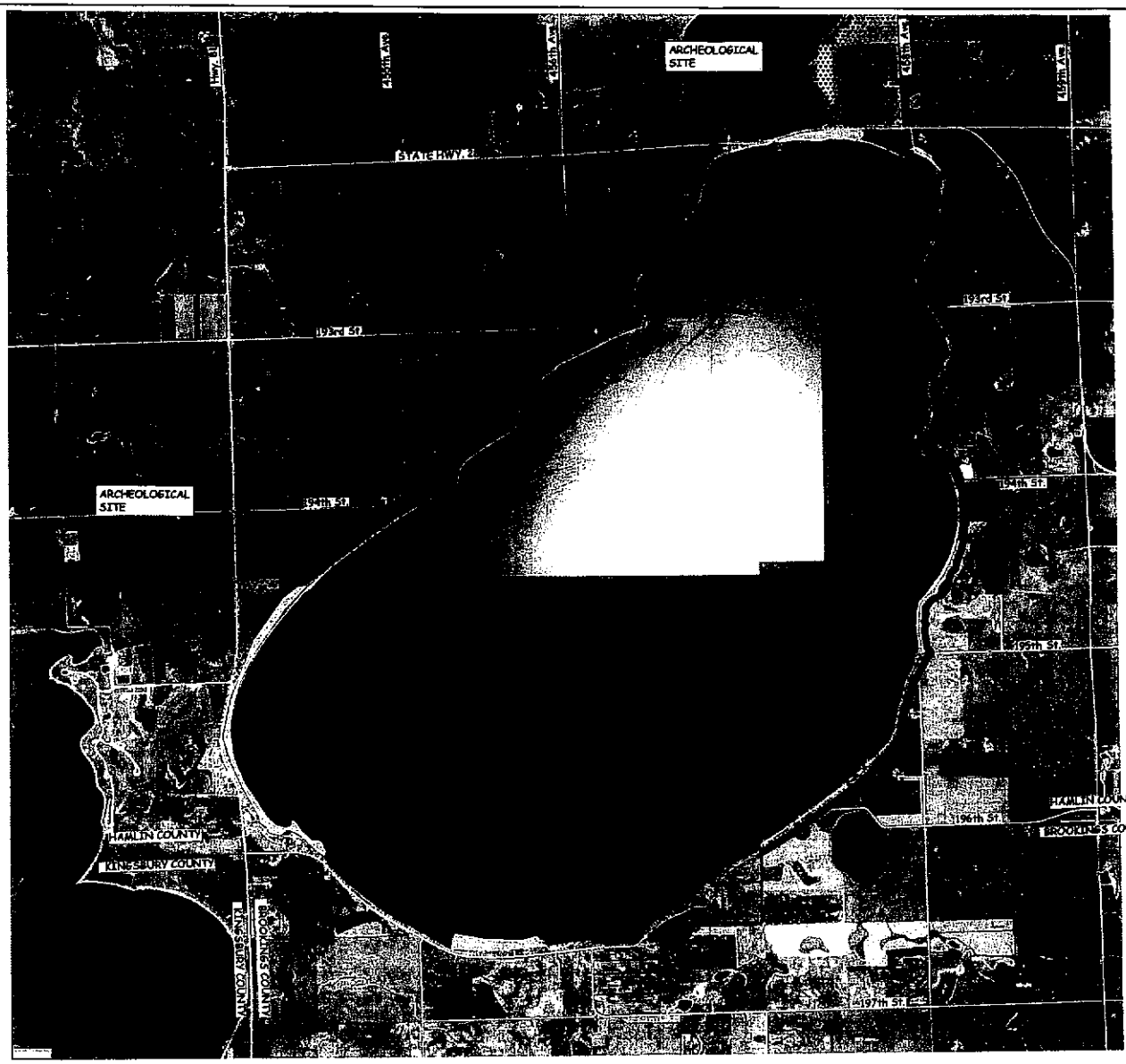
FIGURE 3.1

The topography of the area around Lake Poinsett ranges from relatively flat to rolling. Some areas have beachfronts, which slope gradually to the waters edge where others have steep drop-offs.

3.1.2 Historical, Cultural, and Archaeological: People have inhabited the Lake Poinsett area for hundreds of years. Archaeologists have discovered evidence of Indian villages dating back 500 to 1400 years. Modern day explorers discovered the area in 1835, but it was not until the late 1800's that settlers began to homestead the area. In the early 1900's, people began using Lake Poinsett for recreation. At this time resorts and summer cabins were built. Recreation and leisure activities have grown to the point that presently a large portion of the lake frontage has been developed for these purposes.

The 1986 Facility Plan indicates that previous archeological surveys identify at least four archeological sites on the shores of Lake Poinsett: 39HL2, 39HL3, 39HL4 and 39HL6. There are significant recorded archaeological sites in Sections 10 and 30, Township 113 North, and Range 52 West. None of the proposed WWTFs are located in section 10 or 30, Township 113 North, and Range 52 West. Some of the wastewater collection system piping is proposed to go through section 30 of Township 113 North, and Range 52 West. Figure 3.2 shows the archeological sites in the Lake Poinsett Area. More in-depth on-site archaeological inspections will be requested prior to completion of construction plans and specifications for the projects.

The development of this project should not adversely affect any sites listed in the National Register of Historic Places. Results of the online records search and the Cultural Resources Effects Assessment Summary are included in Appendix B. Construction and operation of the proposed



LEGEND:

- PHASE I - PLANNED IMPROVEMENTS
- EXISTING SYSTEM
- PROPOSED IMPROVEMENTS
- JODY HOWARD'S CAMPGROUND
- EXISTING METHODIST CAMP & STATE PARK
- ARCHEOLOGICAL SITES (39HL2, 39HL3, 39HL4, 39HL6)

ARCHEOLOGICAL SITES

NORTH SCALE: NONE

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DRAWN BY: C.M.C.
DESIGNED BY: T.J.H.
CHECKED BY: T.P.H.
JOB NO.: 20627.01.00
DATE: MAY, 2008

SHEET TITLE:

ARCHEOLOGICAL SITES

SHEET NO.:
FIGURE 3.2

WWTFs are not expected to have any significant adverse short or long term affects on cultural resources in the area. The only apparent potential affects are unearthing historical or archeological resources during construction excavation and covering historical or archeological resources with excavated material. If required, verification of historic sites will be requested from the South Dakota State Office of Cultural Preservation. If archeological or historical resources are unearthed during the excavation process, work will immediately be discontinued as dictated by a required condition in the Contract Specifications.

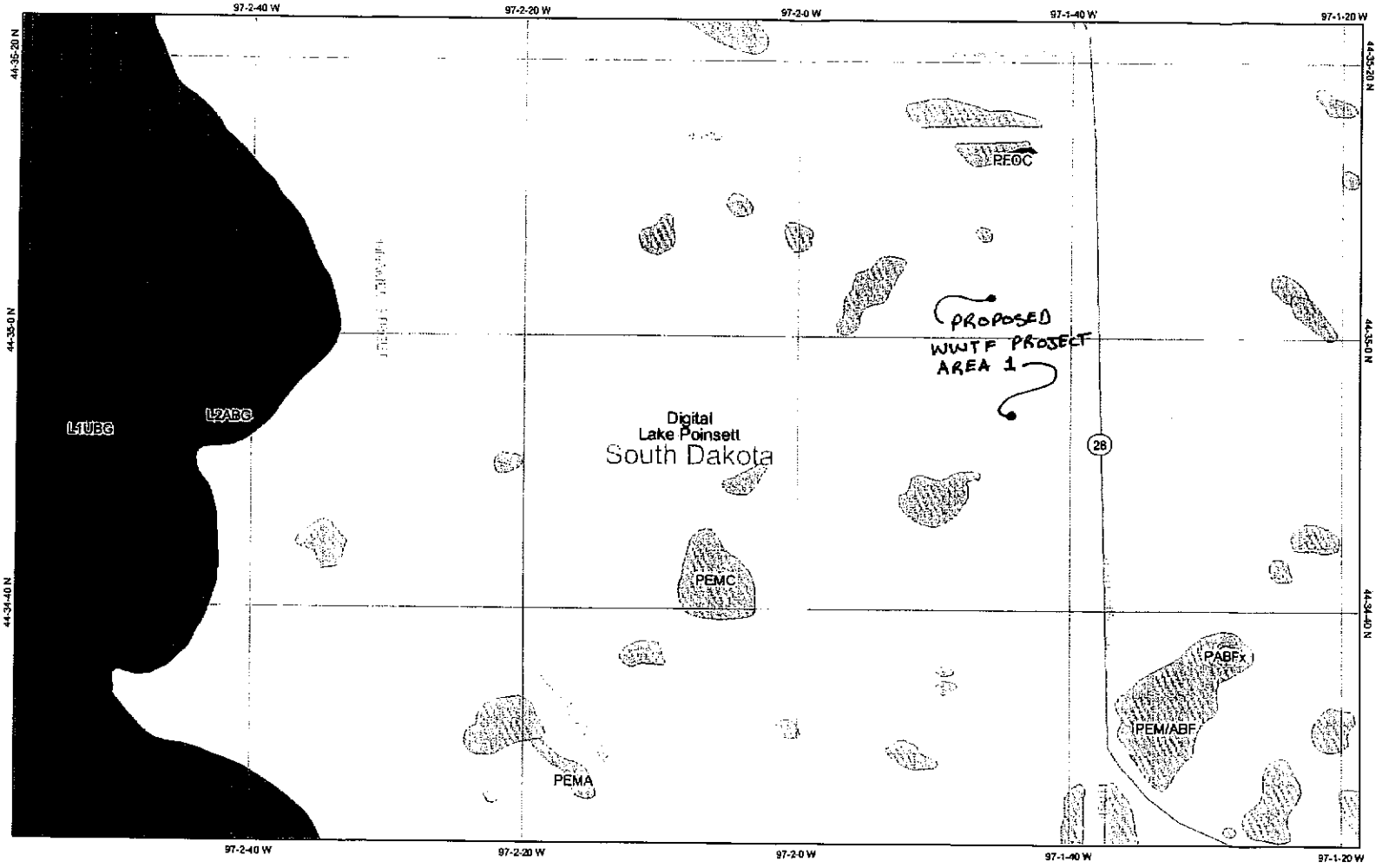
3.1.3 Floodplains, Wetlands, and Aquifers:

3.1.3.1 Floodplain: All proposed WWTFs will be constructed above the 100 year flood elevation.

3.1.3.2 Wetlands: It is anticipated that construction of some collection system lines will impact wetland areas as defined by the National Wetlands Inventory (NWI). Figures 3.3 and Figure 3.4 show a layout of the NWI wetlands in the proposed Project Areas One, Two and Three respectively. Due to the small diameter of the wastewater collection system pipes, no adverse effects are anticipated. Efforts have been made to locate WWTFs away from wetland areas. Natural Resources Conservation Services (NRCS) wetland maps of all areas potentially impacted by construction are presented in Appendix C.

3.1.3.3 Aquifers: The study area is underlain by five major aquifers identified by the South Dakota Geological Survey in two reports entitled "Major Aquifers in Brookings County, South Dakota", 1988 and Major Aquifers in Deuel and Hamlin Counties, South Dakota", 1976. The aquifers in order of increasing depth are the

USFWS NWI Wetlands



Legend

CONUS_wet_scan
- 0
- 1
- Out of range

Interstate
Major Roads
Other Road
- Interstate
- State highway
- US highway

Roads
Cities
USGS Quad Index 24K
Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan

NHD Streams
Counties 100K
Urban Areas 300K
States 100K
South America
North America

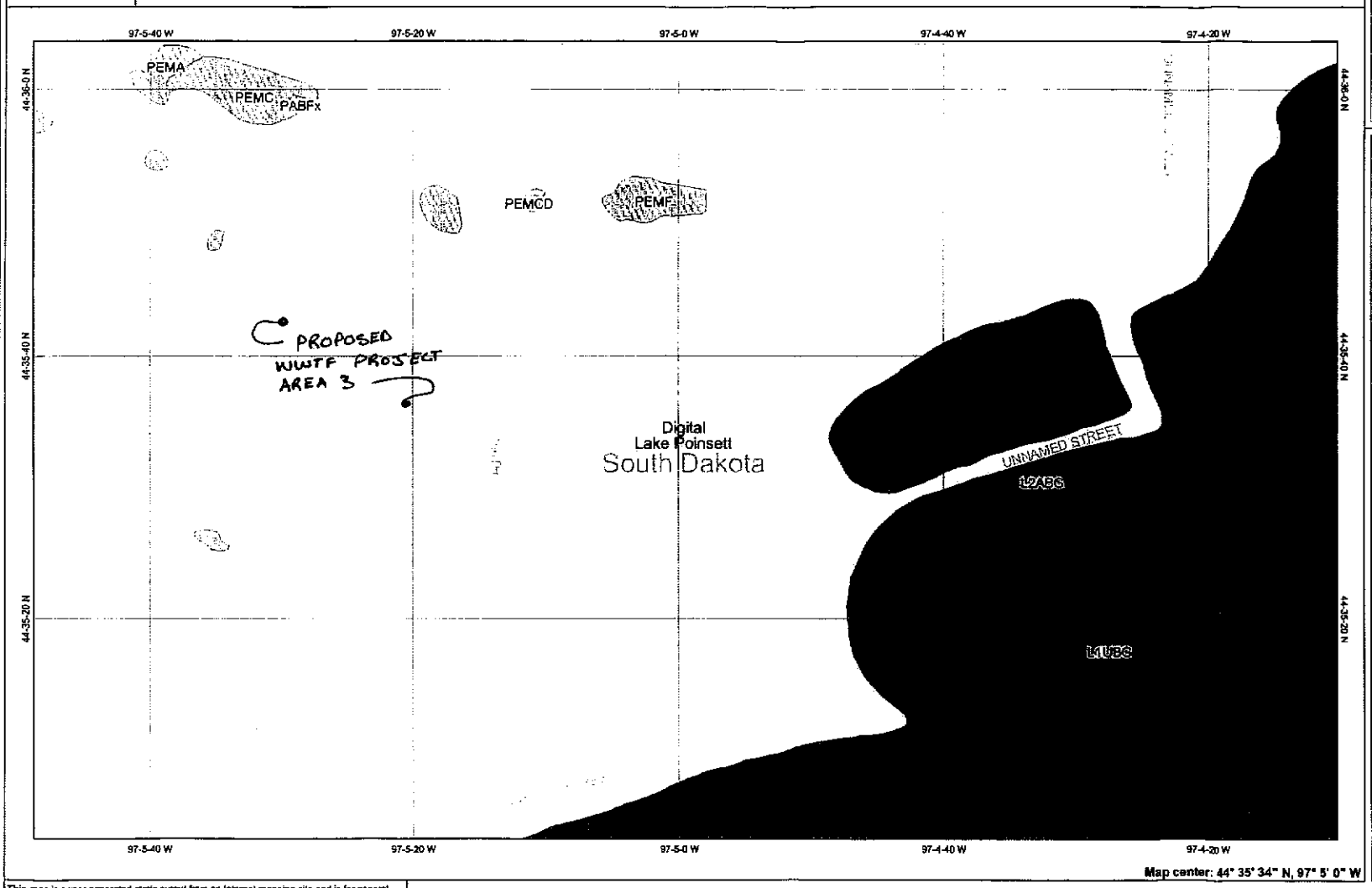
Scale: 1:12,000

Map center: 44° 34' 53" N, 97° 2' 8" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

FIGURE 3.3

USFWS NWI Wetlands



Map center: 44° 35' 34" N, 97° 5' 0" W

Legend

CONUS_wet_scan
- 0
- 1
- Out of range

Interstate
Major Roads
Other Road
Interstate
State Highway
US Highway
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- Riverine

Lower 48 Available Wetland Data
Non-Digital
Digital
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Scan
NHD Streams
Counties 100K
Urban Areas 300K
States 100K
South America
North America

Scale: 1:12,000

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FIGURE 3-4

Big Sioux Aquifer, Prairie Coteau Aquifer, Ramona Aquifer, Howard Aquifer and Altamont Aquifer.

The unconfined Big Sioux Aquifer underlies an area of 470 mi^2; more than one-half of Brookings County and approximately 180 mi^2 of Hamlin County. In the Lake Poinsett area outwash thickness averages about 30 ft and ranges from 5 to 123ft. Depths to the top of the aquifer occurs at the land surface or at a depth of 1 to 4 ft. Well water levels are generally less than 10 ft below ground surface except in hilly slope area where it is greater. Water from the Big Sioux Aquifer is fresh to slightly saline and is a calcium bicarbonate type. Concentrations of dissolved solids range from 300 to 2,200 mg/L in Brookings County, and 346 to 1,500 mg/L in Deuel and Hamlin Counties. Hardness of the water ranges from 400 to 1,640 mg/L in Brookings County, and 270 to 1,000 mg/L in Deuel and Hamlin Counties.

The Prairie Coteau Aquifer occurs throughout most of Deuel and Hamlin Counties. The Prairie Coteau Aquifer commonly overlies the Altamont Aquifer and underlies the Big Sioux Aquifer. The Prairie Coteau Aquifer occurs under artesian conditions. The depth of the water table was only measured in one location in Eastern Deuel County which was found to be at a depth of 147 ft below the ground surface. Water from the Prairie Coteau aquifer is predominantly of calcium sulfate type in some areas, calcium bicarbonate type in other areas, and is slightly saline. Total dissolved solids average 1,830 mg/L with ranges from 636 to 2,950 mg/L; hardness averages 1,036 mg/L with ranges from 240 to 1,800 mg/L. Sodium content of the water averages about 26 percent.

The Ramona aquifer underlies an area of 130 mi^2 in Brookings County. Depths from ground surface to the top of the aquifer range from 51 to 282 ft. The thickness of the aquifer averages approximately 20 ft. Water in the aquifer is confined under till, but wells do not flow. Well water is slightly saline and is a calcium sulfate type. Concentrations of dissolved solids range form 1,400 to 2,600 mg/L. Hardness of the water ranges from 600 to 1,800 mg/L.

The Howard aquifer underlies an area of 350 mi^2 in Brookings County. Depth to the top or the aquifer in the Lake Poinsett area ranges from 320 to 360 ft. The aquifer thickness averages 30ft. In many areas, the aquifer is interbedded with sandy clay (till) that yields relatively little water to wells. Water in the aquifer is confined under till, but water levels are not high enough for wells to flow. Water from the aquifer is slightly saline and is calcium sulfate type. Concentrations of dissolved solids range from 1,100 to 3,400 mg/L. Hardness of the water ranges from 1,100 to 1,800 mg/L.

The Altamont aquifer underlies an area of about 800 mi^2 and in Deuel and Hamlin Counties and 305 mi^2 in Brookings County. The thickness of the aquifer ranges from 3 to 101 ft thick and averages 35 ft. The depth to the top of the aquifer ranges from 151 to 821 ft and averages 475 ft below the ground surface. Water in the well occurs under artesian conditions. The water is slightly saline, total dissolved solids average 1,710 mg/L with range from 914 to 2,530 mg/L. The water hardness is very hard. Hardness averages 535 mg/L with ranges from 310 to 780 mg/L. Sodium content of water ranges from 19 to 82 percent averaging 52 percent.

3.1.4 Agricultural Lands: A small amount of agricultural land is anticipated to be removed from production to facilitate the proposed project(s). No more than 14 acres are anticipated to be affected at any one location. The project(s) should not have long term adverse impacts on the agricultural land surrounding the project site(s).

3.1.5 Wild and Scenic Rivers: There are no registered Wild and Scenic Rivers in the project area.

3.1.6 Fish and Wildlife Resources: Both fish and wildlife are directly dependent upon the quantity and quality of their habitat. Consistent with the rest of the United States, the quantity and quality of wildlife habitat continues to decrease in the Lake Poinsett area. This trend is expected to continue as the Lake Poinsett area develops. Lake Poinsett, along with the surrounding wetlands and farmland provide excellent habitat for many species of birds and animals. Area birds include meadowlarks, robins, sandpipers, heron, egret and white pelican. Area upland game birds include partridge and pheasants. Animals that live in the lake area include squirrels, rabbits, deer, fox, coyotes and muskrats.

3.1.6.1 Fish: Lake Poinsett is capable of maintaining a warm water semi-permanent fishery for species such as walleyes, perch or northern pike, but suffers from occasional fish kills because of changes in critical natural conditions.

3.1.6.2 Wildlife:

3.1.6.2.1 Aquatic and Semiaquatic Species: Lake Poinsett lies within the prairie "pothole" region of the north-central United States which produces about one-half of the U.S.

duck crop in average years. Most common of the local ducks are blue-winged teal, pintail and mallards.

Many other birds are associated with the marshes and wetlands in the area. Common among these are sandpipers, heron, egret and white pelican. Several species of smaller mammals are also common to the aquatic habitat. These include raccoons, mink beaver, and muskrat. During the winter months, the emergent vegetation of some of the wetlands provides cover for upland and bid game species.

3.1.6.2.2 Terrestrial Species: Most species of wildlife in eastern South Dakota can be found in the proposed project area. White-tailed deer are common in shelterbelts and thick marsh vegetation with archery and rifle hunting happening during hunting seasons. Furbearers including fox, muskrats, squirrels, rabbits, and other wildlife are present during all seasons with moderate trapping taking place during the prime season.

The pheasant population fluctuates rather widely but is generally above average. Pheasants are heavily hunted each fall. Occasional covies of partridge are also found. The Lake Poinsett area serves as a flyway for a number of migratory birds and other non-game species of birds. Birds located in the area include meadowlarks, robins along with many game birds such as partridge, pheasants and a variety of waterfowl.

3.1.6.3 Endangered Species: No adverse impacts to threatened and endangered species are expected to occur as a result of the construction activities associated with proposed project(s). A list of threatened and endangered species in Brookings and Hamlin Counties, obtained from the U.S. Fish and Wildlife Service are shown in Table 3.1 and 3.2.

Table 3.1

Hamlin County

Threatened and Endangered Species

Group	Species	Certainty of Occurrence	Status
Bird	Eagle, Bald	Known	T
Fish	Shiner, Topeka[4]	Known	E

4 Although Topeka Shiners have not been formally documented within Clark, Grant, Jerauld, Kingsbury, Lake, Spink, or Yankton Counties, the shiners may still occur in these areas because the counties contain portions of known Topeka Shiner inhabited rivers and/or tributary streams.

Table 3.2

Brookings County

Threatened and Endangered Species

Group	Species	Certainty of Occurrence	Status
Bird	Eagle, Bald[2]	Known	T
Insect	Beetle, American Burying	Possible	E
Fish	Shiner, Topeka	Known	E
Plant	Orchid, Western Prairie Fringed[1]	Possible	T

[1] The counties indicated for the Western Prairie Fringed Orchid are counties with potential habitat. Currently, there are no known populations of this species in South Dakota. Status surveys have been completed for the orchid in South Dakota. However, because of the ecology of this species, there is a possibility that plants may be overlooked.

[2] Bald Eagles have nested in Bennett, Clay, Lyman, Marshall, Minnehaha, Hughes, Gregory, Brown, Yankton, Bon Homme, Spink, Charles Mix, Union, Roberts, and Meade Counties.

3.1.7 Air Quality: In general the proposed project area(s), Brookings County and Hamlin County, have no major air quality problems. Reduced local air quality occurs due to odors from different sources such as livestock feeding operations, manure pits, and numerous other sources. Dust storms also contribute to reduced local air quality, particularly in dry years when inadequate soil cover has been allowed to remain on the ground surface.

The proposed project(s) are not expected to have any long term adverse impacts on the local air quality. There will be short-term impacts during construction due to dust and heavy equipment operation. There will also be a short period of time each spring during WWTF turnover when odor may be produced from the proposed WWTFs.

3.1.8 Water Quality and Quantity:

3.1.8.1 Surface Water: Lake Poinsett is classified in the South Dakota Water Quality Standards for beneficial uses. The beneficial uses are as follows:

- Fish/wildlife propagation and stock watering waters;
- Immersion recreation;
- Limited contact recreation; and,
- Warmwater semipermanent fish life.

Water quality should be maintained suitable for swimming, water skiing, fishing, boating, sailing, picnicking and other kinds of water-related recreation.

The water quality requirements for the designated beneficial use categories are summarized in Table 3.3. The most restrictive

beneficial use category is applied when determining water quality requirements for a discharge from a WWTF. Established effluent limitations set in the SWD permit apply under all flow conditions; however, the proposed WWTFs are total retention stabilization ponds and do not anticipate discharging pollutants that would preclude use of surface waters as designated above.

Table 3.3
Water Quality Requirements for Designated
Beneficial Uses of Surface Water

Parameter	Warmwater sensitive public propagation	Immersion recreation	Limited-contact recreation	Bull, fishing propagation and watering
Total dissolved solids, mg/l				2,500
NO_3, mg/l as N				50[1]/80[2]
pH, units	6.5 to 9.0			6.0 to 9.5
Coliform (per 100 mL)		200 (mean) 400 (single sample)	1,000 (mean) 2,000 (single sample)	
Total Chlorine Res., mg/l	0.019acute 0.011 chronic			
Unionized Ammonia, mg/l as N	0.04/1.75x the criterion			
Dissolved Oxygen, mg/l	>5.0	>5.0	>5.0	
Undissoc. H_2S, mg/l	0.002			
Suspended Solids, mg/l	90[1]/158[2]			2000[1]/3500[2]
Temp., °F	90			
Alkalinity, mg/l as $CaCO_3$				750[1]/1.313[2]
Conductivity, (µmhos/cm @25 °C				4,000[1]/7,000[2]
Total Petroleum Hydrocarbons				<10
Oil and Grease				<10

[1]30-day average [2] daily maximum

3.1.8.2 Groundwater: Soil boring analysis included in the 1986 Facility Plan indicates that normal groundwater levels are within 3 to 5 feet of the ground surface in two isolated areas around Lake Poinsett. One area is along the north side of the lake in the vicinity of Stone Bridge and the other is along the southwest part of the lake in the area of Pier 81. Both areas are served by an existing wastewater collection system and WWTFs. In general, the groundwater table is anticipated to be nearly the same as Lake Poinsett's water surface elevation. The project(s) area not anticipated to result in any discharge of pollutants that would prevent the use of underlying aquifers as public water supplies. The maximum contaminant levels allowable in the groundwater are presented in Table 3.4 and 3.5.

Table 3.4 Maximum Contaminant Levels Allowable in Groundwater
(SD Groundwater Quality Standards Chapter 74:54:01)

Contaminant	Maximum Contaminant Level
Alachlor	0.002 mg/L
Aldicarb	0.003 mg/L
Aldicarb Sulfone	0.003 mg/L
Aldicarb Sulfoxide	0.004 mg/L
Arsenic	0.05 mg/L
Atrazine	0.003 mg/L
Barium	2 mg/L
Cadmium	0.005 mg/L
Carbofuran	0.04 mg/L
Chloradane	0.002 mg/L
Chromium	0.1 mg/L
Copper	1.3 mg/L
Cyanide (weak acid dissociable)	0.75 mg/L
Dibromochloropropane (DBCP)	0.0002 mg/L
o-Dichlorobenzene 0.6 mg/L	0.6 mg/L
cis 1,2-dichloroethylene	0.07 mg/L
trans 1,2-Dichloroethylene	0.1 mg/L
1,2-Dichloropropane	0.005 mg/L
Ethylbenzene	0.7 mg/L
Ethylene dibromide (EDB)	0.00005 mg/L
Fluoride	2.4 mg/L
Heptachlor	0.0004 mg/L
Heptachlor epoxide	0.0002 mg/L
Lead	0.015 mg/L
Mercury	0.002 mg/L
Monochlorobenzene	0.1 mg/L
Nitrate as N	10 mg/L
Nitrite	1 mg/L
Pentachlorophenol	0.001 mg/L
Selenium	0.05 mg/L
Silver	0.05 mg/L
Styrene	0.1 mg/L
Endrin	0.0002 mg/L
Lindane	0.0002 mg/L

Table 3.4 Maximum Contaminant Levels Allowable in Groundwater
(SD Groundwater Quality Standards Chapter 74:54:01)

Contaminant	Maximum Contaminant Level
Methoxychlor	0.04 mg/L
Tetrachloroethylene (PCE)	0.005 mg/L
Toluene	1 mg/L
Toxaphene	0.003 mg/L
2,4-D	0.07 mg/L
2.4.5-TP Silvex	0.05 mg/L
Total Trihalomethanes (THMs)	0.1 mg/L
Fecal Coliform Bacteria	< 2.2 per 100 ml (MPN)
Radium 226 and Radium 228	5 picocuries/L
Gross Alpha to include Uranium	15 picocuries/L
Uranium	0.02 mg/L
Trichloroethylene	0.005 mg/L
Carbon Tetrachloride	0.005 mg/L
Vinyl Chloride	0.002 mg/L
1,2-Dichloroethane	0.005 mg/L
Benzene	0.005 mg/L
1,1-Dichloroethylene	0.007 mg/L
1,1,1-Trichloroethane	0.200 mg/L
para-Dichlorobenzene	0.075 mg/L
Total Hydrocarbons	10* mg/L
Polychlorinated Biphenyls (PCBs)	0.00005 mg/L
Xylene	10 mg/L

* Where Total Petroleum Hydrocarbons are less than or equal to the standard in this section and greater than 0.1 mg/L, and is within the radius of influence of a well or within a delineated wellhead protection area, clean up must continue until 0.1 mg/L is met unless a water quality variance can be obtained in accordance with 74:54:02:03 for an accidental spill or leak if it has been shown by either practice or study that all reasonable other alternatives for groundwater clean up will not result in further removal of contaminant concentrations from the groundwater. Total petroleum hydrocarbons must be analyzed using the California/United States Geological Survey Method published in "Draft Method for Total Petroleum Hydrocarbons and Total Organic Lead," February 1988, or its equivalent.

Table 3.5
Other Standards Not Applicable To Groundwater Receiving Discharge From Publicly Owned Treatment Works (SD Groundwater Quality Standards)

Contaminant	Maximum Contaminant Level
Chloride	250 mg/L
pH	6.5 - 8.5
Sulfate	500 mg/L
TDS	1000 mg/L

3.2 PROJECT PURPOSE AND NEED

The proposed improvements will address existing WWTFs and wastewater collection system determined to be inadequate. The existing WWTFs and wastewater collection system are further described in Section 4 of this report. The proposed alternatives for upgrading the WWTFs are described in Section 6.

The proposed improvements will provide WWTFs with the capability to handle the present and future flows and meet the requirements of the proposed SWD permit as discussed in Section 2.

3.3 PROJECT IMPACT

3.3.1 Direct and Indirect Impacts on Environment: Previous portions of this section have addressed the impact of the proposed project(s) on water quality, fish and wildlife, historical and archaeological sites and air quality. The remainder of this section addresses other impacts of the proposed project and mitigation measures that may be necessary to limit adverse impacts.

3.3.1.1 Land Resources: Construction of the proposed WWTFs and wastewater collection system improvements will require

excavation, leveling, and site grading work at the WWTF site. Potential adverse environmental impacts during construction include short term localized erosion and airborne dust from the construction site through wind action and heavy equipment use. Erosion and sediment control practices include both temporary measures such as erosion control barriers and watering along with long-term measures such as seeding and grading of properly sloped drainage ways. The service area includes the land adjacent to Lake Poinsett and several wetlands. Some WWTFs may be constructed adjacent to wetlands, however due to the small size of WWTFs no adverse effects are anticipated.

3.3.1.2 Air Resources: Air quality may be locally degraded by increased particulate levels during excavation and site grading associated with construction of the proposed WWTF improvements. Temporary increases in construction equipment emissions are not expected to be significant. Measures that can be taken during construction to control excessive airborne dust are listed below.

- Watering and/or the use of dust retardants before and during construction;
- Stabilizing temporary and permanent access roads to prevent erosion;
- Proper placement and compaction of stockpiled soil and excavated material to reduce particulates;
- Regrading, resurfacing, and/or reseeding dust-prone areas and disturbed terrain immediately; and,
- Limiting construction activities during periods of high winds.

Odors from WWTFs is a non-construction related seasonal impact. These odors occur for a couple weeks in the spring of the year when WWTFs experiences anaerobic to aerobic turnover.

Methane gases produced by anaerobic bacteria during the winter are released with the spring ice thaw and may be prevalent until aerobic biological activity resumes. Spring warm up and wave action enhance aerobic biological activity. Properly sized and operated WWTFs should minimize odor production. Adequate WWTF surface area should prevent excessive organic loading. If excessive odors persist for indefinite periods, chemical control (such as ferrous chloride or chlorine addition) is a possible solution.

3.3.1.3 Wildlife Resources: The presence of WWTFs should promote local waterfowl production; provided it is operated to maintain an open water surface during the hatching and rearing season. Small mammals and amphibians are also frequent inhabitants of WWTFs. In South Dakota, WWTFs have been shown to form parts of very productive ecosystems.

3.3.1.4 Cultural Resources: The improvements and operation of WWTFs and improvements to the wastewater collection system are not expected to have any significant adverse short or long-term impact on cultural resources of the area. The only apparent potential affects are unearthing historical or archeological resources during construction excavation and covering historical or archeological resources with excavated material. If an archaeological investigation has not previously been performed at the proposed project site(s), an archaeological investigation and clearance may be required on the site(s) before any construction is to begin. In the event that archaeological or historic resources are unearthed during construction excavation, the immediate stoppage of work, as dictated by the contract specifications, shall occur.

Construction should bring a slight economic boost to the area through the hiring of local labor, retail trade by construction employees, and purchase of miscellaneous building supplies and fuel.

3.3.2 Impact on the Environment with No Improvement Action Taken: If no action is taken to upgrade the existing on-site treatment systems to a wastewater collection system and WWTF the sanitary conditions and environmental longevity of Lake Poinsett could be threatened. The current means of handling wastewater produced in these areas utilizes septic tanks with drain fields. During previous construction projects, on-site disposal systems were encountered that discharge wastewater directly to Lake Poinsett. In summary, the facility should be upgraded to provide a safe and reliable means of handling wastewater.

SECTION 4: CURRENT SITUATION

4.1 WATER SUPPLY

The residents and businesses in the Lake Poinsett area primarily obtain their water from Kingbrook Rural Water System, Inc. Water records obtained from Kingbrook Rural Water System, Inc, show an average daily water usage of 11,832 gal/day for Project Area 1; 8,151 gal/day for Project Area 2; and 19,222 gal/day for Project Area 3. Average daily water usage is based on a 6-month average water usage for the months of August 2006 through December 2006. Some customers are billed on a monthly basis. For monthly billed customers that have received their January 2007 bill; the 6-month average water usage estimate utilizes billing records for the months of August 2006 through January of 2007. Since the 6-month average water usage includes both summer and winter months it was considered to be a reasonable representation of the average water usage for the entire year. Using 3 occupants per residence, the daily per capita water usage was calculated to be 35.4 gpcd. Although this number is lower than normal, one must consider that the Lake Poinsett area is primarily nonpermanent residents. Table 4.1 shows the water usage distribution along with 80% of the water usage compared to wastewater flow estimates using 60 gallons per capita per day (gpcd). Wastewater flow estimates in table 4.1 are an estimate of current wastewater flow and do not include future expansion.

Table 4.1

Water Usage Compared

to Wastewater Flow Estimates

Project Area	Drive	Customers	Ave. Water Usage			80% of Ave. Water Usage	WW estimate
			(Gal/cust./month)	(Gal/day)	(Gal/yr)	(Gal/yr)	(Gal/yr)
1	NE Lake	40	3,337	4,449	1,601,760	1,281,408	1,484,766
	East w/sunset	75	2,953	7,383	2,657,700	2,126,160	2,874,759
	Total	115		11,832	4,259,460	**3,407,568**	**4,359,524**
2	SE	82	2,982	8,151	2,934,288	**2,347,430**	**2,277,310**
3	Prairie Quay	12	5,389	2,156	776,016	620,813	693,990
	87 % of West Lake	131	3,178	13,877	4,995,816	3,996,653	4,258,575
	NW	24	3,986	3,189	1,147,968	918,374	1,040,985
	Total	167		19,222	6,919,800	**5,535,840**	**5,993,550**

[1] Estimate does not include future expansion of Sunset Estates or Prairie Quay for wastewater

[2] Estimate does not include of wastewater for Jody Howard Campground

[3] 87 % of the water usage for West Lake Dr was used because Nessan's and Myklemyre's subdivisions are not included in Project Area 3. Nessan's and Myklemyre's subdivisions incorporate approximately 13% of the homes on West Lake Dr.

[4] Refer to Section 5.2 for WW flow estimation details based on 60 gpcd.

4.2 EXISTING WASTEWATER FACILITIES

4.2.1 Existing Wastewater Treatment Facility: The first stage of the wastewater collection system and wastewater treatment facilities (WWTFs) around Lake Poinsett was completed in 1989. These WWTFs utilize gravity and pressure forcemain collection lines which consist of septic tanks for primary treatment and total retention stabilization ponds for final treatment. The improvements were in three separate areas generally described as Arlington Beach, Pier 81, and Stone Bridge. These improvements included replacing inadequate septic tanks in each service area; installation of small diameter collection pipes, lift stations with pressure forcemain; and construction of a WWTF for each wastewater collection system. The location of these existing facilities is shown in Figure 3.1.

4.2.2 Existing Wastewater Collection System: No wastewater collection system or WWTF exists in areas not already served by Pier 81, Arlington Beach and Stone Bridge systems. Residents are using on-site disposal systems consisting of septic tanks and drain fields.

4.3 INFILTRATION/INFLOW ANALYSIS

There is no infiltration or inflow analysis for the project area(s) because no wastewater collection system exists. All proposed improvements the project area(s) will be constructed by means and methods to minimize infiltration and inflow.

4.4 EXISTING ON-SITE DISPOSAL FACILITIES

The remaining areas around Lake Poinsett not currently served by existing WWTFs described in Section 4.2 utilize on-site disposal systems for wastewater treatment. The actual type of on-site disposal system used at each residence is not known. During previous construction, existing systems were found to range from septic tanks with drain fields to open sewers, which discharged directly into Lake Poinsett. It is anticipated that many of these existing on-site disposal systems will have to be replaced with new septic tanks. The Lake Poinsett Recreation Area managed by Game Fish and Parks (GF&P) operates its own WWTF. The Methodist Camp sends part of its wastewater to the GF&P WWTF. The remaining Methodist Camp wastewater is sent to the existing Arlington Beach WWTF.

Existing on-site disposal systems within the service area should be connected proposed wastewater collection system and WWTFs. It is recommended that all residences and businesses be connected to proposed wastewater collection system and WWTFs.

One of the reasons connection of all the occupied residences in the service area(s) is recommended is for administrative reasons. If all residences are connected, the cost/benefits will be shared by all of the residents within Lake Poinsett Sanitary District.

SECTION 5: FUTURE SITUATION

5.1 POPULATION PROJECTIONS

The project area(s) around Lake Poinsett consist of permanent residents, semi-permanent residents, weekend residents and campers. Population projections for future loading conditions must consider both existing developments and other areas still available for expansion. There are two primary locations for future expansion, Sunset Park Estates located in Project Area One south of Davis Place and Prairie Quay Drive located in Project Area Three just north of Myklemyre's Subdivision. Sunset Park Estates has approximately 49 lots available for future expansion. Prairie Quay Drive has approximately 38 lots available for future expansion. Since there is no census information available specific to the Lake Poinsett area, a residence count utilizing a land survey taken by Banner Assoc. Inc. in December of 2007 was used to estimate population. Garbage collection data obtained from Lake Poinsett Sanitary District was used to calculate the percentage of permanent and nonpermanent residences. Residences that received garbage pick-up 12-months out of the year were designated as permanent. Residences that received garbage pick-up 6-months out of the year were designated as nonpermanent. Both permanent and nonpermanent residences were projected to have 3 people per residence. The number of residences and their designated usage are shown in table 5.1. Table 5.2 shows the lake side dwelling usage distribution based on the garbage collection data. Table 5.3 shows the population estimation for each project area. Because a majority of the properties are used on a nonpermanent basis, the population of the sanitary district varies considerably from one week to the next.

Table 5.1

Residences

Project Area	Counted from Land Survey Total	Garbage pick-up data Total	Permanent	Nonpermanent
1*	128*	119*	37*	82*
2	90	87	16	71
3	161	162	50	112

* Residence count does not include the proposed Jody Howard Campground

Table 5.2

Residence Usage

Project Area	Permanent	Nonpermanent
1*	31%*	69%*
2	18%	82%
3	31%	69%

* Usage distribution does not include the proposed Jody Howard Campground

Population Estimation Calculations:

Project Area One :

128 residences x 31% permanent x 3 people/residence = 119 permanent

128 residences x 69% nonpermanent x 3 people/residence = 265 nonpermanent

384 total residents

Sunset Park Estates (Project Area One-Future Expansion):

49 residences x 31% permanent x 3 people/residence = 46 permanent

49 residences x 69% nonpermanent x 3 people/residence = 101 nonpermanent

147 total residents

Project Area Two:

90 residences x 18% permanent x 3 people/residence = 49 permanent

90 residences x 82% nonpermanent x 3 people/residence = 221 nonpermanent

270 total residents

Project Area Three:

161 residences x 31% permanent x 3 people/residence = 150 permanent

161 residences x 69% nonpermanent x 3 people/residence = 333 nonpermanent

483 total residents

Prairie Quay (Project Area Three-future expansion):

38 residences x 31% permanent x 3 people/residence = 35 permanent residents

38 residences x 69% nonpermanent x 3 people/residence = 79 nonpermanent

114 total residents

Table 5.3

Population Estimation

Project Area	Total	Permanent	Nonpermanent
1	531*	165*	366*
2	270	49	221
3	597	185	412

* Population estimation does not include Jody Howard Campground

5.2 WASTE FLOW AND LOAD PROJECTIONS

Population within project areas varies considerably from week to week because a majority of the residences are used on a nonpermanent basis.

No wastewater flow measuring information is available for residences with on-site disposal systems. Various textbooks and reference sources offer wastewater flow estimates for different types of establishments including campgrounds, resorts and cottages. Those estimates are generally shown as gallons per person per day assuming daily usage on a year-round basis. Since a majority of the sanitary district is comprised of nonpermanent residences utilized on a limited basis, some additional assumptions have been made. Table 5.4 summarizes the wastewater flow rates in gallons per capita per day (gpcd) used for estimating wastewater flows for the Lake Poinsett area.

Table 5.4

Wastewater Flow Projection Criteria

Residence Type	Wastewater Flow Rate (gpcd)
Permanent Residences: 3 people per residence, 365 day/year usage	60
Nonpermanent Residences: 3 people per residence, 180 day/year usage, 50% of residences projected be unoccupied on any given day	60

Table 5.5 shows the resident type and population for each area along with the projected wastewater flow for each area. Estimated flows for the proposed Jody Howard Campground are included in the Project Area One wastewater flows shown in Table 5.5.

Table 5.5

Projected Wastewater Flows

Project Area	Number of Permanent Residents	Number of nonpermanent residents	Projected Wastewater Flow Rate (gal/day)	Projected Wastewater Flow Rate (gal/yr)
1	165	366	16,220*	5,919,900*
2	49	221	6,210	2,266,500
3	185	412	17,190	6,276,300

* Wastewater flow estimates include the proposed Jody Howard Campground

The proposed Jody Howard Campground will likely direct its wastewater flows to the Project Area One wastewater treatment facility (WWTF). The campground is expected to have 35 spaces with individual water and sewer hook-ups along with 33 spaces with only individual water hook-ups. As required by South Dakota Codified Law 74:53:01:20, all recreational and seasonal establishments with individual or small on-site wastewater treatment systems shall be designed to have a capacity at

least equal to the anticipated maximum daily flow. The State required maximum daily flow for parks and travel trailers without individual water and sewer hook-ups per space is 50 gal/day. The maximum daily flow for parks and travel trailers with only individual water hook-ups, per space was assumed to be 150% of the maximum daily flow for parks and travel trailers without individual water and sewer hook-ups. The following maximum daily flow assumptions shown in Table 5.6 apply to the proposed Jody Howard Campground spaces.

Table 5.6
Maximum Daily Flow
Proposed Jody Howard Campground

Establishment	Maximum Daily Flow (gal/space/day)
Parks, Travel Trailers (with individual water and sewer hook-ups)	100
Parks, Travel Trailers (with only individual water hook-ups)	75

The projected wastewater flow rate for Jody Howard Campground is as follows:

Spaces with individual water and sewer hook-ups:

35 spaces x 100 gal/day/spc. = 3,500 gal/day

Spaces with only individual water hook-ups:

33 spaces x 75 gal/day/spc. = 2,475 gal/day

Total projected wastewater flow = 5,975 gal/day.

Assuming Jody Howard Campground is 80% full three days a week for the summer months of June, July and August, the estimated flow for this time frame is as follows:

80% full x 91days of summer (3/7) x 5,975 gal/day = 186,420 gal.

Jody Howard Campground was projected to be 20% full for four days a week during the summer months of June, July and August. The projected summer flows are as follows:

20% full x 91 days of summer (4/7) x 5975 gal/day = 62,140 gal.

Jody Howard Campground was projected to be 50% full two days a week and empty four days a week for the spring and fall months. Spring and Fall months include the second half of April, all of May, all of September, and the first half of October. The projected Spring and Fall flows are as follows:

50% full x 92 days of spring/fall x 5975 gal/day = 78,530 gal.

Jody Howard Campground was projected to be empty or unused during the remaining winter months. The total wastewater flow for the year is:

186,420 gal. +62,140 gal. + 78,530gal. = 330,000 gal./yr

The organic loading to WWTFs was projected to be 0.22 pounds of BOD_5 per person per day. The organic loading projections shown in Table 5.7 are for the Lake Poinsett area accounts for future expansion areas noted in Section 5.1. Population equivalence was calculated by dividing the estimated wastewater flow in gallons/day by 60 gpcd to yield an equivalent population. The equivalent population was then multiplied by 0.22 pounds of BOD_5 per person per day to yield BOD_5 loading in pounds per day. If individual on-site septic tanks of residences in the project area(s) are left in place, it will likely decrease the organic loading to WWTFs. No credit for organic removal was given for individual on-site septic tanks being retained.

Table 5.7

Organic Loading

Project Area	Equivalent Population (people)	BOD_5 Load (lbs/day)
1	270	59.5
2	103	22.8
3	287	63.1

5.3 INDUSTRIAL PROJECTIONS

There is no existing industrial development within the proposed project area(s) that would cause an impact on water or wastewater requirements, and no industrial development is expected in the next 20 years.

5.4 ON-SITE DISPOSAL

Residences within the project areas have on-site disposal systems consisting primarily of septic tanks and drain fields. During previous construction projects, on-site disposal systems were encountered that discharged wastewater directly to Lake Poinsett. Inspection/removal and replacement of on-site waste disposal systems from areas subject to flooding will reduce potential health problems, odors and unsightly conditions. It is recommended that all on-site disposal systems within the project area(s) be upgraded as necessary and connected to the proposed wastewater collection system and WWTFs. Connection of all services to the wastewater collection system will eliminate the potential health problems that may result from the discharge of septic tank effluent into inadequate or inappropriate on-site disposal systems.

5.5 FUTURE ENVIRONMENT WITHOUT THE PROJECT

Some residences in the project area(s) are prone to flooding. Flooding of on-site disposal systems presents public health hazards. Untreated wastewater flooded to the ground surface results in odor problems, unsightly conditions and a breeding ground for insects. Many diseases can be transmitted as a result of insects,

animals or humans coming in contact with wastewater. In addition to above ground contamination, flooding of on-site disposal systems can cause negative impacts to groundwater aquifers and Lake Poinsett. These impacted waters can migrate into water supplies utilized by livestock and people.

SECTION 6: EVALUATION OF ALTERNATIVES

6.1 GENERAL REQUIREMENTS AND CONSTRAINTS

6.1.1 Effluent Limitations It is likely that the discharge permit for treatment facilities to be planned in the project areas will be the same or similar to the Surface Water Discharge (SWD) Permit No.: SD0026450 which governs the existing wastewater treatment facilities (WWTFs) in the Lake Poinsett area. See Appendix A for complete details of SWD Permit No.: SD0026450. The governing SWD Permit directs the Lake Poinsett Sanitary District to have "no-discharge" from its current wastewater treatment facilities. It is anticipated that there shall be no discharge from the Lake Poinsett Sanitary District's WWTF facility except in the case of emergency release, bypass, or sanitary sewer overflow of the WWTFs. No discharge shall occur until permission has been granted by the South Dakota Department of Natural Resources (SDDENR). If any discharge from WWTFs takes place it shall be performed in accordance with the governing SWD Permit that will be obtained after construction of new WWTFs. Refer to Section 2 of this report for a more detailed description of surface water effluent limitations.

6.1.2 Site Conditions The proposed location(s) for WWTFs within the project areas are not finalized. All proposed WWTF sites are dependent upon land availability and further investigation of site conditions.

The proposed site for the WWTF to serve Project Area One is in the Southeast ¼ of the Northeast ¼ of Section 23, Township 113 North, Range 52 West. The soil survey of Hamlin County as completed by the United States Department of Agriculture (USDA) indicates the soil qualities in the area selected for the WWTF are as follows: ByC, PwB, PsC, Oh, BtD.

ByC: Buse-Poinsett complex, 40-55% Buse, 30-40% Poinsett;
6-9 percent slopes;

Drainage Class: well drained;

Depth to bedrock: very deep;

Depth to seasonal high water table is more than 6 feet;

No flooding, No ponding;

Permeability: Buse-moderately slow, Poinsett-moderate; and,

Organic Matter content: Buse-Moderatly Low, Poinsett-High.

PsC: Poinsett-Buse-Waubay Complex;

30-50% Poinsett; 20-40% Buse, 15-25 Waubay, 5-10% Contrasting Inclusions;

2-9 percent slopes;

Drainage Class: Poinsett & Buse-well drained, Waubay-Moderately well drained;

Depth to bedrock: very deep;

Depth to seasonal high water table is more than 6 feet for Poinsett and Buse, 3.5-5.0 for Waubay;

No flooding, No ponding;

Permeability: Buse-moderately slow, Poinsett & Buse-moderate; and,

Organic Matter content: Buse-Moderatly Low, Poinsett & Waubay – High.

PwB: Poinsett-Waubay silty clay loams;

60-80% Poinsett, 15-25% Waubay, 5-15% Contrasting Inclusions;

1-6 percent slopes;

Drainage Class: Poinsett-well drained, Waubay-Moderately well drained;

Depth to bedrock: Very deep;

Depth to seasonal high water table is more than 6 feet for Poinsett, 3.5-5.0 for Waubay;

No flooding, No ponding;
Permeability: moderate; and,
Organic Matter content: High.

Oh: Oldham Silty clay loam;

80-90% Oldham, 10-20% Contrasting Inclusions;
0-1 percent slopes;
Drainage Class: very poorly drained;
Depth to bedrock: Very deep;
Depth to seasonal high water table is 0.5 to 1.5ft;
No flooding, occasional ponding for brief periods;
Permeability: Slow; and,
Organic Matter content: High

BtD: Buse-Barnes loams;

45-55% Buse, 35-45% Barnes, 5-15% Contrasting Inclusions;
9-20% percent slopes;
Drainage Class: Well drained;
Depth to bedrock: Very deep;
Depth to seasonal high water table is more than 6 ft;
No flooding, No ponding;
Permeability: Moderately Slow; and,
Organic Matter content: Barnes-High, Buse-Moderately low.

The proposed site for the WWTF to serve Project Area Two is located south and adjacent to the existing Phase 1 State Park WWTF. The proposed Project Area Two WWTF would share dike embankment with the Phase 1 new State Park WWTF. Sharing dike embankment would reduce excavation costs as well as lessen the overall footprint of the proposed Project Area Two WWTF. During the fall of 2007, construction of Phase 1 improvements started and are currently nearing completion. The Phase 1

State Park WWTF is located in the East ½ of the Southwest ¼ of Section 4, Township 112 North and Range 52 West. Geotek Incorporated performed soil borings and analysis in the area of the proposed site for the WWTF to serve Project Area Two in 2005 (report #05-994). The soils were found to be suitable for a total retention pond stabilization liner. The soil type was sandy lean clay, brown.

The proposed site for the WWTF to serve Project Area Three is located in the Southeast ¼ of the Northeast ¼ of Section 17, Township 113 North, Range 52 West. The soil survey of Hamlin County as completed by the USDA indicates the soil qualities in the proposed site for the Project Area Three WWTF are as follows: BrA.

BrA: Brandt silty clay loam, 80-90% Brandt, 10-20% contrasting inclusion;
0-2 percent slopes;
Drainage Class: well drained;
Depth to bedrock: very deep;
Depth to seasonal high water table is more than 6 feet;
No flooding, No ponding;
Permeability: Moderate in silty sediments and very rapid in the underlying gravelly material; and,
Organic Matter content: High.

6.2 DESCRIPTION OF ALTERNATIVES

6.2.1 General: The alternatives evaluated for the wastewater collection system and WWTFs are described in this Section. The alternatives presented for the WWTFs are sized using projected flows and organic loadings described in Section 5. The hydraulic loadings were calculated using SDDENR's required minimum per capita flow of 60 gallons per capita per day (gpcd). The organic loadings were calculated using 0.22 pounds of BOD_5 per

person per day. Organic loading on the WWTFs are not to exceed 20 pounds of BOD_5 per acre per day. Two treatment system alternatives are presented detailing different methods to achieve treatment of wastewater. Refer to Appendix D for detailed calculations of WWTF sizing and material quantities.

Construction of a single wastewater collection system and WWTF to serve all proposed project areas was determined to be uneconomical since the project areas are widely separated from each other around Lake Poinsett.

Due to the low wastewater flows and the seasonal population of the Lake Poinsett area, it is very important to provide simple, economical treatment options. Treatment processes that utilize mechanical equipment, such as an oxidation ditch or those that have daily maintenance and inspection needs, were not considered as a viable alternative for this project. Total retention stabilization ponds were determined to be the most economical and maintenance free wastewater treatment system that could be constructed to serve each project area. The proposed total retention stabilization ponds would be similar to existing Stone Bridge, Arlington Beach, Pier 81, and State Park WWTFs.

As cited in the 1986 Facility Plan, a rapid infiltration land based treatment process could probably be operated successfully if personnel were available to properly manage the facility. Such a process would require a lagoon for primary treatment and winter storage. Following the lagoon would be two small infiltration/percolation (I/P) cells. During summer months, effluent from the lagoon would be discharged to one of the I/P cells where wastewater would filter through soil layers to the groundwater. The process requires that an I/P cell be flooded for a few days, then allowed to dry. Therefore, an operator is required to switch flows from one cell to the other every few days.

According to the 1986 Facility plan, a rapid infiltration land based treatment process could be designed with somewhat smaller surface area than a total retention stabilization pond. The increased construction cost associated with the I/P cells and the need for more operational responsibility make the rapid infiltration system a less desirable treatment alternative than total retention stabilization ponds.

Treatment System Alternatives:

- Treatment System Alternative One: Total Retention Stabilization Pond System with on-site disposal systems (septic tanks) retained.
- Treatment System Alternative Two: Total Retention Stabilization Pond System with on-site disposal systems (septic tanks) removed.

6.3 EVALUATION OF TREATMENT SYSTEM ALTERNATIVES

6.3.1 Treatment System Alternative One - Total Retention Stabilization Pond System with on-site disposal systems (septic tanks) retained:

The sizes of the WWTFs was calculated on a flow rate basis in accordance with the projected flows and organic loading described in Section 5. Organic loading is not to exceed 20 pounds of BOD_5 per acre per day. No credit for organic removal was given for individual on-site septic tanks being retained. Refer to Appendix D for detailed calculations of WWTF sizing and material quantities.

The minimum WWTF sizes presented in Table 6.1 are water surface areas at the average operating depth (3.5ft). Alternative One proposes WWTFs utilize gravity and pressure forcemain collection lines, which consist of septic tanks for primary treatment and total retention stabilization ponds for final treatment. Alternative 1 would be identical to the existing wastewater collection system and WWTFs currently servicing Stone Bridge, Pier 81, and Arlington Beach areas along with the new Phase 1 State Park WWTF.

Retaining the existing on-site disposal systems would reduce the organic loading on the WWTFs along with keeping the solids from flowing to the wastewater collection system. It is important that septic tanks are properly sized and maintained in-order to insure solids are retained in the septic tanks and do not clog the collection system, as well as to mitigate any potential environmental or health impacts to the Lake Poinsett area. Septic tanks should be pumped at least once every five years. More frequent septic tank pumping would likely be required for residences with garbage disposals. Removal of the solids from the wastewater collection system would decrease the necessary pipe diameter from 8-inch to 6-inch. This would reduce the cost of the wastewater collection system. The SDDENR required minimum pipe diameter and velocity for gravity sewer pipes carrying partially treated wastewater is 4-inch, at 1.5 feet per second. Existing on-site disposal systems would need to be inspected. Drain fields and other non-septic tank on-site disposal systems would need to be removed or otherwise rendered unusable. Septic tank supernatant would be discharged to the proposed wastewater collection system and WWTFs. Since on-site septic tanks would remain in-place, the wastewater collection system and WWTFs would be considered a gray water system. The current condition of the existing on-site disposal systems is unknown. Therefore, all on-site disposal systems will be inspected. Depending on the condition of existing on-site disposal systems, they may require replacement or may only need to be pumped and cleaned. It was projected that 50% of the existing on-site disposal systems will require removal and replacement with new, and 50% of the existing on-site disposal systems will require pumping only. It was projected that all septic tanks in future expansion areas would be in good condition and require pumping only.

Table 6.1

Minimum Size of Proposed WWTFs for

Treatment System Alternative One and Two

Project Area	Required Minimum WWTF Water Surface Area (acres)	
	Hydraulic Loading	Organic Loading
1	7.4	3.0
2	2.9	1.1
3	7.9	3.2

The capital cost estimates for Treatment System Alternative One are summarized in Tables 6.2, 6.3 and 6.4. The cost estimates for this alternative use 6-inch PVC gravity sewer with a minimum 0.3% slope. An itemization of the probable project costs for Alternative One is attached in Appendix E.

Table 6.2

Treatment System Alternative One (Project Area One): Total Retention Stabilization Pond System with on-site disposal systems retained

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$4,644,000
Design and Resident Engineering	$525,000
Project administration and Legal	$233,000
Opinion of Probable Project Cost	**$5,402,000**

Table 6.3

Treatment System Alternative One (Project Area Two): Total Retention Stabilization Pond System with on-site disposal systems retained

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$2,644,000
Design and Resident Engineering	$298,000
Project administration and Legal	$133,000
Opinion of Probable Project Cost	**$3,075,000**

Table 6.4

Treatment System Alternative One (Project Area Three): Total Retention Stabilization Pond System with on-site disposal systems retained

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$5,780,000
Design and Resident Engineering	$691,000
Project administration and Legal	$291,000
Opinion of Probable Project Cost	**$6,762,000**

Table 6.5 summarizes the increase to the existing operation and maintenance costs for Treatment System Alternative One. Since the proposed WWTFs are total retention stabilization ponds, it is anticipated that there shall be no sampling required except in the case of emergency release, bypass, or sanitary sewer overflow of the WWTFs. Quarterly Discharge Monitoring reports (DMR's) are required even if there is no discharge. The wastewater collection system should be cleaned periodically. Reliability of this type of system is very high and annual cost of operation and maintenance is minimal.

Table 6.5

Annual Operation and Maintenance Cost

Treatment System Alternative One

Description of Item	Alternative One (Total Retention w/ on-site disposal systems retained)
Liability /work comp insurance	$1,550
Paid Mileage	$450
Payroll/payroll taxes	$4,240
Utilities (including lift stations)	$11,680
Call-in Sewer Locates	$460
Repairs/ Maintenance	$44,580
Total	**$62,960**

6.3.2 Treatment System Alternative Two - : Total Retention Stabilization Pond System with on-site disposal systems (septic tanks) removed: The sizes of the WWTFs was calculated on a flow rate basis in accordance with the projected flows and organic loading described in Section 5 of this Report. Organic loading is not to exceed 20 pounds of BOD_5 per acre per day. Refer to Appendix D for detailed calculations of WWTF sizing and material quantities. The required minimum size for Treatment System Alternative Two WWTFs are the same as the required minimum size for Treatment System Alternative One WWTFs. The required minimum size for Treatment System Alternative Two WWTFs can be seen in Table 6.1.

Elimination of on-site disposal systems would increase the organic loading to the total retention pond. This could possibly decrease the air quality in the surrounding WWTF area and thereby potentially decrease the local air quality.

The recommended minimum pipe diameter by SDDENR for raw wastewater is 8-inch. SDDENR recommends that pipes carrying raw wastewater when flowing full provide a mean velocity of not less than 2.0 feet per second thus requiring a minimum 0.4% slope for 8-inch diameter pipe. The 8-inch diameter gravity sewer pipes will increase the wastewater collection system costs over Alternative One. Removal of on-site disposal systems would mitigate the risk of environmental or health impacts to the Lake Poinsett area associated with improper maintenance of septic tanks.

The capital cost estimates for Alternative Two are summarized in Table 6.6, Table 6.7 and Table 6.8. The cost estimate for this alternative uses 8-inch diameter PVC gravity sewer pipe with a minimum 0.4% slope. An itemization of the probable project costs for Alternative Two is attached in Appendix F.

Table 6.6

Treatment System Alternative Two (Project Area One) –

Total Retention Stabilization Pond with on-site disposal systems removed

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$4,582,000
Design and Resident Engineering	$519,000
Project administration and Legal	$230,000
Opinion of Probable Project Cost	**$5,331,000**

Table 6.7

Treatment System Alternative Two (Project Area Two) –

Total Retention Stabilization Pond with on-site disposal systems removed

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$2,593,000
Design and Resident Engineering	$292,000
Project administration and Legal	$130,000
Opinion of Probable Project Cost	**$3,015,000**

Table 6.8

Treatment System Alternative Two (Project Area Three) –

Total Retention Stabilization Pond with on-site disposal systems removed

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$5,698,000
Design and Resident Engineering	$681,000
Project administration and Legal	$286,000
Opinion of Probable Project Cost	**$6,665,000**

Table 6.9 summarizes the increase to the existing operation and maintenance costs for Treatment System Alternate Two. Since the proposed WWTFs are total retention stabilization ponds, it is anticipated that there shall be no sampling required except in the case of emergency

release, bypass, or sanitary sewer overflow of the WWTFs. Quarterly Discharge Monitoring reports (DMR's) are required even if there is no discharge. The wastewater collection system should be cleaned periodically. Reliability of this type of system is very high and annual cost of operation and maintenance is minimal.

Table 6.9

Annual Operation and Maintenance Cost estimates

Treatment System Alternative Two

Description of Item	[illegible]
Liability /work comp insurance	$1,550
Paid Mileage	$450
Payroll/payroll taxes	$4,240
Utilities (including lift stations)	$11,680
Call-in Sewer Locates	$460
Repairs/ Maintenance	$44,580
Total	**$62,960**

6.4 "NO-ACTION" ALTERNATIVE

Some residences in the project area(s) are prone to flooding. Flooding of on-site disposal systems presents public health hazards. Untreated wastewater flooded to the ground surface results in odor problems, unsightly conditions and a breeding ground for insects. Many diseases can be transmitted as a result of insects, animals or humans coming in contact with wastewater. In addition to above ground contamination, flooding of on-site disposal systems can cause negative impacts to groundwater aquifers and Lake Poinsett. These impacted waters can migrate into water supplies utilized by livestock and people. In addition, several instances of on-site treatment systems being discharged to the lake have been discovered during past construction projects.

6.5 COST EFFECTIVENESS SUMMARY:

6.5.1 Annual Debt Retirement. It will likely not be economically feasible to design/construct proposed wastewater collection systems and WWTFs for the Lake Poinsett Sanitary District unless substantial grants and low interest loans are obtained. Grants and loans for wastewater projects may be available from the Governor's Office of Economic Development, which administers the Community Development Block Grant (CDBG). Grants and loans are similarly available through the South Dakota Department of Environment and Natural Resources. The State of South Dakota administers the State Revolving Loan Fund (SRF), which makes low interest loans available (3.25% for 30 years). The comparison in Table 6.10 was prepared using an interest rate of 3.25% for a 30 year term.

6.5.2 Equivalent Annual Cost Evaluation: This evaluation is presented as a basis of comparing wastewater collection systems and WWTFs which may be more capital intensive with other wastewater collection systems and WWTFs which are more operation and maintenance intensive. Equivalent annual costs are the annual debt retirement plus the annual operational and maintenance costs. Annual debt retirement, for this evaluation, was calculated based on the opinion of probable project costs with no grants available. Table 6.10 summarizes the equivalent annual cost for each alternative.

Table 6.10

Equivalent Annual Costs

Alternative	Annual Debt Retirement	Annual O & M	Equivalent Annual Cost
Alt. 1 - Total Retention w/ on-site disposal system retained	$1,048,121	$62,960	$1,111,081

Alt. 2 - Total Retention w/ on-site disposal system removed	$1,032,440	$62,960	$1,095,400

6.6 CONCLUSIONS:

6.6.1 Treatment Process: Two different treatment alternatives have been evaluated in this section. The first alternative is to construct total retention stabilization ponds and utilize on-site septic tanks. Alternative One matches the existing wastewater collection systems and WWTFs around Lake Poinsett which has proven to work well for many years. Utilizing the on-site disposal systems would decrease the organic loading on the WWTFs likely lessening the resultant odor. The estimated annual cost for Alternative One is approximately the same as Alternative Two. Alternative One was selected because of reduced odors caused by WWTFs, and it matches the existing wastewater collection system and WWTFs around Lake Poinsett which has worked well for years. It is important that septic tanks are properly sized and maintained. Proper maintenance will insure solids are retained in the septic tanks and do not clog the wastewater collection system, as well as to mitigate any potential environmental or health impacts to the Lake Poinsett area.

The second alternative is a total retention stabilization pond for each project area and does not utilize on-site disposal systems. Removal of on-site disposal system would mitigate the risk of environmental or health impacts to the Lake Poinsett area associated with improper maintenance of septic tanks. Removal of on-site disposal systems would increase the organic loading to the WWTFs; potentially decreasing the local air quality. Alternative Two is not recommended because it costs nearly the same as Alternative One and would likely have stronger odors caused by organic loading of the WWTFs. Alternative Two would not match existing

wastewater collection system and WWTFs around Lake Poinsett which have proven to work well for many years.

Significant grants and loans will be required in order to make proposed improvements economically feasible. Completion of proposed improvements would allow the Lake Poinsett Sanitary District to provide a reliable, safe and effective means of handling wastewater for all residents around Lake Poinsett. Completion of this work is vitally important to the environment around Lake Poinsett and to the health of all residents and visitors to the Lake Poinsett area.

SECTION 7: THE SELECTED PLAN

7.1 INTRODUCTION

This section summarizes the recommended wastewater collection system and wastewater treatment facilities (WWTFs) for the Lake Poinsett Sanitary District. The recommended plan includes construction of three total retention stabilization ponds, construction of a wastewater collection system along with inspection/removal and replacement of on-site disposal systems. The treatment system was sized in accordance with design conditions presented in Section 5. The recommended plan for the wastewater collection system and WWTFs matches the existing Lake Poinsett Sanitary District wastewater collection system and WWTFs.

7.2 PROJECT AREA SEGMENTS

In order to the make the proposed plan financially feasible, the planning/service area was broken up into three project areas. Each project area was broken into segments.

Project Area One consists of two segments. Segment One starts at 195th Street and goes north to 194th Street. Segment One includes the Sunset Park Estates, Miller Place, and Davis Place subdivisions. Segment Two starts at 195th Street and goes north to the end of Northeast Lake Drive, including Prestrude's, Bakkes's, Oliver Gottschalk's, Forrest Gottschalk's, Nelson Beach, and Bal Beach subdivisions.

Project Area Two consists of only one segment. Segment One includes all of the residences along Southeast Lake Drive including Hendrickson's Beach, Eisele's No. 1, RNR Estates, Eisele's Block 3, and Wacek Beach subdivisions. This segment extends from the east side of the Lake Poinsett State Park to 195th Street.

Project Area Three consists of five segments. Segment One starts at the south end of the Prairie Quay Subdivision and goes north to Indian Knolls subdivision. Segment Two starts at Olsen's subdivision on West Lake Drive and goes north to an unnamed stream that discharges to Lake Poinsett at Nitteberg Beach subdivision. Segment Two includes Olsen's, Iverson's and part of Nitteberg Beach subdivisions.

Segment Three starts at the unnamed stream that discharges to Lake Poinsett at Nitteberg Beach subdivision and goes north to Grapes Point. Segment Three includes part of Nitteberg Beach and Grape's subdivisions. Segment Four starts at Grape's Point and goes north to Saaranen's Point. Segment Five starts at Saaranen's Point and goes north to 192nd Street including Saaranen's Beach, and Nitteberg Out Lot 1 subdivisions.

7.3 PROCESS DESCRIPTION: TREATMENT SYSTEM.

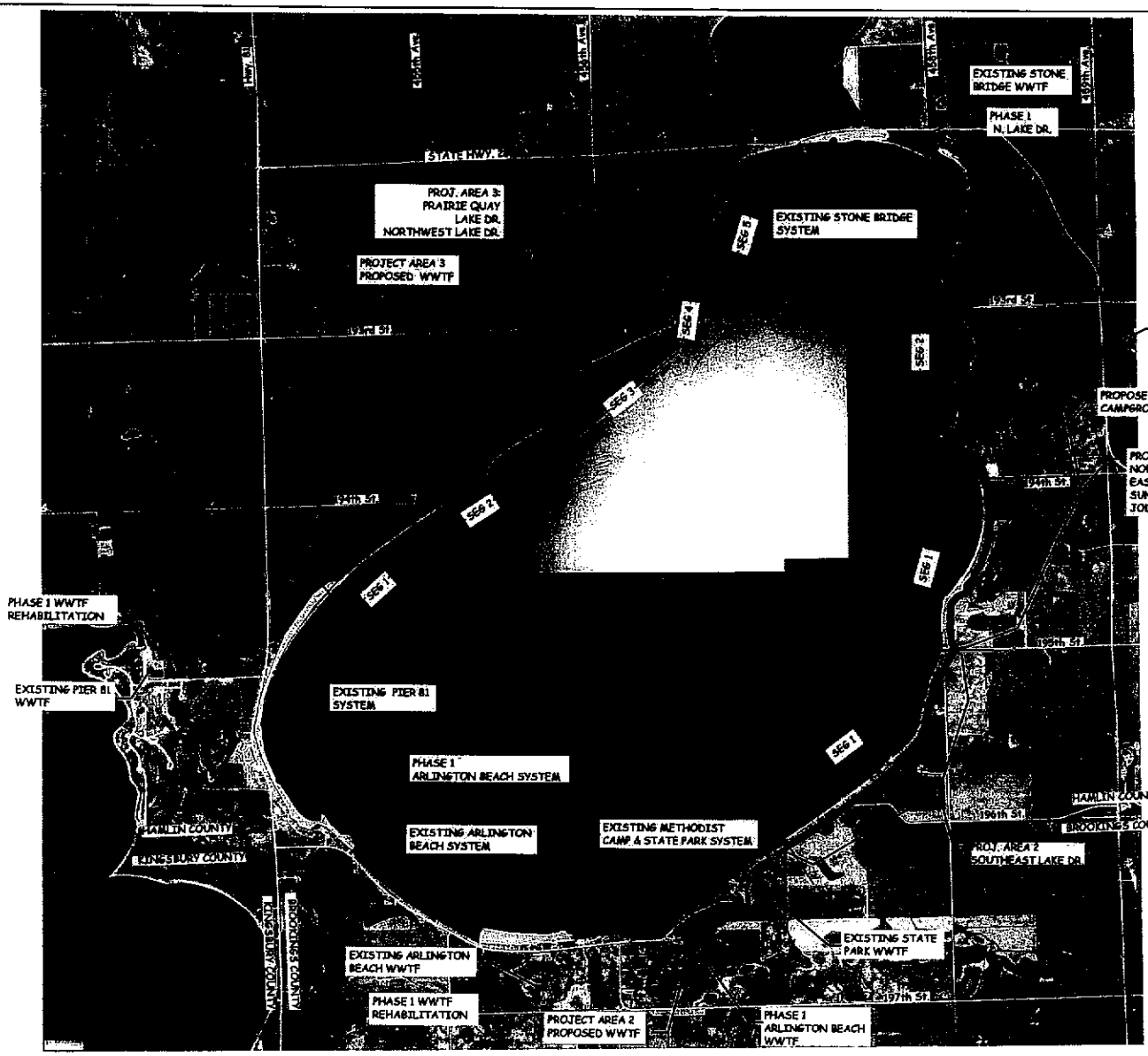
7.3.1 Recommended Alternative – Total Retention Stabilization Pond System with on-site disposal systems (septic tanks) retained: The WWTFs were designed using total retention stabilization ponds for Project Areas One, Two and Three. The WWTF for Project Area Two is proposed to be an adjoining total retention stabilization pond to the Phase 1 State Park WWTF. A flow control structure is proposed to be put in place between the proposed cell and the existing cell to equalize pond depth. The WWTF for each project area was sized such that the organic loading is not more than 20 pounds of BOD_5 per acre per day. The proposed WWTF liner shall be at least 12 inches in depth and not allow seepage greater than 1/16" per day. It is anticipated that groundwater monitoring wells will not be required. The minimum WWTF size, at an operating depth of 3.5 feet, was calculated to be 7.4 acres for Project Area One, 2.9 acres for Project Area Two and 7.9 acres for Project Area Three. Existing on-site disposal systems would need to be inspected. Drain fields and other non-septic tank on-site disposal systems would need to be removed or otherwise rendered unusable. Septic tank effluent would be discharged to the proposed wastewater collection system and WWTFs. Since on-site septic tanks would remain in-place, the wastewater collection system and WWTFs would be considered a gray water system. The current condition of the on-site disposal systems is unknown and all on-site disposal systems will be inspected. Depending on the condition of existing on-site disposal systems, on-site disposal systems may need to be removed and replaced with new or inspected and pumped only. It is important that septic tanks are properly sized and maintained in-order to insure solids are retained in the septic tanks and do not clog the

collection system as well as to mitigate any potential environmental or health impacts to the Lake Poinsett area. Septic tanks should be pumped at least once every five years. More frequent septic tank pumping would likely be required for residences with garbage disposals. The wastewater collection system will need to be able to maintain a minimum of 1.5 feet per second flow rate. Figures 7.0 through 7.9 shows a layout of the proposed wastewater collection system and WWTFs.

The WWTF servicing Project Area One is planned to be a 7.4 acre WWTF located near Bakke's Subdivision in the Southeast ¼ of the Northeast ¼ of Section 23, Township 113 North, Range 52 West. It is anticipated that 12 acres of land will need to be purchased for the construction of Project Area One WWTF. Segment 2 includes construction of the Project Area One WWTF.

The pond servicing Project Area Two is proposed be a 2.9 acre WWTF adjoining the existing Phase 1 State Park WWTF to the south. The Project Area Two WWTF is proposed to be on land previously purchased by the Lake Poinsett Sanitary District in the Southeast ¼ of the Southwest ¼ of Section 4, Township 112 North, and Range 52 West. Locating the pond adjacent to the existing pond would allow the two ponds to utilize a common embankment and the overall footprint. An archaeological survey and wetland inventory were completed for this site prior to the Phase I improvements that were constructed in 2008. All pipeline construction within this project area will be within previously establishes rights-of-way, and one segment will utilize existing forcemain.

The WWTF to service Project Area Three is to proposed be a 7.9 acre WWTF located north of Grapes Subdivision in the Southeast ¼ of the Northeast ¼ of Section 17, Township 113 North, Range 52 West. It is estimated that 13 acres of land will be purchased for the construction of Project Area Three WWTF. Construction of the Project Area Three WWTF was included as part of Segment 5.



PROJECT LAYOUT

NORTH SCALE NONE

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CONSULTANTS:

PROJECT TITLE:

LAKE POINSETT WW COLLECTION & WWTF FACILITY PLAN AMENDMENT

PROJECT LOCATION:

HAMLIN/BROOKINGS CO. SOUTH DAKOTA

REV.	DATE	DESCRIPTION

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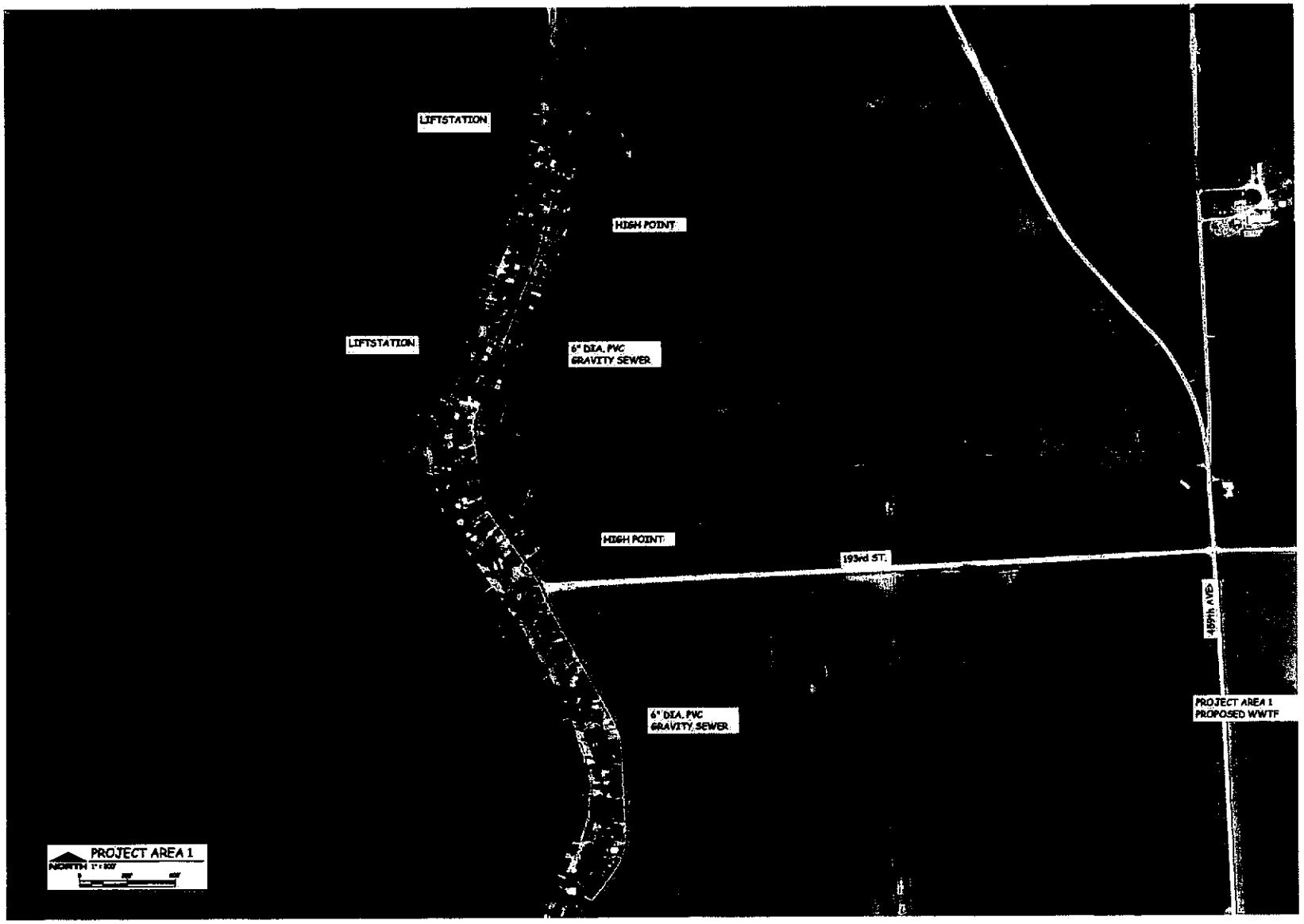
DESIGNED BY: J.J.H.
CHECKED BY: J.P.H.
JOB NO.: 20427.00.00
DATE: MAY, 2009

SHEET TITLE:

OVERALL PROJECT LAYOUT

SHEET NO.:

FIGURE 7.0



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PROJECT AREA 1

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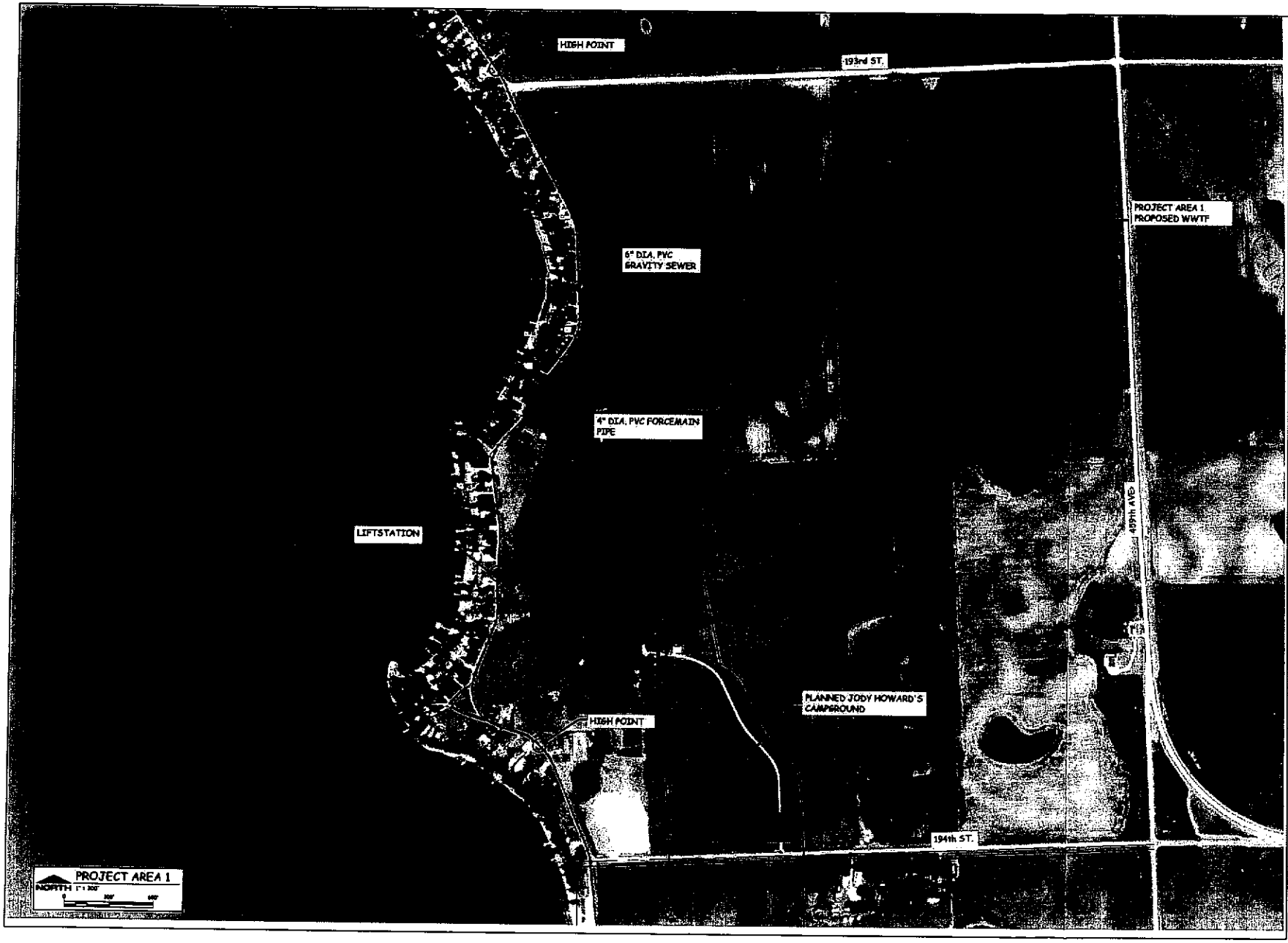
FIG. 7.1



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PROJECT AREA 1

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FIG. 7.2

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PROJECT AREA 1

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FIG. 7.3

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PROJECT AREA 2

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FIG. 7.4

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PROJECT AREA 2

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FIG. 7.5

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PROJECT AREA 2

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FIG. 7.6

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PROJECT AREA 3

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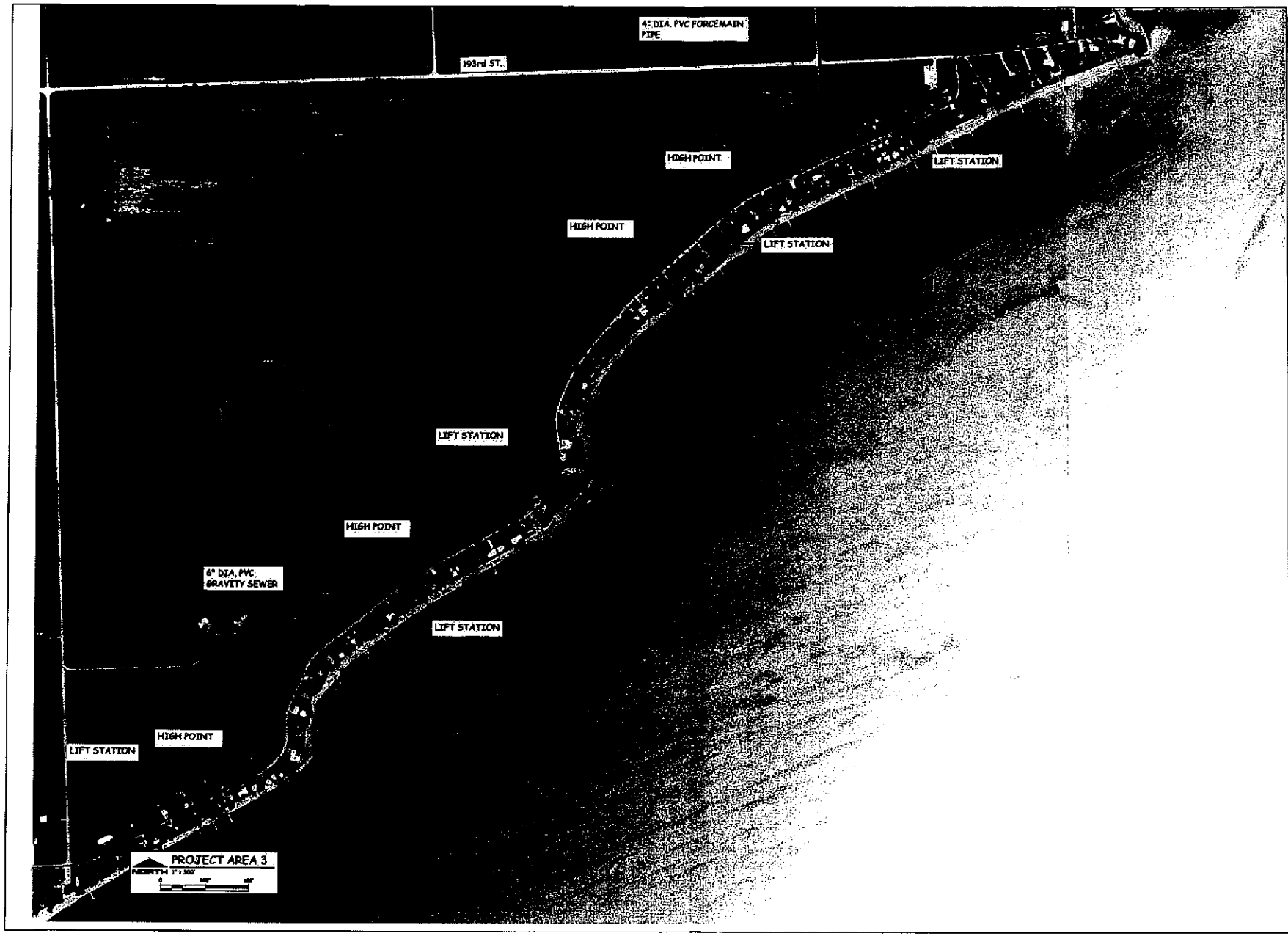
FIG. 7.7



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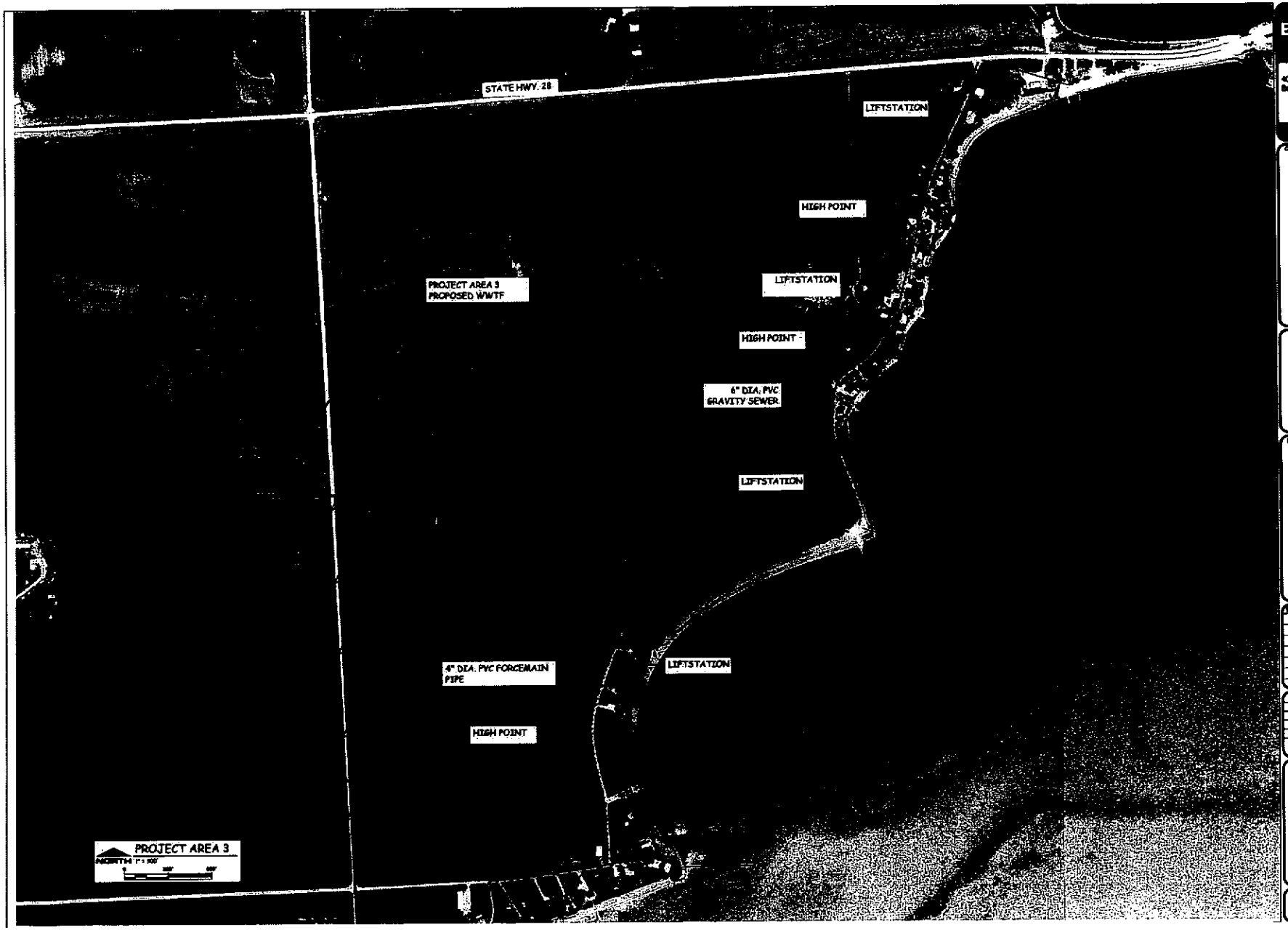
PROJECT AREA 3

SHEET NO.:

FIG. 7.8



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PROJECT AREA 3

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FIG. 7.9

The capital cost for the recommended alternative is summarized in Table 7.1, Table 7.2 and Table 7.3. An itemization of the probable project costs for this alternative is attached in Appendix E.

Table 7.1

Treatment System Alternative 1 (Project Area 1) – Total Retention Pond with on-site disposal systems serviced/removed and replaced.

Description	Segment 1 Project Cost	Segment 2 Project Cost
Opinion of Probable Capital Costs and Contingencies	$1,431,000	$3,213,000
Design and Resident Engineering	$170,000	$355,000
Project administration and Legal	$72,000	$161,000
Opinion of Probable Project Cost	**$1,673,000**	**$3,729,000**

Table 7.2

Treatment System Alternative 1 (Project Area 2) – Total Retention Pond with on-site disposal systems serviced/removed and replaced

Description	Segment 1 Project Cost
Opinion of Probable Capital Costs and Contingencies	$2,644,000
Design and Resident Engineering	$298,000
Project administration and Legal	$133,000
Opinion of Probable Project Cost	**$3,075,000**

Table 7.3

Treatment System Alternative 1 (Project Area 3) – Total Retention Pond with on-site disposal systems serviced/removed and replaced

Description	Segment 1 Project Cost	Segment 2 Project Cost	Segment 3 & 4 Project Cost	Segment 5 Project Cost
Opinion of Probable Capital Costs and Contingencies	$966,000	$1,405,000	$1,400,000	$2,009,000
Design and Resident Engineering	$122,000	$170,000	$169,000	$230,000
Project administration and Legal	$49,000	$71,000	$70,000	$101,000
Opinion of Probable Project Cost	**$1,137,000**	**$1,1646,000**	**$1,639,000**	**$2,320,000**

Table 7.4 summarizes the increase to the existing operation and maintenance costs for Treatment System Alternate One. Since the proposed WWTFs are total retention stabilization ponds, it is anticipated that there shall be no sampling required except in the case of emergency release, bypass, or sanitary sewer overflow of the WWTFs. Quarterly Discharge Monitoring reports (DMR's) are required even if there is no discharge. The wastewater collection system should be cleaned periodically. Reliability of this type of system is very high and annual cost of operation and maintenance is minimal.

Table 7.4

Annual Operation and Maintenance Cost for

Treatment System Alternative One

Description of Item	Alternative One (Total Retention WWTFs [illegible] Digester Systems Collection System [illegible])
Liability /work comp insurance	$1,550
Paid Mileage	$450
Payroll/payroll taxes	$4,240
Utilities (including lift stations)	$11,680
Call-in Sewer Locates	$460
Repairs/ Maintenance	$44,580
Total	**$62,960**

7.4 IMPACTS TO USER FEES

For the purpose of providing these calculations, it is assumed that the project will be financed with a combination of grants and loans. The total opinion of probable project cost for all treatment system improvements is $15,239,000 as shown in Table 7.5.

TABLE 7.5

Total Opinion of Probable Project Cost

Description	Opinion of Probable Project Cost
Project Area One, Segment 1	$1,673,000
Project Area One, Segment 2	$3,729,000
*Project Area Two, Segment 1	$3,075,000
Project Area Three , Segment 1	$1,137,000
Project Area Three , Segment 2	$1,646,000
Project Area Three , Segment 3 & 4	$1,639,000
Project Area Three , Segment 5	$2,340,000
TOTAL OPINION OF PROBABLE PROJECT COST	**$15,239,000**

* Denotes project area and segment proposed to be designed/constructed first.

The annual debt retirement cost has been calculated based on a 0%, 25% and 50% grant and prevailing interest rates for loans. Grant funding will be requested from the State of South Dakota. The Lake Poinsett Sanitary District will likely be eligible for a State Revolving Fund (SRF) loan with a 30-yr term at 3.25% interest. Table 7.6 demonstrates the required user rates for a multiple phase implementation. Note that project cost and operation and maintenance cost were adjusted using a 4% annual inflation rate. Further documentation is provided in Appendix G.

Table 7.6
Opinion of Probable Wastewater Rate Modifications

		Loan 1	Loan 2	Loan 3	Loan 4	Loan 5	Loan 6	Loan 7	Loan 8
		(Phase 1)	Proj. Area 2	Proj. Area 1	Proj. Area 1	Proj. Area 3	Proj. Area 3	Proj. Area 3	Proj. Area 3
	2006		Seg. 1	Seg. 2	Seg. 1	Seg. 5	Seg. 3 & 4	Seg.2	Seg. 1
Construction Season (Yr)	Budget	2007	2010	2012	2014	2016	2018	2020	2022
Probable Project Costs*		**$1,585,000**	**$3,075,000**	**$4,197,000**	**$2,037,000**	**$3,080,000**	**$2,334,000**	**$2,535,000**	**$1,895,000**
No.of Resid. & Comm. Accounts	204	279	369	473	497	524	582	642	658
No.of Vacant Lot Accounts	27	27	27	27	76	76	76	76	114
Commercial Accounts	117	236	236	236	304	304	304	304	304
Status Quo Total Annual Income	**$114,621**	**$188,183**	**$337,425**	**$576,059**	**$721,042**	**$906,039**	**$1,028,114**	**$1,206,784**	**$1,314,275**
Cost for O&M (Budget)**	$46,000	$60,000	$79,000	$96,000	$114,000	$134,000	$156,000	$179,000	$204,000
0% Grant:									
Grant Participation - Amount		$300,000	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	$10,416	$93,374	$240,711	$463,065	$571,837	$740,558	$861,615	$994,031	$1,095,733
Total Annual Expenses	$56,416	$153,000	$320,000	$559,000	$686,000	$875,000	$1,018,000	$1,173,000	$1,300,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$337,000**	**$576,000**	**$721,000**	**$906,000**	**$1,028,000**	**$1,206,000**	**$1,314,000**
Resid. & Comm. Monthly Fee	**$32.00**	**$40.00**	**$60**	**$85**	**$95**	**$115**	**$120.00**	**$130**	**$135**
25% Grant:									
Grant Participation - Amount		$300,000	$768,750	$1,049,250	$509,250	$770,000	$583,500	$633,750	$473,750
Total Debt Service	$10,416	$93,374	$213,982	$375,532	$454,793	$575,995	$660,341	$756,031	$827,381
Total Annual Expenses	$56,416	$153,000	$293,000	$472,000	$569,000	$710,000	$816,000	$935,000	$1,031,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$337,000**	**$511,000**	**$573,000**	**$713,000**	**$818,000**	**$978,000**	**$1,074,000**
Resid. & Comm. Monthly Fee	**$32.00**	**$40.00**	**$60**	**$75**	**$75**	**$90**	**$95**	**$105**	**$110**
50% Grant:									
Grant Participation - Amount		$300,000	$1,537,500	$2,098,500	$1,018,500	$1,540,000	$1,167,000	$1,267,500	$947,500
Total Debt Service	$10,416	$93,374	$169,433	$267,281	$317,031	$393,612	$444,144	$503,108	$547,005
Total Annual Expenses	$56,416	$153,000	$248,000	$363,000	$431,000	$528,000	$600,000	$682,000	$751,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$284,000**	**$380,000**	**$499,000**	**$598,000**	**$650,000**	**$795,000**	**$835,000**
Resid. & Comm. Monthly Fee	**$32**	**$40**	**$50**	**$55**	**$65**	**$75**	**$75**	**$85**	**$85**

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year

7.5 IMPLEMENTATION SCHEDULE

The completion of the Facilities Plan Amendment is the first of a series of engineering and administrative tasks that must be completed in order to continue this project. Each project area and segment will likely be designed and constructed as separate phases until the entire system has been completed. It is recommended that a cost estimate update be completed for each phase prior to applying for funding assistance. The activities required for completion of the Project Area Two, Segment 1 and target dates for each action are presented in the Table 7.7.

Table 7.7

Implementation Schedule of Project Area Two, Segment 1

Task	Recommended Dates
State Water Plan Application	Fall 2008
Placement on State Water Plan Complete Facility Plan Amendment	March 2009 May 2009
Presentation and Acceptance of Final Wastewater System Facilities Plan Amendment	May / June 2009
DENR SRF Loan Application	June 2009
DENR Approval for SRF Loan	June 2009
Notice to Proceed with Design of Proj. Area 2	July 2009
Submittal of Plans and Specification for Review	October 1, 2009
Open Bids for Construction of First Phase System Improvements	December 10, 2009
Award construction Contract	January 15, 2010
Start Construction of Proj. Area 2 Improvements	May 2010
Final Completion of Proj. Area 2 Improvements	August 2011

The implementation schedule in Table 7.7 must be met in order to meet the 2009 American Recovery and reinvestment Act (ARRA) schedule. Subsequent project areas and segments are projected to follow a similar schedule. Any delay will result in postponement of all subsequent dates. It is essential that the various tasks be carried out in a timely manner by all parties.

Appendix A

Surface Water Discharge Permit

&

Statement of Basis

Permit No.: SD0026450

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3181

SURFACE WATER DISCHARGE PERMIT

AUTHORIZING DISCHARGE

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Article 74:52,

Lake Poinsett Sanitary District

is directed by the South Dakota Department of Environment and Natural Resources to have **no discharge** from its wastewater treatment facilities at Arlington Beach located in the south ½ of Section 5, Township 112 North, Range 52 West, Brookings County, South Dakota (Latitude 44° 31' 45.4", Longitude 97° 05' 47.6") at Stone Bridge, located in the southwest ¼ of Section 11, Township 113 North, Range 52 West, Hamlin County, South Dakota (Latitude 44° 36' 17.8", Longitude 97° 02' 47.0") at Pier St located in the southwest ¼ of Section 25, Township 113 North, Range 53 West, Hamlin County, South Dakota (Latitude 44° 33' 30.7", Longitude 97° 08' 29.0"), and at the new facility planned in the east ½ of the northwest ¼ of Section 6, Township 112 North, Range 52 West, in Brookings County South Dakota (Latitude 44° 32' 21.4", Longitude 97° 07' 15.0") in accordance with the requirements as contained in the provisions of this permit. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

This permit shall become effective **July 01, 2005.**

This permit shall expire at midnight, **June 30, 2010.**

Signed this 14th day of April 2005.

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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ATTACHMENTS –

DISCHARGE MONITORING SUMMARY FORM

DEFINITIONS

ARSD means the Administrative Rules of South Dakota.

BOD_5 means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **Bypass** is the intentional diversion of waste streams from any portion of a treatment facility. Bypasses do not include releases from the sanitary sewer collection system (see sanitary sewer overflow) or emergency releases from the treatment facility (see emergency release). Bypasses may result in a discharge or emergency release.

Composite samples shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous collection of sample, with sample collection rate proportional to flow rate.

Daily maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

An **Emergency release** is a discharge from the lower end of the treatment or containment system through a release structure or over or through retention dikes. An emergency release is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to treatment or containment.

A **Grab** sample, for monitoring requirements, is a single "dip and take" sample collected at a representative point in the discharge stream.

An **Instantaneous measurement**, for monitoring requirements, is a single reading, observation, or measurement.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

A **Publicly-owned treatment works** or **POTW** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

A **Sanitary sewer overflow** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system, including sewer lines, manholes, lift stations, etc.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

Severe property damage is substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass or emergency release. Severe property damage does not mean economic loss caused by delays in production.

Sewage sludge is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

TSS means **Total Suspended Solids.** TSS is a measure of the filterable solids present in a sample.

1.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1.1 Effluent Limits

Effective immediately and lasting through the life of this permit, there shall be **no discharge** from the permittee's treatment facilities except in accordance with the emergency release, bypass, or sanitary sewer overflow provisions of this permit. If an emergency release, bypass, sanitary sewer overflow, or other discharge occurs or is expected to occur, the permittee shall report the occurrence in accordance with Section 2.11 and take the appropriate measures to minimize the discharge of pollutants. Such measures may include the closing of facilities that contribute wastewater to the sewer system until the discharge is terminated.

1.2 Self-Monitoring Requirements

Promptly upon discovery of a release, sanitary sewer overflow, or other discharge, the discharge shall be monitored as shown below:

Effluent Characteristic	Frequency	Sample Type [1]
Flow Rate, (MGD)	At least three per discharge [2]	Instantaneous
Total Flow, million gallons	Each discharge	Calculated
Duration of Discharge, days	Each discharge	Calculated
pH, standard units	At least three per discharge [2]	Instantaneous
Total Residual Chlorine, mg/L (only if chlorinating)	At least three per discharge [2]	Instantaneous
Water Temperature, °C	At least three per discharge [2]	Instantaneous
Total Suspended Solids, mg/L	At least three per discharge [2]	Grab or Composite
BOD_5, mg/L	At least three per discharge [2]	Grab or Composite
Ammonia as N, mg/L	At least three per discharge [2]	Grab or Composite
Fecal Coliform, no./100 mL	At least three per discharge [2]	Grab

[1] See Definitions.

[2] A minimum of three samples shall be taken during any discharge. Samples shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week.

The permittee shall report the monitoring results in accordance with Section 2.3.

Knowingly discharging from an unauthorized location or failing to report a discharge within a reasonable time from the permittee first learning of a discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

1.3 Inspection Requirements

The permittee shall inspect each of its wastewater treatment facilities on at least a **monthly** basis. The inspection shall be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. In addition, the inspection shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility. All lift stations shall be inspected at least **weekly**. The permittee shall maintain a notebook recording information obtained during the inspection. At a minimum, the notebook shall include the following:

a. Date and time of the inspection;
b. Name of the inspector(s);
c. The facility's discharge status;
d. The measured amount of pond freeboard;
e. Identification of operational problems and/or maintenance problems;
f. Recommendations, as appropriate, to remedy identified problems;
g. A brief description of any actions taken with regard to problems identified; and,
h. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the notebook available for inspection, upon request, by the Secretary or the U.S. Environmental Protection Agency.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1 Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2.2 Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR, Part 136, unless other test procedures have been specified in this permit.

2.3 Reporting of Monitoring Results

Monitoring results shall be summarized and reported on a photocopy of the Discharge Monitoring Summary Form located at the end of this permit, postmarked no later than the 28th day of the month following the discharge. Legible copies of these, and all other reports required berein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary and EPA at the following addresses:

original to: South Dakota Department of
Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3181

copy to: US Environmental Protection Agency – Region VIII
Planning and Targeting Program (ENF-PT)
999 18th Street, Suite 300
Denver, Colorado 80202-2466

2.4 Signatory Requirements

All applications, reports or information submitted to the Secretary shall be signed and certified.

1. All permit application forms shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section sball make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the

information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2.5 Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR 136 or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit.

2.6 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses was initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and,
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7 Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8 Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions.

2.10 Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Summary Form, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11 Emergency and Noncompliance Reporting

1. The permittee shall report any emergency related to this permit or permitted facility that may endanger health or the environment as soon as possible, but no later than twenty-four (24) hours after becoming aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours, or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. Instances of noncompliance, unanticipated bypasses, sanitary sewer overflows, and releases shall be reported to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. - 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a. A description of the event and its cause;

   b. The period of the event, including exact dates and times;

   c. The estimated time the event is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Sections 2.3 and 2.4.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12 Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11.

2.13 Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1 Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

3.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon permit issuance. This may include the maintenance of freeboard levels of lagoons or holding ponds. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4 Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

3.6 Removed Substances

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7 Emergency Releases and Bypasses

1. Emergency Releases and Anticipated Bypasses. Anticipated bypasses and releases causing violation of effluent limits are prohibited, unless the Secretary approves the anticipated bypass or release after considering its adverse effects and determines that it will meet the following conditions:

   (a) The bypass or release was unavoidable to prevent loss of life, threat to public health, personal injury, or severe property damage;

   (b) There were no feasible alternatives to the bypass or release, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods

of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass or release which occurred during normal periods of equipment downtime or preventive maintenance; and,

(c) The permittee submitted notices as required under paragraph 3 of this section.

2. Anticipated Bypass Not Causing Violations. The permittee may allow anticipated bypasses to occur which do not cause effluent limit violations, but only if for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 1 and 3 of this section.

3. Notice of Bypass or Emergency Release:
   a. Anticipated bypass or release. If the permittee knows in advance of the need for a bypass or release, it shall submit prior notice at least 10 days before the date of the bypass or release.

   b. Unanticipated bypass or release. The permittee shall submit notice of an unanticipated bypass or release as required under Section 2.11.

3.8 Sanitary Sewer Overflows

1. Reporting. Overflows from the sanitary sewer collection system shall be reported to the Secretary at (605) 773-3351 as soon as possible, but no later than the first business day after becoming aware of the sanitary sewer overflow. Anticipated overflows shall be reported in advance, if possible. In addition to verbal notification, the permittee shall submit to the Secretary a written report in accordance with Section 2.11, paragraphs 3 and 4.

2. Sampling. Sanitary sewer overflows shall be sampled at the same or similar frequency and for the same parameters as required for permitted outfalls. The results shall be included with the written report required in paragraph 1.

3. Plan Development. In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows, the permittee shall submit such a plan to the Secretary. The plan shall, at a minimum, address the following areas:

   a. Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;

   b. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational recordkeeping, and other appropriate items;

   c. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance recordkeeping, parts and equipment inventory, and other appropriate items; and

   d. Sewer system capacity evaluation: The capacity evaluation includes the following:

      1. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);
      2. Identification of problem areas (overflows, surcharged lines, basement backups, etc.);
      3. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and
      4. Sewer rehabilitation recommendations.

   Upon the Secretary's approval of the plan, the permittee shall implement the plan.

3.9 Industrial Wastes

1. Each significant industrial user must be identified as to qualitative and quantitative characteristics of the discharge as well as production data. A significant industrial user is defined as an industrial user discharging to a publicly owned treatment works (POTW) that satisfies any of the following: (1) has a process wastewater flow of 25,000 gallons or more per average work day or contributes five percent or more of the average dry weather hydraulic or organic capacity of the municipal system receiving the waste; (2) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N or; (3) is determined by the Control Authority to have a reasonable potential to adversely impact the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

2. The permittee shall notify the Secretary of any new introductions by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user. Such notice must contain the information described in paragraph 1 above and be forwarded no later than 60 days following the introduction or change.

3. Pretreatment Standards [ARSD §74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the POTW from any source of nondomestic discharge:

   (a) Pollutants which create a fire or explosion hazard in the POTW, including but not limited to, wastestreams with a closed cup flashpoint of less than 60 degrees Celsius (140 degrees Fahrenheit) using the test methods specified in ARSD §74:28:22:01, a.b.r. 40 CFR 261.21;

   (b) Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0 standard units, unless the works are specifically designed to accommodate such discharges;

   (c) Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

   (d) Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

   (e) Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Celsius (104 degrees Fahrenheit);

   (f) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   (g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

   (h) Any trucked or hauled pollutants, except at discharge points designated by the POTW;

   (i) Any pollutant which causes pass through or interference; and,

   (j) In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Federal Clean Water Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

4. The permittee shall provide adequate notice to the Secretary of any substantial change in the volume or character of pollutants being introduced into the POTW by an industrial user. For the purposes of this section, adequate notice shall include information on:

(a) The quality and quantity of effluent to be introduced into the POTW; and,

(b) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

5. The Secretary retains the right to take legal action against the industrial user and/or the permittee, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

3.10 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to discharge under this permit.

3.11 Availability of Reports

Except for data determined to be confidential under ARSD §74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and effluent data shall not be considered confidential.

3.12 Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.13 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.14 Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this permit are modified in such a manner as to require different effluent limits than contained in this permit.

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limits than contained in this permit.

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this permit;

4. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA.

5. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit; or

6. Other Changes: Other conditions or standards change so that the discharge no longer qualifies for this permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

3.15 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in Section 3.6, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

4.2 Penalties for Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3 Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the federal Clean Water Act.

DISCHARGE MONITORING SUMMARY FORM

This form shall be used to summarize effluent monitoring information for discharges under this permit.

Permittee Name: Lake Poinsett Sanitary District

Facility Name: _____

Permit No.: SD0026450

Address: _____

Facility Contact: _____ Phone: _____

Describe the events leading to the discharge, and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance (use attachment if insufficient space):

_____

_____

_____

_____

Time and Date Emergency and Noncompliance Reporting notice given to SDDENR: _____

Describe any adverse effects, such as fish kills, etc.: _____

Duration of discharge (include dates and times): _____

Total flow, million gallons: _____

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3	Sample 4
Flow rate, MGD				
Date and time of sample				
pH, standard units				
Water Temperature, °C				
Total Residual Chlorine, mg/L (if chlorinating)				
Fecal Coliform, no./100 mL				
Ammonia as N, mg/L				
Total Suspended Solids, mg/L				
BOD_5, mg/L				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): _____ Title: _____

Signature: _____ Date: _____

STATEMENT OF BASIS

Applicant:	Lake Poinsett Sanitary District
Permit Number:	SD0026450
Contact Person:	Lawrence Furney, President PO Box 116 Lake Norden, SD 57248
Phone:	(605) 785-2155, (605) 983-3932
Permit Type:	Minor Municipal Wastewater Treatment Facility - Renewal

DESCRIPTION

The Lake Poinsett Sanitary District operates wastewater treatment facilities in both Brookings and Hamlin counties serving a population of 500 to 1,000 people depending on the season. Wastewater from individual septic tanks is discharged to one of three separate collection systems and total retention stabilization ponds. The three systems were constructed in 1989. In 1999, several lift stations were upgraded and a new stabilization pond built at the Arlington Beach site.

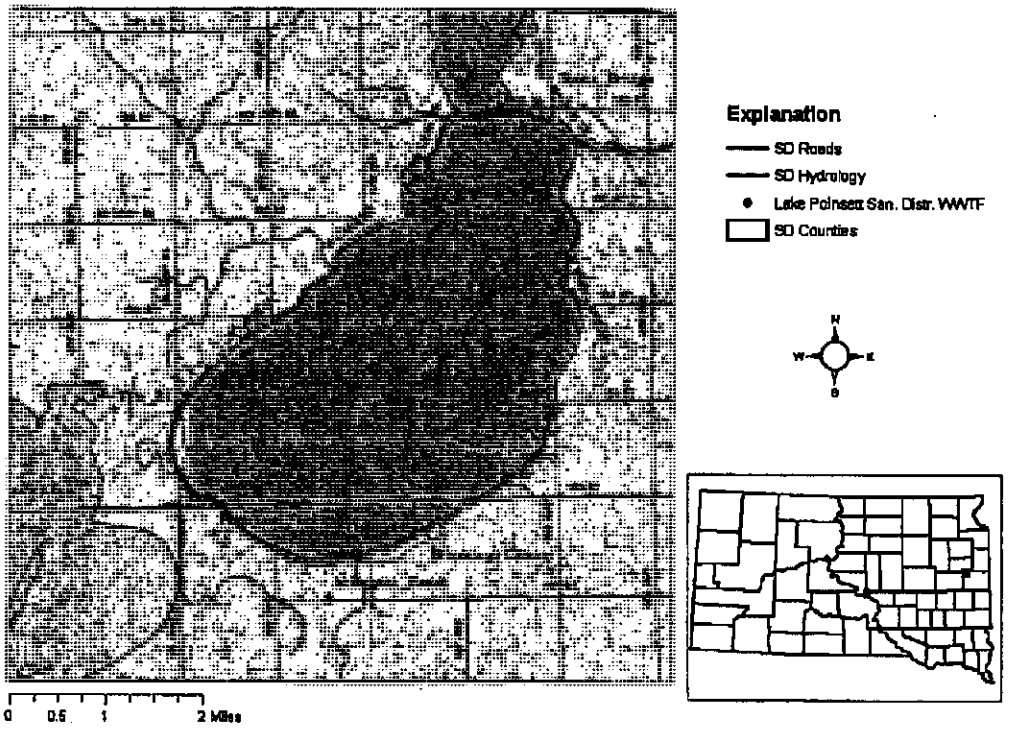
- Arlington Beach: This area is bounded on the east by the South Dakota Department of Game, Fish, and Parks state campgrounds and on the west by the Lake Poinsett Heights Subdivision. One lift station is used to pump the wastewater to one of two (0.7 acres and 0.25 acres) total retention stabilization ponds located in the south ½ of Section 5, Township 112 North, Range 52 West, Brookings County, South Dakota (Latitude 44° 31' 45.4", Longitude 97° 05' 47.6", Navigational Quality GPS).

- The Stone Bridge Area: This area is bounded on the west by the inlet between Dry Lake and Lake Poinsett and on the east by Lake View Park Subdivision. Wastewater is pumped by two lift stations to the one acre total retention stabilization pond located in the southwest ¼ of Section 11, Township 113 North, Range 52 West, Hamlin County, South Dakota (Latitude 44° 36' 17.8", Longitude 97° 02' 47.0", Navigational Quality GPS).

- The Pier 81 Area: This area is bounded on the south and east by Mundt's Subdivision and on the north by the Lake Albert inlet to Lake Poinsett. Five lift stations pump the wastewater to a two acre total retention stabilization pond located in the southwest ¼ of Section 25, Township 113 North, Range 53 West, Hamlin County, South Dakota (Latitude 44° 33' 30.7", Longitude 97° 08' 29.0", Navigational Quality GPS).

A fourth stabilization pond site is planned for construction in 2005. The site is to be located in the east ½ of the northwest ¼ of Section 6, Township 112 North, Range 52 West, in Brookings County, South Dakota (Latitude 44° 32' 21", Longitude 97° 07' 15", Map Interpolation). The district will be constructing a 2.2-acre stabilization pond that will serve 71 users on the west half of South Lake Drive. Also as part of the project, the district will be rehabilitating the primary cell at the Arlington Beach treatment system. These improvements are part of a multi-phase project to be undertaken by the district in the next several years. A map with locations of the wastewater treatment facilities is included below.

Lake Poinsett Sanitary District



RECEIVING WATERS

Discharge from any of the four facilities would enter Lake Poinsett which is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Sections 74:51:02:01, 74:51:02:02, and 74:51:02:31, for the following beneficial uses:

(5) Warmwater semipermanent fish life propagation waters;
(7) Immersion recreation waters;
(8) Limited contact recreation waters; and
(9) Fish and wildlife propagation, recreation, and stock watering waters.

ANTIDEGRADATION

The South Dakota Department of Environment and Natural Resources (SDDENR) has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedure and the SDSWQS, no further review is required since this permit will not allow a discharge. The results of SDDENR's review are included in Attachment 1.

INSPECTIONS

Personnel from SDDENR conducted an *Operation and Maintenance* inspection of the Lake Poinsett Sanitary District wastewater treatment facilities on April 25, 2002. The following requirements, recommendations, and comments were made in the report:

Requirements

1. Mr. Pedersen does maintain inspection records but does not include all of the following conditions. All pond site inspections conducted by the sanitary district personnel must be documented in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs. At a minimum, the notebook shall include the following:

    1. Date and time of the inspection;
    2. Name of the inspector(s);
    3. The facility's discharge status;
    4. The measured water depth in all cells;
    5. Identification of operational problems and/or maintenance problems;
    6. Recommendations, as appropriate, to remedy identified problems;
    7. A brief description of any actions taken with regard to problems identified; and
    8. Other information, as appropriate.

    The inspection notebook is a condition of the SWD permit.

Recommendations and Comments

1. In order to monitor wastewater flow to the collection system, the pumping rates of the lift station should be determined. This pumping rate can be found by measuring the drop in water in the wet well over a one minute pumping period, then calculating the volume of water pumped to the ponds. The gallon per minute pumping rate combined with hour meter readings, will give the total volume of wastewater over a given period of time. Compiling records of weekly or monthly flows and comparing them to one another may detect inflow/infiltration into the sewer system and the problem corrected before a major breakdown occurs. Also,

by checking and rechecking the pumping rates three (3) or four (4) times per year, pump or motor problems may be detected before a complete failure occurs.

2. An alternative power source should be available for the lift stations in order to prevent flood damage to homes, collection system and to the lift station itself. These problems can arise either from electrical equipment malfunctions or a power outage, and could be quite costly to correct.

SELF MONITORING DATA

No emergency releases from the treatment facilities have been reported during the current life of the permit, therefore no monitoring data is available.

EFFLUENT LIMITS

The Lake Poinsett Sanitary District shall have **no discharge** from its wastewater treatment facility except in accordance with the bypass or emergency release provisions of the permit. A no discharge permit is issued to facilities that are not expected to discharge under normal conditions. The no discharge requirement is based on past facility performance and Best Professional Judgement (BPJ).

SELF MONITORING REQUIREMENTS

Monitoring shall consist of **monthly** inspections of the facility to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. The lift stations shall be inspected on at least a **weekly** basis, although **daily** inspections are recommended. Documentation of each of these visits shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

If a discharge is discovered, the discharge shall be monitored and the proper authorities shall be notified in accordance with the Emergency and Noncompliance Reporting (Section 2.11) requirements stated in the Surface Water Discharge permit.

SLUDGE

The proposed Surface Water Discharge permit shall not contain sludge disposal requirements. However, if sludge disposal is necessary, due to upgrade or construction activities, Lake Poinsett Sanitary District is required to submit to SDDENR a sludge disposal plan for review and approval **prior** to the removal and disposal of sludge.

ENDANGERED SPECIES

This is a renewal of an existing permit and does not allow a discharge. Therefore, no listed endangered species are expected to be impacted by activities related to this permit.

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

Any questions pertaining to this statement of basis can be directed to Michael Pogany, Natural Resources Project Engineer for the Surface Water Quality Program, at (605) 394-2229.

January 20, 2005

ATTACHMENT 1

Antidegradation Review

Permit Type: **Minor Municipal – Renewal** Applicant: **Lake Poinsett Sanitary District**

Date Received: **12/20/2004** Permit #: **SD0026450**

County: **Brookings / Hamlin** Legal Description: **Sec 5, T112, R52W; Sec 11, T113N, R52W; Sec 25, T113N, R53W; Sec 6, T112N, R52W**

Receiving Stream: **Lake Poinsett** Classification: **5,7,8,9**

If the discharge affects a downstream waterbody with a higher use classification, list its name and uses: **N/A**

APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:

- ☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
- ☐ *Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;
- ☐ *Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
- ☐ *The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
- ☐ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
- ☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
- ☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
- ☒ Other: This permit does not allow a discharge, except in accordance with the emergency release, bypass, or sanitary sewer overflow provisions.

*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

No further review required.

ANTIDEGRADATION REVIEW SUMMARY

11. The outcome of the review is:
    - ☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
    - ☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
    - ☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
    - ☐ The review has determined, with public input that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
    - ☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
    - ☐ Other: _____

Michael Pogany, E.I.T. Reviewer	January 19, 2005 Date
Kelli D. Buscher, P.E. Team Leader	January 19, 2005 Date

Appendix B

Cultural Resources Effects Assessment Summary

5.12.3 CULTURAL RESOURCES EFFECTS ASSESSMENT SUMMARY

Applicant Lake Poinsett Sanitary District Project Contact: Pat Carey, PE
Address PO Box 298, Brookings, SD 57006 Telephone Number: 605-692-6342

Legal Location of Project Project Area 2 as identified in the Facilities Plan Amendment prepared by Banner Associates, Inc. dated May 2009 and located in Sections 3 & 4, T112N, R52W and Sections 34&35, T113N, R52W
City N/A County Hamlin/Brookings Project No. 20627.01.00

Project Description: The proposed Project Area 2 project is planned to involve: construction of a centralized wastewater collection system including lift stations and packaged grinder pump stations; servicing or removal and replacement of existing on-site disposal systems; and potential construction of an additional total retention stabilization pond directly adjacent to an existing pond.

For projects that involve new construction on vacant land please include information as to what previously occupied the site and whether that site has any known historic or archaeological significance.
The project route for the Project Area 2 work is proposed to parallel and be within existing road right-of-way for the length of all piping planned to be installed. The proposed stabilization pond expansion will be constructed directly adjacent to an existing wastewater stabilization pond. There has been an archaeological survey and report previously completed for the pond site. The Finding of No Significant Impact (FoNSI) that was completed for the original project is attached for reference.

Please describe below or attach information supporting the determination of effect.
The only apparent potential affect is unearthing or covering up of historical or archeological resources during construction excavation. Verification of historic sites will be requested from the South Dakota State Office of Cultural Preservation if required. However, an online search of the National Register of Historic Places was performed with no listed properties being present in the project area. The results of that search are attached for reference. If archeological or historical resources are unearthed during the excavation process, work will immediately be discontinued as dictated by a required condition in the contract specifications.

A map showing the project location is required. Drawings or photographs may also be helpful.

Please indicate the effect the project will have on cultural resources based on the review performed:

__X__ No Historic Properties Affected: There are no historic properties present or the undertaking will not affect any properties eligible for or listed in the National Register of Historic Preservation.

_____ No Adverse Effect: This property is listed in or eligible for the National Register of Historic Places. This project will have no adverse effect upon the historic significance of the property because the proposed undertaking meets the Secretary of the Interior's Standards for the Treatment of Historic Properties.

_____ Adverse Effect: This property is listed in or eligible for eligible for the National Register of Historic Places. This project will have an adverse effect upon the historic significance of the property. (Attach proposed mitigation measures that may minimize the adverse effect.)

Prepared by: Pat Carey, PE Date 5-8-2009

DETERMINATION OF EFFECTS

I have reviewed the project description and the information provided concerning historical and cultural effects of this project. Based on that review, the Department of Environment and Natural Resources concurs with the applicant's determination of the effects that the construction of this project will have on historical or cultural resources. Additionally, if historical or cultural resources are discovered during project construction, the contractor is required to cease construction and notify the State Historical Preservation Officer.

Approved by: _____ Date _____

SD Department of Environment and Natural Resources

DATE _____

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED GOVERNMENTAL AGENCIES AND PUBLIC GROUPS

As required by guidelines for the preparation of environmental impact statements, an environmental review has been performed on the proposed action below. It is proposed that the action be financed by a Clean Water State Revolving Fund (CWSRF) loan.

PROJECT:	SANITARY SEWER SYSTEM EXPANSION – PHASE 1
LOCATION:	LAKE POINSETT SANITARY DISTRICT BROOKINGS & HAMLIN COUNTIES, South Dakota
PROJECT NUMBER:	C461027-01
Total Cost/CWSRF Share:	$1,100,000/$590,000

The Lake Poinsett Sanitary District proposes to expand their sanitary sewer system to serve an additional 84 users in the Stone Bridge and Arlington Beach areas. This includes 13 users on the east end of North Lake Drive and 71 users on the west half of South Lake Drive. The district will also construct a new 2.2-acre treatment lagoon in the east half of the northwest quarter of Section 6, T112N, R52W (Laketon Township) in Brookings County. The lagoon will serve residences on the west half of South Lake Drive.

The purpose of the project is to reduce pollution of Lake Poinsett by continuing the construction of the wastewater collection and treatment system around the lake. This project is Phase 1 of a four-phase plan to sewer all residences and businesses on the lake. Failing septic tanks will be replaced and all existing drain fields will be abandoned. Instead, septic tank effluent will be collected and transported via new sewer lines to new and existing lagoons. The lagoons are constructed with natural clay liners and are situated off the lake. They have been designed for total containment/retention and do not discharge to the lake.

The proposed Phase 1 project will include the installation of approximately 3.2 miles of small diameter sewer main, 30 manholes, four lift stations, 42 septic tank removals and installations, septic tank cleaning, construction of a new 2.2-acre wastewater treatment pond, rehabilitation of an existing treatment pond, flow meters, and related appurtenances. The district will use local and state grant funds to purchase land to construct the new treatment pond.

The district plans to apply for a Clean Water State Revolving Fund (CWSRF) loan to finance the project. The $590,000 loan will be for a term of 20 years at 3.25 percent interest. The district intends to repay the loan with wastewater revenue. A wastewater rate increase of approximately $14 will be needed to help fund Phase 1 and to cover increased operations and maintenance (O&M) costs. Each user's wastewater rate will be $32 per month.

Two cultural resources inventory surveys were conducted during the planning process. It was determined that no historic properties would be affected by the project. Based on this determination, the State Historic Preservation Officer issued a cultural resources clearance to construct the project. Nonetheless, the district must temporarily halt the project and notify the State Historic Preservation Officer if excavation reveals any bones, artifacts, foundations, or other indications of past human habitation.

The district must acquire a Conditional Use Permit from the Brookings County Planning and Zoning Office prior to bidding the project.

The project is subject to state and federal storm water regulations. Since it will disturb an area greater than one acre, the district must apply for a storm water permit. In accordance with the permit, the district will need to plan and implement sediment and erosion control measures. These measures must prevent polluted storm runoff from entering nearby wetlands, intermittent streams, and Lake Poinsett.

The project will not adversely affect endangered species, wildlife habitat, or prime agricultural lands. The review process did not indicate that significant environmental impacts would result from the proposed action. Consequently, a preliminary decision not to prepare an environmental impact statement has been made. This action is taken on the basis of a careful review of the engineering report, environmental information documents, and other supporting data which are on file at the Department of Environment and Natural Resources (DENR), Division of Financial and Technical Assistance, 523 East Capitol Avenue, Pierre, South Dakota 57501. All information is available for public scrutiny at DENR in Pierre and at the Lake Poinsett Sanitary District office, 508 West Lake Drive, Lake Norden, South Dakota. To view information at the district office, please call the district clerk at 605-785-2155 for an appointment. If no one is available to take your call, please leave a message.

Comments that support or disagree with this decision may be submitted to DENR for consideration. After evaluating the comments received, the department will make a final decision; however, no final action will be taken on the SRF loan for at least 30 calendar days after publication of this finding.

James Feeney, Administrator
Water Resources Assistance Program

RECEIVED
JUN 15 2007

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

June 13, 2007

RE: CWSRF Lake Poinsett Sanitary District
C461027-02

Lawrence Furney, President
Lake Poinsett Sanitary District
PO Box 116
Lake Norden, SD 57248-0116

Dear Mr. Furney:

Enclosed is Amendment No. 2 to the Finding of No Significant Impact (FNSI) for Phase 1 of Lake Poinsett Sanitary District's proposed expansion project. The FNSI amendment is a State Revolving Fund program requirement. It must be published a minimum of once in the district's legal newspaper. The date which the FNSI will be published must be typed on the first page of the FNSI on the line appearing after the word "DATE".

A copy of the amendment must be kept on file at the Lake Poinsett Sanitary District's office for public scrutiny for 30 days following the publication of the amendment. After the 30-day comment period has elapsed, an affidavit of publication documenting the publication of the amendment and any written public comments received regarding the amendment must be submitted to the department.

If you have any questions regarding this matter, please feel free to contact me at 605- 773-5668.

Sincerely,

Gayleen Lowe

Gayleen Lowe, P.E.
Natural Resources Project Engineer
Water Resources Assistance Program

Enclosure

Cc: Donna Rhody, Clerk, Lake Poinsett Sanitary District, Lake Norden
Pat Carey, P.E., Banner Associates, Brookings
Greg Maag, First District Assoc. of Local Governments, Watertown
Donald R. Gober, Fish & Wildlife Service, U.S. Dept. of Interior, Pierre
John C. Kirk, SD Dept. of Game, Fish and Parks, Pierre
Jim Oehlerking, U.S. Army Corps of Engineers, Pierre
Jerome M. Schaar, Natural Resources Conservation Service, USDA, Huron
Larry D. Janis, U.S. Army Corps of Engineers, Omaha District, Omaha
Jay D. Vogt, SD State Historical Society, Pierre

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

DATE _____

AMENDMENT NO. 2 TO THE FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED GOVERNMENTAL AGENCIES AND PUBLIC GROUPS

As required by guidelines for the preparation of environmental impact statements, an environmental review has been performed on the proposed action below. It is proposed that the action be financed by a Clean Water State Revolving Fund (SRF) loan.

PROJECT:	SANITARY SEWER SYSTEM EXPANSION – PHASE 1
LOCATION:	LAKE POINSETT SANITARY DISTRICT BROOKINGS & HAMLIN COUNTIES, SOUTH DAKOTA
PROJECT NUMBER:	C461027-02
Total Cost/CWSRF Share:	$1,750,000/$1,094,700

In January 2005, the Lake Poinsett Sanitary District was awarded a Clean Water SRF loan of $590,000 to help finance a $1.1 million expansion of their sanitary sewer system. The expansion would serve additional users in the Stone Bridge and Arlington Beach areas. During the preliminary design phase the district was unable to secure a Conditional Use Permit for the site of the proposed wastewater treatment facility.

Due to delays resulting from changing consulting engineers and the need to relocate the wastewater treatment facility, the estimated project cost has risen to $1,750,000. The Lake Poinsett Sanitary District is requesting a new loan for $1,094,700. The loan carries an interest rate of 3.5% and a term of 30 years. The district has secured a Consolidated Water Facilities Construction Program grant of $300,000, has committed local funds of $100,000, and hook-up fees of $255,300. The original loan of $590,000, which had an interest rate of 3.25% and a 20-year term, has been rescinded.

The purpose of the project remains the same. It is to reduce pollution to Lake Poinsett by continuing the construction of the wastewater collection and treatment system around the lake. Failing septic tanks will be replaced and septic drain fields will be abandoned.

The engineering report, environmental information, and other supporting data are on file at the Department of Environment and Natural Resources (DENR), Division of Financial and Technical Assistance, 523 East Capitol Avenue, Pierre, South Dakota 57501. All information is available for public scrutiny at DENR in Pierre and at the sanitary district office located at 508 West Lake Drive on Lake Poinsett.

Comments that support or disagree with this amendment may be submitted to DENR for consideration. After evaluating the comments received, the department will make a final decision; however, no final action will be taken for at least 30 calendar days after publication of this amendment.

James Feeney
Natural Resources Administrator

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

September 6, 2006

RE: CWSRF Lake Poinsett Sanitary District
C461027-01

Lawrence Furney, President
Lake Poinsett Sanitary District
PO Box 116
Lake Norden, SD 57248-0116

Dear Mr. Furney:

Enclosed is Amendment No. 1 to the Finding of No Significant Impact (FNSI) for Phase 1 of Lake Poinsett Sanitary District's proposed expansion project. The FNSI amendment is a State Revolving Fund program requirement. It must be published a minimum of once in the district's legal newspaper. The date which the FNSI will be published must be typed on the first page of the FNSI on the line appearing after the word "DATE".

A copy of the amendment must be kept on file at the Lake Poinsett Sanitary District's office for public scrutiny for 30 days following the publication of the amendment. After the 30-day comment period has elapsed, an affidavit of publication documenting the publication of the amendment and any written public comments received regarding the amendment must be submitted to the department.

If you have any questions regarding this matter, please feel free to contact me at 605- 773-5668.

Sincerely,

Gayleen Lowe

Gayleen Lowe, P.E.
Natural Resources Project Engineer
Water Resources Assistance Program

Enclosure

Cc: Donna Rhody, Clerk, Lake Poinsett Sanitary District, Lake Norden, SD
Erwin Kirkvold, P.E., Kirkvold Associates, Inc., 5435 S. 74th St., Lincoln, NE 68516
Greg Maag, First District Assoc. of Local Governments, Watertown, SD
Donald R. Gober, Fish & Wildlife Service, U.S. Dept. of Interior, Pierre
John C. Kirk, SD Dept. of Game, Fish and Parks, Pierre
Jim Oehlerking, U.S. Army Corps of Engineers, Pierre
Jerome M. Schaar, Natural Resources Conservation Service, U.S. Dept. of Agriculture, Huron
Candace M. Gorton, U.S. Army Corps of Engineers, Omaha
Jay D. Vogt, SD State Historical Society, Pierre

The purpose of the project remains the same. It is to reduce pollution to Lake Poinsett by continuing the construction of the wastewater collection and treatment system around the lake. This project is Phase 1 of a multi-phase plan to sewer all residences and businesses on the lake. Failing septic tanks will be replaced and all existing drain fields will be abandoned. Instead, septic tank effluent will be collected and transported via new sewer lines to new and existing lagoons.. The lagoonshave been designed for total containment/retention and will not discharge to the lake.

An archaeological survey was conducted of the revised lagoon location. The survey report concluded that the project be granted approval to proceed as planned. Notwithstanding this approval, the district must temporarily halt the project and notify the State Archaeologist and State Historic Preservation Officer if excavation reveals any indication of past human habitation.

The project impacts an area greater than one acre and is therefore subject to state and federal storm water regulations. The district must apply for a storm water permit. The permit will require the district to plan and implement sediment and erosion control measures to prevent polluted storm runoff from entering Lake Poinsett.

The project will not adversely affect endangered species, wildlife habitat, or prime agricultural lands. The review process did not indicate that significant environmental impacts would result from the proposed action. Consequently, a preliminary decision not to prepare an environmental impact statement has been made. This action is taken on the basis of a careful review of the engineering report, environmental information documents, and other supporting data which are on file at the Department of Environment and Natural Resources (DENR), Division of Financial and Technical Assistance, 523 East Capitol Avenue, Pierre, South Dakota 57501. All information is available for public scrutiny at DENR in Pierre and at the sanitary district office located at 508 West Lake Drive on Lake Poinsett.

Comments that support or disagree with this amendment may be submitted to DENR for consideration. After evaluating the comments received, the department will make a final decision; however, no final action will be taken for at least 30 calendar days after publication of this amendment.

James Feeney, Administrator
Water Resources Assistance Program

Index By State County
National Register Information System 05/04/2009 14:49:31

No filter Include filter in navigation

Row	State	County	Resource Name	Address	City	Listed	Multiple
1	SD	Brookings	**Brookings Central Residential Historic District**	Roughly bounded by Third St., Sixth St. (SD 14), Medary Ave.and Fifth Ave.	Brookings	1994-06-03	
2	SD	Brookings	**Brookings Central Residential Historic District (Boundary Increase)**	601 4th St., and 521 4th St.	Brookings	2001-06-06	
3	SD	Brookings	**Brookings City Hall**	4th St.	Brookings	1982-06-17	
4	SD	Brookings	**Brookings Commercial Historic District**	Roughly along Main Ave.between the C&NW Railraod and the alley N. Fifth St.	Brookings	1988-04-19	
5	SD	Brookings	**Brookings County Courthouse**	4th St. and 6th Ave.	Brookings	1976-12-12	
6	SD	Brookings	**Brookings University Residential Historic District**	Roughly bounded by Harvey Dunn St., Medary Ave., Sixth St., and Main Ave.	Brookings	1999-02-12	
7	SD	Brookings	**Caldwell, W. A., House**	804 Sixth Ave.	Brookings	1986-11-03	
8	SD	Brookings	**Carnegie Public Library**	524 4th St.	Brookings	1980-05-07	
9	SD	Brookings	**Chicago and Northwestern Railroad Depot**	Main St.	Brookings	1976-10-08	
10	SD	Brookings	**Cobel, Ivan, House**	727 Main Ave.	Brookings	2003-08-14	

Page 1

First Page Next Page Refresh Export

Index By State County
National Register Information System 05/04/2009 14:50:31

No filter Include filter in navigation

State: SD
County: Brookings

Row	Resource Name	Address	City	Listed	Multiple
11	**Coolidge Sylvan Theatre**	Medary Ave.	Brookings	1987-02-26	
12	**Coughlin Campanile**	Medary Ave.	Brookings	1987-02-26	
13	**Experimental Rammed Earth Machine Shed**	South Dakota State University campus, NW corner	Brookings	1993-08-26	
14	**Experimental Rammed Earth Wall**	Medary Ave. behind Dean of Agricultural and Biological Sciences House, South Dakota State University campus	Brookings	1991-06-28	
15	**Fishback House**	501 8th St.	Brookings	1976-10-08	
16	**Fishback House (Boundary Increase)**	501 Eighth St.	Brookings	1987-03-09	
17	**Graham House**	927 7th St.	Brookings	1994-06-03	
18	**Henry-Martinson House**	405 Kasan Ave.	Volga	1977-12-20	
19	**Intermill House**	46408 203rd St.	Bruce	1997-05-09	
20	**Micheel, Herman F., Gothic Arched-Roof Barn**	5 Mi. N and 3 mi. W of White	White	1991-01-25	

Page 2

First Page Next Page Refresh Export

Index By State County
National Register Information System 05/04/2009 14:50:53

No filter Include filter in navigation

State: SD
County: Brookings

Row	Resource Name	Address	City	Listed	Multiple
21	**Nick's Hamburger Shop**	427 Main Ave.	Brookings	1986-11-06	
22	**Pioneer Park Bandshell**	SW corner Jct. US 14 & 1st Ave.	Brookings	2007-11-19	Federal Relief Construction in South Dakota MPS
23	**Sexauer Seed Company Historic District**	Roughly bounded by Main Ave., DM & E RR tracks, 2nd St., and 6th Ave.	Brookings	2001-11-08	
24	**Sexauer, George P., House**	929 Fourth St.	Brookings	1990-01-26	
25	**Singsaas Lutheran Church**	19716 487th Ave.	Lake Hendricks Township	2003-10-23	
26	**South Dakota Department of Transportation Bridge No. 06-129-020**	Local Rd. over Big Sioux R.	Bruce	1999-11-30	Historic Bridges in South Dakota MPS
27	**South Dakota Department of Transportation Bridge No. 06-142-190**	Local Rd. over Big Sioux R.	Brookings	1999-11-30	Historic Bridges in South Dakota MPS
28	**St. Mary's School**	220 E. 3rd St.	Elkton	1996-10-24	
29	**Sterling Methodist Church**	US 77, 5 mi. E of Bruce	Bruce	1989-10-19	
30	**Stock Judging Pavilion**	11th St. and Medary Ave.	Brookings	1978-10-19	

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First Page Next Page Refresh Export

Index By State County
National Register Information System 05/04/2009 14:51:04

No filter Include filter in navigation ☐

State: SD
County: Brookings

Row	Resource Name	Address	City	Listed	Multiple
31	**Trygstad Law and Commerce Building**	401 Main Ave.	Brookings	1984-02-23	
32	**Volga Auditorium**	212 Kasan Ave.	Volga	2000-07-05	Federal Relief Construction in South Dakota MPS
33	**Vostad Farm**	2905 16th Ave. W	Brookings	2005-04-14	
34	**Walters, Solomon, House**	Railway St.	Bruce	1978-04-26	
35	**Wenona Hall and Wecota Hall**	Medary Ave.	Brookings	1980-05-07	
36	**Woodbine Cottage**	929 Harvey Dunn St.	Brookings	1990-01-26	
37	**Woodbine Cottage Experimental Rammed Earth Wall**	W of jct. of 10th St. and Medary Ave., South Dakota State University campus	Brookings	1991-06-28	

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First Page Next Page Refresh Export

Index By State County
National Register Information System 05/04/2009 14:46:59

No filter Include filter in navigation ☐

Row	State	County	Resource Name	Address	City	Listed	Multiple
1	SD	Hamlin	**Estelline Bandstand and Gazebo Park**	105 N. Main	Estelline	1999-11-30	
2	SD	Hamlin	**First National Bank of Norden**	503 Main Av.	Lake Norden	2005-10-26	
3	SD	Hamlin	**First State Bank of Hazel**	Main St., W of jct. with SD 22	Hazel	1997-02-21	
4	SD	Hamlin	**Hamlin County Courthouse**	300 4th St.	hayti	2000-10-12	County Courthouses of South Dakota MPS
5	SD	Hamlin	**Hendrickson, Hendrick and Waldur, Farm**	Hwy. 28	Lake Norden	1985-11-13	Architecture of Finnish Settlement TR
6	SD	Hamlin	**Hoffelt Drug Store**	212 Main St.	Estelline	2008-02-19	
7	SD	Hamlin	**Kant Hotel**	N of SD 28	Bryant	1985-10-31	
8	SD	Hamlin	**Lohr, Charles and Mary, House**	1705 State Ave.	Estelline	1982-07-19	
9	SD	Hamlin	**Old St. Mary's Catholic Parish House**	5th Ave. and Underwood St.	Bryant	1988-12-27	
10	SD	Hamlin	**South Dakota Dept. of Transportation Bridge No. 29-221-060**	Local rd. over the Big Sioux R.	Castlewood	1993-12-09	Historic Bridges in South Dakota MPS

Page 1

First Page Next Page Refresh Export

Index By State County
National Register Information System 05/04/2009 14:49:02

No filter Include filter in navigation

State: SD
County: Hamlin

Row	Resource Name	Address	City	Listed	Multiple
11	**South Dakota Dept. of Transportation Bridge No. 29-279-010**	Local rd. over Stray Horse Cr.	Castlewood	1993-12-09	Historic Bridges in South Dakota MPS
12	**Tuohino, Jacob and Amelia, Farm**	S of Hwy. 28	Lake Norden	1985-11-13	Architecture of Finnish Settlement TR

Page 2

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Appendix C

NRCS Wetland Maps

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
205 6th ST
Brookings, South Dakota 57006

Phone: (605) 692-8003
Fax: (605) 692-4484

FEB 0 9 2007

February 8, 2007

Jeramy McMahon
Banner Associates Inc
409 22nd Ave S
Brookings, SD 57006

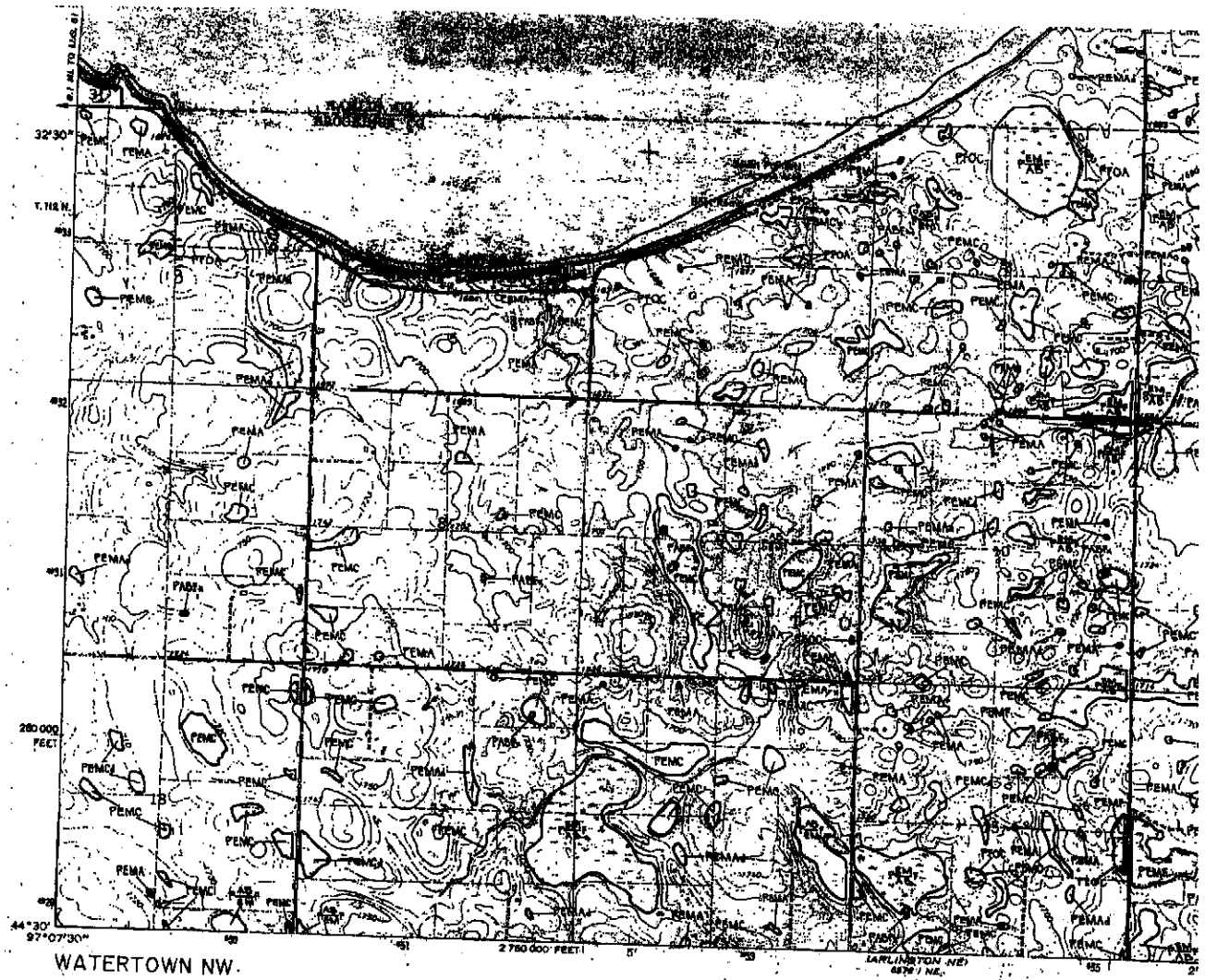
Dear Jeramy:

Thank you for taking the time to meet with me the other day. I'm sorry but there is no official wetland map for the SW ¼ Section 4 T112N R52W. I trust the NRI map for that area will give you an indication of the potential for local wetlands. NRCS maintains wetlands information for parts of Brookings County that is applicable for agricultural purposes. If we can be of assistance on any other future projects, please don't hesitate to call.

Sincerely,

Darrell Granbois
District Conservationist

Helping People Help the Land
An Equal Opportunity Provider and Employer



WATERTOWN NW.
WATERTOWN

SCALE 1:24 000

1 MILE

1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

10 acres

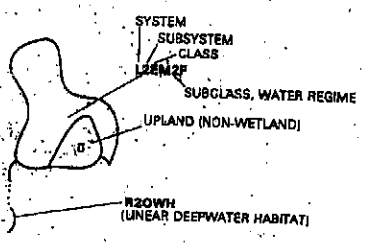
20 acres

ACREAGE GUIDE

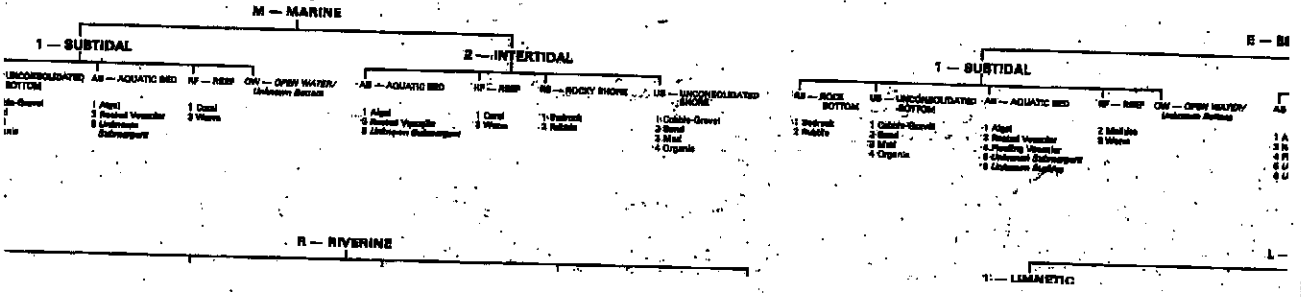
ormation including a narrative report concerning the esources depicted on this document may be available. ation, contact:

Regional Director (ARDE) Region VI
U.S. Fish and Wildlife Service
O. Box 2548, Denver Federal Center
Denver, Colorado 80225

SYMBOLOGY EXAMPLE



— Primarily represents upland areas, but may include unidentified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.



U.S.D.A.
Soil Conservation Service

SCS-CPA-026
(5-89)

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION

1. Name and Address of Person: Loren Bjerlund, Route 1 Box 121, Estelline, SD 57234

2. Date of Request:

3. County: Hamlin

4. Name of USDA Agency or Person Requesting Determination: ASCS

5. Farm No. and Tract No.: #1698 T-See CPA-026A

SECTION I – HIGHLY ERODIBLE LAND

	Yes	No	Field No.(s)	Total Acres
6. Is soil survey now available for making a highly erodible land determination?				
7. Are there highly erodible soil map units on this farm?				
8. List highly erodible fields that, according to ASCS records, were used to produce an agricultural commodity in any crop year during 1981-1985.				
9. List highly erodible fields that have been or will be converted for the production of agricultural commodities and, according to ASCS records, were not used for this purpose in any crop year during 1981-1985; and were not enrolled in a USDA set-aside or diversion program.				

10. This Highly Erodible Land determination was completed in the: Office [ ] Field [ ]

NOTE: If you have highly erodible cropland fields, you may need to have a conservation plan developed for these fields. For further information, contact the local office of the Soil Conservation Service.

SECTION II – WETLAND

	Yes	No	Field No.(s)	Total Wetland Acres (Estimate)
11. Are there hydric soils on this farm?	X			
List field numbers and acres, where appropriate, for the following:				
12. Wetlands (W), including abandoned wetlands, or Farmed Wetlands (FW). Wetlands may be farmed under natural conditions. Farmed Wetlands may be farmed and maintained in the same manner as they were prior to December 23, 1985, as long as they are not abandoned.			See CPA-026A	23
13. Prior Converted Wetlands (PC) - The use, management, drainage, and alteration of prior converted wetlands (PC) are not subject to FSA unless the area reverts to wetland as a result of abandonment. You should inform SCS of any area to be used to produce an agricultural commodity that has not been cropped, managed, or maintained for 5 years or more.				
14. Artificial Wetlands (AW) - Artificial Wetlands includes irrigation induced wetlands. These Wetlands are not subject to FSA.				
15. Minimal Effect Wetlands (MW) - These wetlands are to be farmed according to the minimal effect agreement signed at the time the minimal effect determination was made.				
16. Converted Wetlands (CW) - In any year that an agricultural commodity is planted on these Converted Wetlands, you will be ineligible for USDA benefits. If you believe that the conversion was commenced before December 23, 1985, or that the conversion was caused by a third party, contact the ASCS office to request a commenced or third party determination.			IAL WETLAND DETERMINATIO or Highlighted Tracts Only	

17. The planned alteration measures on wetlands in fields _____ are considered maintenance and are in compliance with FSA.

18. The planned alteration measures on wetlands in fields _____ are not considered to be maintenance and if installed will cause the area to become a Converted Wetland (CW). See Item 16 for information on CW.

19. This wetland determination was completed in the: Office [X] Field [ ]

20. This determination was: Delivered [ ] Mailed [ ] To the Person on Date: _____

NOTE: If you do not agree with this determination, you may request a reconsideration from the person that signed this form in Block 22 below. The reconsideration is a prerequisite for any further appeal. The request for the reconsideration must be in writing and must state your reasons for the request. The request must be mailed or delivered within 15 days after this determination is mailed to or otherwise made available to you. Please see reverse side of the producer's copy of this form for more information on appeals procedure.

NOTE: If you intend to convert additional land to cropland or alter any wetlands, you must initiate another Form AD-1026 at the local office of ASCS. Abandonment is where land has not been cropped, managed, or maintained for 5 years or more. You should inform SCS if you plan to produce an agricultural commodity on abandoned wetlands.

21. Remarks

Wetlands may be cropped when natural conditions permit; however, they cannot be drained or altered to destroy their wetland character for purposes of commodity production. This determination is for USDA benefits only.

22. Signature of SCS District Conservationist: Roger Mueller

23. Date: 10-2-90

Assistance and programs of the Soil Conservation Service available without regard to race, religion, color, sex, age, handicap, etc.

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

SCS-CPA-026A
1-88

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION
(Continuation Form)

NAME AND ADDRESS OF PERSON
Loren Bjorklund
Route 1 Box 121
Estelline, SD 57241

2. COUNTY Hamlin
3. FARM NUMBER 1698
4. SHEET ____ OF ____

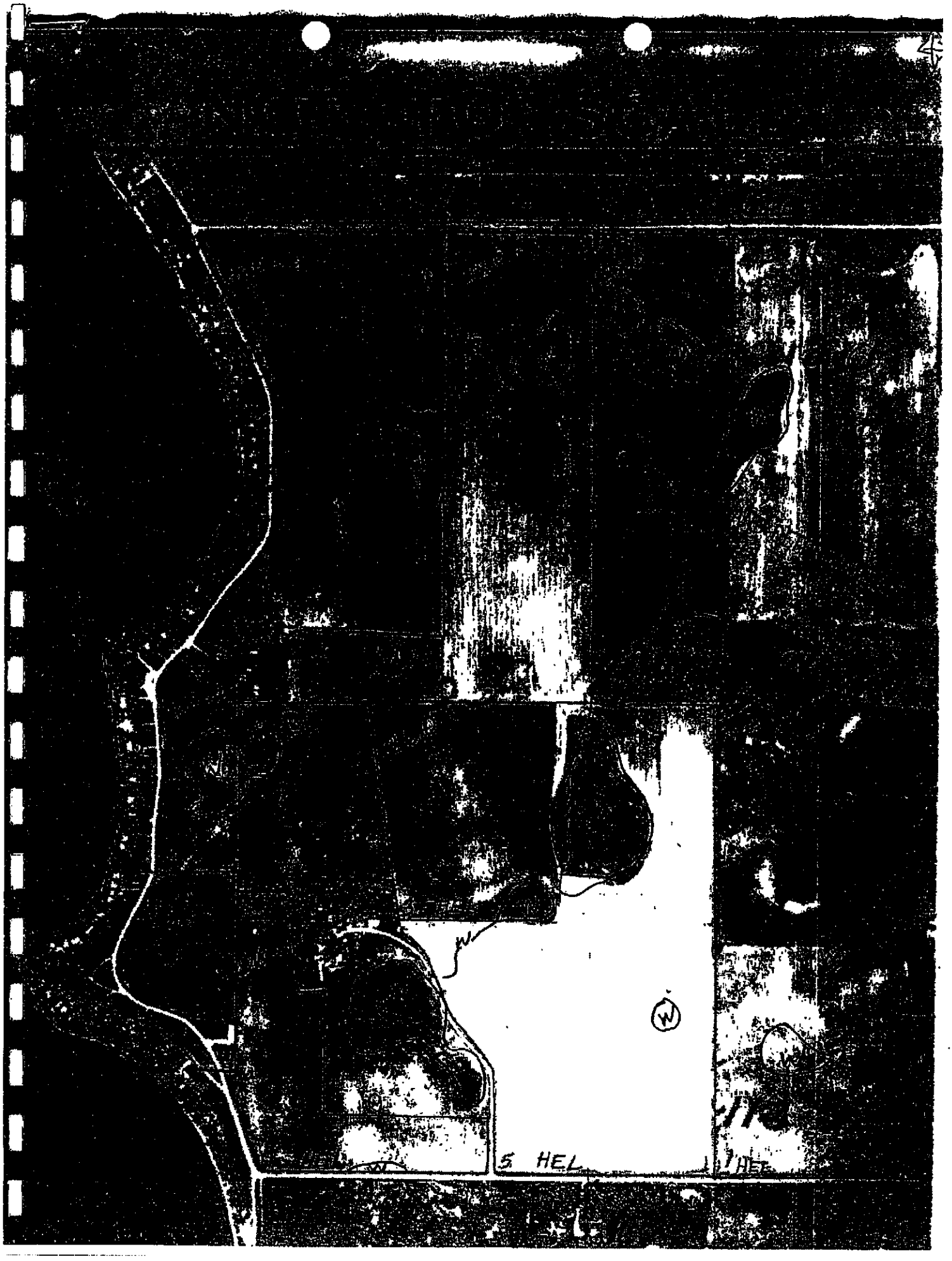
ITEM NUMBERS FROM SCS-CPA-026	TRACT NUMBER	FIELD NUMBERS																	ACRES (subtotal)[1]
																Estimate			
12	754	1	2	3	4	5													23
	1985	1																	0

REMARKS:

5. SIGNATURE OF SCS DISTRICT CONSERVATIONIST
Roger Mueller

6. DATE
10-2-90

[1] These acres need to be included in the totals on the parent SCS-CPA-026 form.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1 HEL

SCS-C 026
(- .91)

ervation Service

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION

1. Name and Address of Person: ~~Hamlin County Equip. Box 37 Hayti, SD 57241~~

2. Date of Request:

3. County: Hamlin

Name of USDA Agency or Person Requesting Determination: ASCS

5. Farm No. and Tract No.: # 857 T- 1532

SECTION I - HIGHLY ERODIBLE LAND

	FIELD NO.(s)	TOTAL ACRES
Is soil survey now available for making a highly erodible land determination? Yes ☐ No ☐		
7. Are there highly erodible soil map units on this farm? Yes ☐ No ☐		
8. List highly erodible fields that, according to ASCS records, were used to produce an agricultural commodity in any crop year during 1981-1985.		
9. List highly erodible fields that have been or will be converted for the production of agricultural commodities and, according to ASCS records, were not used for this purpose in any crop year during 1981-1985; and were not enrolled in a USDA set-aside or diversion program.		
This Highly Erodible Land determination was completed in the: Office ☐ Field ☐		

SECTION II - WETLAND

Estimate

	FIELD NO.(s)	TOTAL ACRES
Are there hydric soils on this farm? Yes ☒ No ☐		
12. Wetlands (W), including abandoned wetlands, or Farmed Wetlands (FW) or Farmed Wetlands Pasture (FWP). Wetlands may be farmed under natural conditions. Farmed Wetlands and Farmed Wetlands Pasture may be farmed and maintained in the same manner as they were prior to December 23, 1985, as long as they are not abandoned.	1, 2, 3, 4, 5, 6	13.2
13. Prior Converted Cropland (PC). Wetlands that were converted prior to December 23, 1985. The use, management, drainage, and alteration of prior converted cropland (PC) are not subject to the wetland conservation provisions unless the area reverts to wetland as a result of abandonment.		
14. Artificial Wetlands (AW). Artificial wetlands includes irrigation-induced wetlands. These wetlands are not subject to the wetland conservation provisions.		
15. Minimal Effect Wetlands (MW). These wetlands are to be farmed according to the minimal-effect agreement signed at the time the minimal-effect determination was made.		
16. Mitigation Wetlands (MIW). Wetlands on which a person is actively mitigating a frequently cropped area or a wetland converted between December 23, 1985 and November 28, 1990.		
17. Restoration with Violation (RVW-year). A restored wetland that was in violation as a result of conversion after November 28, 1990, or the planting of an agricultural commodity or forage crop.		
18. Restoration without Violation (RSW). A restored wetland converted between December 23, 1985 and November 28, 1990, on which an agricultural commodity has not been planted.		
19. Replacement Wetlands (RPW). Wetlands which are converted for purposes other than to increase production, where the wetland values are being replaced at a second site.		
20. Good Faith Wetlands (GFW+year). Wetlands on which ASCS has determined a violation to be in good faith and the wetland has been restored.		
21. Converted Wetlands (CW). Wetlands converted after December 23, 1985 and prior to November 28, 1990. In any year that an agricultural commodity is planted on these Converted Wetlands, you will be ineligible for USDA benefits.		
22. Converted Wetland (CW+year). Wetlands converted after November 28, 1990. You will be ineligible for USDA program benefits until this wetland is restored.		
23. Converted Wetland Non-Agricultural use (CWNA). Wetlands that are converted for trees, fish production, shrubs, cranberries, vineyards or building and road construction.		
24. Converted Wetland Technical Error (CWTE). Wetlands that were converted as a result of incorrect determination by SCS.		

OFFICIAL WETLAND DETERMINATION for Highlighted Tracts Only

25. The planned alteration measures on wetlands in fields _____ are considered maintenance and are in compliance with FSA.

26. The planned alteration measures on wetlands in fields _____ are not considered to be maintenance and if installed will cause the area to become a Converted Wetland (CW). See item 22 for information on CW+year.

27. The wetland determination was completed in the office ☒ field ☐ and was delivered ☐ mailed ☒ to the person on 4-1-92

28. Remarks.

Wetlands may be cropped when natural conditions permit; however, they cannot be drained or altered to destroy their wetland character for purposes of commodity production. This determination is for USDA benefits only.

29. *I certify that the above determination is correct and adequate for use in determining eligibility for USDA program benefits, and that wetland hydrology, hydric soils, and hydrophytic vegetation under normal circumstances exist on all areas outlined as Wetlands, Farmed Wetlands, and Farmed Wetlands Pasture.*

30. Signature of SCS District Conservationist: Ron Mueller

31. Date: 4-1-92

Assistance and programs of the Soil Conservation Service available without regard to race, religion, color, sex, age, or handicap.

SCS Copy

NOT

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U.S.D.A.
Soil Conservation Service

SCS-CPA-026
(5-89)

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION

1. Name and Address of Person
Leroy Isaacson
Route 1 Box 83
Lake Norden SD 57248

2. Date of Request

3. County
Hamlin

Name of USDA Agency or Person Requesting Determination
ASCS

5. Farm No. and Tract No.
#1746 T- See CPA 026A

SECTION I – HIGHLY ERODIBLE LAND

	Yes	No	Field No.(s)	Total Acres
6. Is soil survey now available for making a highly erodible land determination?				
7. Are there highly erodible soil map units on this farm?				
8. List highly erodible fields that, according to ASCS records, were used to produce an agricultural commodity in any crop year during 1981-1985.				
9. List highly erodible fields that have been or will be converted for the production of agricultural commodities and, according to ASCS records, were not used for this purpose in any crop year during 1981-1985; and were not enrolled in a USDA set-aside or diversion program.				

10. This Highly Erodible Land determination was completed in the: Office [ ] Field [ ]

NOTE: If you have highly erodible cropland fields, you may need to have a conservation plan developed for these fields. For further information, contact the local office of the Soil Conservation Service.

SECTION II – WETLAND

	Yes	No	Field No.(s)	Total Wetland Acres (Estimate)
11. Are there hydric soils on this farm?	X			
List field numbers and acres, where appropriate, for the following :				
12. Wetlands (W), including abandoned wetlands, or Farmed Wetlands (FW). Wetlands may be farmed under natural conditions. Farmed Wetlands may be farmed and maintained in the same manner as they were prior to December 23, 1985, as long as they are not abandoned.			See CPA 026A	204
13. Prior Converted Wetlands (PC) - The use, management, drainage, and alteration of prior converted wetlands (PC) are not subject to FSA unless the area reverts to wetland as a result of abandonment. You should inform SCS of any area to be used to produce an agricultural commodity that has not been cropped, managed, or maintained for 5 years or more.				
14. Artificial Wetlands (AW) - Artificial Wetlands includes irrigation induced wetlands. These Wetlands are not subject to FSA.				
15. Minimal Effect Wetlands (MW) - These wetlands are to be farmed according to the minimal effect agreement signed at the time the minimal effect determination was made.				
16. Converted Wetlands (CW) - In any year that an agricultural commodity is planted on these Converted Wetlands, you will be ineligible for USDA benefits. If you believe that the conversion was commenced before December 23, 1985, or that the conversion was caused by a third party, contact the ASCS office to request a commenced or third party determination.			OFFICIAL WETLAND DETERMINATION for Highlighted Tracts Only	

17. The planned alteration measures on wetlands in fields _____ are considered maintenance and are in compliance with FSA.

18. The planned alteration measures on wetlands in fields _____ are not considered to be maintenance and if installed will cause the area to become a Converted Wetland (CW). See item 16 for information on CW.

19. This wetland determination was completed in the: Office [X] Field [ ]

20. This determination was: Delivered [ ] Mailed [X] To the Person on Date: 1-29-91

NOTE: If you do not agree with this determination, you may request a reconsideration from the person that signed this form in Block 22 below. The reconsideration is a prerequisite for any further appeal. The request for the reconsideration must be in writing and must state your reasons for the request. The request must be mailed or delivered within 15 days after this determination is mailed to or otherwise made available to you. Please see reverse side of the producer's copy of this form for more information on appeals procedure.

NOTE: If you intend to convert additional land to cropland or alter any wetlands, you must initiate another Form AD-1026 at the local office of ASCS. Abandonment is where land has not been cropped, managed, or maintained for 5 years or more. You should inform SCS if you plan to produce an agricultural commodity on abandoned wetlands.

Remarks: Wetlands may be cropped when natural conditions permit; however, they cannot be drained or altered to destroy their wetland character for purposes of commodity production. This determination is for USDA benefits only.

22. Signature of SCS District Conservationist
Roger Muelle

23. Date
1-22-91

Assistance and programs of the Soil Conservation Service available to all

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Services

SCS-CPA-026A
1-88

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION
(Continuation Form)

1. NAME AND ADDRESS OF PERSON
Leroy Isgacson
Route 1 Box 83
Lake Norden SD 57248

2. COUNTY
Hamlin

3. FARM NUMBER 1746

4. SHEET 1 OF 2

ITEM NUMBERS FROM SCS-CPA-026	TRACT NUMBER	FIELD NUMBERS																	ACRES (subtotal)[1]
12	1324	1																	1
12	1471	1	2	3	UN														11
12	1555	1	UN																13
12	1588	1	UN																2
12	1595	1																	3
12	1589	2																	3
12	1590	1																	5
12	1591	1	UN																29
12	1592	1																	13
12	1593	1	UN																17
12	1594	1	3	UN															20
12	1596	1	2	4	UN														11
12	1598	1	2	UN															5
12	1597	1																	1
12	1599																		0
12	1601																		0

REMARKS:

5. SIGNATURE OF SCS DISTRICT CONSERVATIONIST
Roger Mueller

6. DATE

[1] These acres need to be included in the totals on the parent SCS-CPA-026 form.

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Services

SCS-CPA-026A
1-88

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION
(Continuation Form)

1. NAME AND ADDRESS OF PERSON
Leroy Isaacson
Route 1 Box 83
Lake Norden SD 57248

2. COUNTY
Hamlin

3. FARM NUMBER 1746

4. SHEET 2 OF 2

ITEM NUMBERS FROM SCS-CPA-026	TRACT NUMBER	FIELD NUMBERS																	ACRES (subtotal)[1]
12	1600	1																	1
12	1602	2																	1
12	1603	3	4	5	~~6~~	UN													33
12	1605	2																	19
12	1606	1	UN																16

REMARKS:

5. SIGNATURE OF SCS DISTRICT CONSERVATIONIST
Roger Muelh

6. DATE

[1] These acres need to be included in the totals on the parent SCS-CPA-026 form.

59.9

OFFICIAL WETLAND DETERMINA
for Highlighted Tracts Only

35.7

16

16.0

479

Appendix D

Design Calculations

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 1
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR critiria

BOD_5 20 lb/acre per day on overall system.

Retention time	365 days (Total Retention)	
Total Residents	531 people	(Not including Jody Howard Campground)
Permanent Residents	165 people	(Not including Jody Howard Campground)
Nonpermanent Residents	366 people	(Not including Jody Howard Campground)

Estimated Annual Flow:

Permanent Residences:	165 people * 365 days * 60gpcd		=	3,613,500 gal.
Nonpermanent Residences:	366 people * 180 days * 50% occupied *60gpcd		=	1,976,400 gal.
Jody Howard Campground			=	330,000
		Total	=	5,919,900 gal.
				791,430 $ft.^3$

Equivalent Population: 5,919,900 gal./yr ÷ 60gpcd ÷ 365 days = 270 people

Average flow pumped:	6	MG for 365 days
	16220	gal/day
	0.01622	MG/day
	18.2	acre-feet
BOD_5	59.5	lb/d
Evaporation	3.17	ft
Percipitation	2.04	ft
Net Evaporation	1.13	ft
Design Net Evaporation:	1.13 ft *50% = 0.56	ft
Seepage	1.9	ft
Min area of pond	3.0 Acres	(Based on BOD loading)
	7.40 Acres	(Based on Hydraulic loading)

Total area	**7.40 acres**
	322344 ft^2

Primary Pond

Working depth	3.5	ft
Area of pond	7.40	acre
	322344	ft^2
L:W	2.0	:1
Width	401	ft
Length	802	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 922
F = 521

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft.	Length Ft.	Width Ft.	Area Ac.	ft^2
Bottom	774	373	6.6	288,702
2.0	790	389	7.1	
3.5	802	401	7.4	321,602
4.0	806	405	7.5	
5.0	814	413	7.7	336,182
6.5	826	425	8.1	

1,592,743 ft^3

Volume of Pond from (Bottom to 5')
11.9 MG

Volume of Pond from (2' to 5')
7.2 MG

Detention time
444 days

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 1
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR critiria

Length of Dike on Ponds

Dike Length =	1696	+	894	=	2590	Feet
				TOTAL	2590	Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	870240	Cu Ft
	32230	Cu Yd
@ 1.3 Shrinkage =	42000	Cu Yd
Volume of Gravel for Road =	6475	Cu Ft
	240	Cu Yd
TOTAL	480	Tons

Fencing Req'd if 1 pond is used =			2590	Ft.
Seeding (From fence to top of dike)				
From Fence	29260	SF		
Outside Dike =	90378	SF	0.67	Ac
TOTAL	119638	SF	2.07	Ac
			2.80	Ac
Top Soil Replacement (6" of Topsoil in seeded areas)				
Seeded Area =	2.80	Ac		
	121968	SF		
x 0.5' =	60984	CF		
Volume of Topsoil =	2259	CY		
@ 30% Shrinkage Factor =	3000	CY		
RIPRAP (2' from Bottom to Top of Dike)				
Hypotnuse =	24.7			
Area of RIPRAP =	56750	ft^2		
RIPRAP Needed =	4300	Tons		
DRAINAGE FABRIC				
Drainage Fabric Needed =	6400	Yd^2		
SOIL LINER				
Hypotnuse =	32.25			
Area of Soil Liner =	366809	ft^2		
@ 30% Shrinkage Factor =	17700	Yd^3		
TOTAL AREA NEEDED				
(Including 10 feet around the outside area)				
Area =	12.00	Acres		

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 2
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR critiria

BOD_5 20 lb/acre per day on overall system.

Retention time	365	days (Total Retention)
Total Residents	270	people
Permanent Residents	49	people
Nonpermanent Residents	221	people

Estimated Annual Flow:

Permanent Residences:	49 people * 365 days * 60gpcd		=	1,073,100 gal.
Nonpermanent Residences:	221 people* 180 days * 50% occupied *60gpcd		=	1,193,400 gal.
		Total	=	2,266,500 gal.
				303,008 ft.^{3}

Equivalent Population: 2,266,500 gal/yr + 60gpcd + 365 days = 103 people

Average flow pumped:	2	MG for 365 days
	6210	gal/day
	0.00621	MG/day
	6.96	acre-feet

BOD_5	22.8	lb/d		
Evaporation	3.17	ft		
Percipitation	2.04	ft		
Net Evaporation	1.13	ft		
Design Net Evaporation:	1.13 ft *50% =		0.56	ft
Seepage	1.9	ft		
Min area of pond	1.1	Acres	(Based on BOD Loading)	
	2.90	Acres	(Based on Hydraulic Loading)	

Total area	**2.90**	**acres**
	126324	ft^2

Primary Pond

Working depth	3.5	ft
Area of pond	2.90	acre
	126324	ft^2
L:W	2.0	:1
Width	251	ft
Length	502	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 622
F = 371

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft.	Length Ft.	Width Ft.	Area Ac.	ft^2
Bottom	474	223	2.4	105,702
2.0	490	239	2.7	
3.5	502	251	2.9	126,002
4.0	506	255	3.0	
5.0	514	263	3.1	135,182
6.5	526	275	3.3	

620,743 ft^3

Volume of Pond from (Floor to 5')
4.6 MG

Volume of Pond from (2' to 5')
2.8 MG

Detention time
449 Days

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 2
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR criteria

Length of Dike on Ponds

Dike Length =	1096	+	594	=	1690	Feet
				TOTAL	1690	Feet

X-Sectional Area of Dike =	336	Sq.Ft.		
Volume of Embankment =	567840	Cu Ft		
	21030	Cu Yd		
@ 1.3 Shrinkage =	28000	Cu Yd		
Volume of Gravel for Road =	4225	Cu Ft		
	156	Cu Yd		
TOTAL	313	Tons		
Fencing Req'd if 1 pond is used =			1920	Ft.
Seeding (From fence to top of dike)				
From Fence	20260	SF		
Outside Dike =	60692	SF	0.47	Ac
TOTAL	80952	SF	1.39	Ac
			1.90	Ac
Top Soil Replacement (6" of Topsoil in seeded areas)				
Seeded Area =	1.90	Ac		
	82764	SF		
x 0.5' =	41382	CF		
Volume of Topsoil =	1533	CY		
@ 30% Shrinkage Factor =	2000	CY		
RIPRAP (2' from Bottom to Top of Dike)				
Hypotnuse =	24.7			
Area of RIPRAP =	34486	ft^3		
RIPRAP Needed =	2600	Tons		
DRAINAGE FABRIC				
Drainage Fabric Needed =	3900	Yd^2		
SOIL LINER				
Hypotnuse =	32.25			
Area of Soil Liner =	154785	ft^3		
@ 30% Shrinkage Factor =	7500	Yd^3		
TOTAL AREA NEEDED (Including 10 feet around the outside area)				
Area =	6.00	Acres		

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 3
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR critiria

BOD_5 20 lb/acre per day on overall system.

Retention time	365	days (Total Retention)
Total Residents	597	people
Permanent Residents	185	people
Nonpermanent Residents	412	people

Estimated Annual Flow:

Permanent Residences:	185 people * 365 days * 60gpcd	=	4,051,500	gal.
Nonpermanent Residences:	412 people* 180 days * 50% occupied *60gpcd	=	2,224,800	gal.
	Total	=	6,276,300	gal.
			839,078	$ft.^3$

Equivalent Population: 6,276,300 gal/yr ÷ 60gpcd ÷ 385 days = 287 people

Average flow pumped:

6	MG for 365 days	
17190	gal/day	
0.01719	MG/day	
19.26	acre-feet	

BOD_5	63.1 lb/d		
Evaporation	3.17 ft		
Percipitation	2.04 ft		
Net Evaporation	1.13 ft		
Design Net Evaporation:	1.13 ft *50% =	0.56	ft
Seepage	1.9 ft		
Min area of pond	3.2 Acres	(Based on BOD Loading)	
	7.90 Acres	(Based on Hydraulic Loading)	

Total area	**7.90 acres**
	344124 ft^2

Primary Pond

Working depth	3.5	ft
Area of pond	7.90	acre
	344124	ft^2
L:W	2.0	:1
Width	415	ft
Length	830	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 950
F = 535

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft.	Length Ft.	Width Ft.	Area Ac.	ft^2
Bottom	802	387	7.1	310,374
2.0	818	403	7.6	
3.5	830	415	7.9	344,450
4.0	834	419	8.0	
5.0	842	427	8.3	359,534
6.5	854	439	8.6	

1,706,423 ft^3

Volume of Pond from (Floor to 5')
12.8 MG

Volume of Pond from (2' to 5')
7.7 MG

Detention time
446 Days

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Project Area 3
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20627.01.00

Loadings as per SDDENR criteria

Length of Dike on Ponds

Dike Length =	1752	+	922	=	2674	Feet
				TOTAL	2674	Feet

X-Sectional Area of Dike =	336	Sq.Ft.		
Volume of Embankment =	898,464	Cu Ft		
	33,280	Cu Yd		
@ 1.3 Shrinkage =	44,000	Cu Yd		
Volume of Gravel for Road =	6,685	Cu Ft		
	248	Cu Yd		
TOTAL	495	Tons		
Fencing Req'd if 1 pond is used =			2970	Ft.
Seeding (From fence to top of dike)				
From Fence	30,100	SF		
Outside Dike =	93,063	SF	0.69	Ac
TOTAL	123,163	SF	2.14	Ac
			2.90	Ac
Top Soil Replacement (6" of Topsoil in seeded areas)				
Seeded Area =	3	Ac		
	126,324	SF		
x 0.5' =	63,162	CF		
Volume of Topsoil =	2,339	CY		
@ 30% Shrinkage Factor =	3,100	CY		
RIPRAP (2' from Bottom to Top of Dike)				
Hypotnuse =	25			
Area of RIPRAP =	58,828	ft^2		
RIPRAP Needed =	4,500	Tons		
DRAINAGE FABRIC				
Drainage Fabric Needed =	6,600	Yd^2		
SOIL LINER				
Hypotnuse =	32			
Area of Soil Liner =	391,190	ft^2		
@ 30% Shrinkage Factor =	18,900	Yd^3		
TOTAL AREA NEEDED				
(Including 10 feet around the outside area)				
Area =	13.00	Acres		

Lake Poinsett WWTF - Improvements
Total Retention Period(365 day)
Proposed Jody Howard Campground
Stabilization pond Sizing and Calculations

Lake Poinsett, SD
BAI No. 20527.01.00

Loadings as per SDDENR criteria

BOD_5 20 lb/acre per day on overall system.

Retention time	365 days (Total Retention)	
Trave		68 dwellings
Travel Trailer Spaces with Individual Water and Sewer Hook-ups		35 dwellings
Travel Trailer Spaces with Individual Water but Without Sewer Hook-ups		33 dwellings

Estimated Annual Flow:
Jody Howard Campground = 330,000
Total = 330,000 gal.
44,118 $ft.^3$

Equivalent Population: 330,000 gal./yr ÷ 60gpcd ÷ 365 days = 15 people

Average flow pumped:
0 MG for 365 days
900 gal/day
0.0009 MG/day
1 acre-feet

BOD_5	3.315 lb/d	
Evaporation	3.17 ft	
Percipitation	2.04 ft	
Net Evaporation	1.13 ft	
Design Net Evaporation:	1.13 ft *50% =	0.56 ft
Min area of pond	0.2	(Based on BOD loadings)

Hydraulic loading 0.41 Acres

Total area	**0.41 acres**
	17674.3872 ft^2

Primary Pond

Seepage	1.9 ft
Working depth	3.5 ft
Area of pond	0.41 acre
	17674.387 ft^2
L:W	2.0 :1
Width	94 ft
Length	188 ft
Dike slope	4 :1
Width of road	10 ft
Ht of Embankment	8 ft

Calculate Outside Dimensions

E = 308
F = 214

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft.	Length Ft.	Width Ft.	Area Ac.	ft^2
Bottom	160	66	0.2	10560
2.0	176	82	0.3	
3.5	188	94	0.4	17672
4.0	192	98	0.4	
5.0	200	106	0.5	21200
6.5	212	118	0.6	

85373.33333 ft^3

Volume 0.6 MG

Detention time 667 day

Volume of Pond from (Floor to 2')
0 MG

Volume of Pond from (2' to 5')
0 MG

Length of Dike on Ponds

Dike Length =	468	+	280	=	748	Feet
				TOTAL	748	Feet

X-Sectional Area of Dike =	336	Sq.Ft.		
Volume of Embankment =	251328	Cu Ft		
	9310	Cu Yd		
@ 1.3 Shrinkage =	13000	Cu Yd		
Volume of Gravel for Road =	1870	Cu Ft		
	69	Cu Yd		
TOTAL	139	Tons		
Fencing Req'd if 1 pond is used =			1044	
Seeding (From fence to top of dike)				
From Fence	10840	SF		
Outside Dike =	8014	SF	0.25	Ac
TOTAL	18854	SF	0.18	Ac
			0.50	Ac
Top Soil Replacement (4" of Topsoil in seeded areas)				
Seeded Area =	0.50	Ac		
	21780	SF		
x 0.333' =	7253	CF		
Volume of Topsoil =	269	CY		
@ 30% Shrinkage Factor =	400	CY		
RIPRAP (2' from Bottom to Top of Dike)				
Hypotnuse =	24.7			
Area of RIPRAP =	11182	ft^3		
RIPRAP Needed =	900	Tons		
DRAINAGE FABRIC				
Drainage Fabric Needed =	1300	Yd^2		
SOIL LINER				
Hypotnuse =	32.25			
Area of Soil Liner =	29264	ft^3		
@ 30% Shrinkage Factor =	1500	Yd^3		
TOTAL AREA NEEDED				
(Including 10 feet around the outside area)				
Area =	2.00	Acres		

Appendix E

Alternative One – Opinion of Probable Costs

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER
CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Item No.	Description of Work and Materials	Quantity	Unit	Unit Price	Total Cost
Project Area 1 - Segment 2 - 194th Street (Prestrudes) to Outlet					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$249,140	$249,140
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	21,200	SY	$3	$63,600
4	Remove Existing Concrete Driveway	3,000	SY	$5	$15,000
5	Remove Existing Septic Tank	80	Each	$500	$40,000
6	Granular Bedding Material	2,000	Ton	$12	$24,000
7	Pipe Foundation Material	660	Ton	$15	$9,900
8	Stabilization Pond Unclassified Excavation	42,000	CY	$5	$210,000
9	Stabilization Pond 12-Inch Clay Liner	17,700	CY	$4	$70,800
10	Topsoil Placement	3,000	CY	$3	$9,000
11	Geotechnical Services	1	Lump Sum	$6,000	$6,000
12	Compaction - Moisture/Density Test	35	Each	$200	$7,000
13	Percolation or Permeability Tests	3	Each	$500	$1,500
14	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
15	Stabilization Pond Inlet Structure	1	Each	$3,800	$3,800
16	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
17	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	2,890	LF	$4	$11,560
18	Riprap, Class A	4,300	Ton	$50	$215,000
19	Erosion Control Fabric	6,400	SY	$4	$25,600
20	16-foot Tubular Frame Gate	1	Each	$300	$300
21	Warning Sign	4	Each	$200	$800
22	Exploratory Excavation	50	Hour	$200	$10,000
23	6" Dia. SDR 35 PVC Gravity Sewer Pipe	120	LF	$25	$3,000
24	6" Dia. SDR 35 PVC Gravity Sewer Pipe	8,445	LF	$20	$168,900
25	4" Dia. SDR 35 PVC Gravity Sewer Pipe	8,000	LF	$18	$144,000
26	4" Dia. Class 150 PVC Forcemain Pipe	6,700	LF	$10	$67,000
27	1 1/4" Dia. Class 150 PVC Forcemain Pipe	1,200	LF	$10	$12,000
28	48" Dia. Sanitary Sewer Manhole	30	Each	$3,000	$90,000
29	4" Sewer Service Connection	80	Each	$200	$16,000
30	1 1/4" Sewer Service Connection	24	Each	$800	$19,200
31	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
32	Septic Tank Pumping and Inspection	104	Each	$200	$20,800
33	1,000 Gallon Septic Tank and Appurtenances	52	Each	$2,000	$104,000
34	Grinder Pump Station, Control and Appurtenances	24	Each	$8,000	$192,000
35	Base Course and Gravel Surfacing	7,150	Ton	$12	$85,800
36	Hot-Mix Asphalt Pavement	3,600	Ton	$75	$270,000
37	PCC Driveway Pavement	3,000	SY	$50	$150,000
38	Seeding	6	Acre	$1,500	$9,000
39	Silt Fence	3,000	LF	$5	$15,000
40	Lift Station, Valve Vault and Appurtenances	4	Each	$100,000	$400,000
	Opinion of Probable Construction Costs (January 2008)				$2,762,000
	Land Purchase for Stabilization Pond				$37,000
	Contingencies				$414,000
	Engineering Services:				
	Design Engineering and Administration				$181,000
	Construction Contract Administration				$174,000
	Administration and Legal				$161,000
	Opinion of Probable Construction Costs				$3,729,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER

CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 1 - Segment 1 - Hanson Add'n to 194th Street (Prestrudes)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$113,500	$113,500
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	21,200	SY	$3	$63,600
4	Remove Existing Concrete Driveway	3,000	SY	$5	$15,000
5	Remove Existing Septic Tank	12	Each	$500	$6,000
6	Granular Bedding Material	2,000	Ton	$12	$24,000
7	Pipe Foundation Material	660	Ton	$15	$9,900
8	Compaction - Moisture/Density Test	35	Each	$200	$7,000
9	Exploratory Excavation	50	Hour	$200	$10,000
10	8" Dia. SDR 35 PVC Gravity Sewer Pipe	80	LF	$25	$2,000
11	6" Dia. SDR 35 PVC Gravity Sewer Pipe	6,010	LF	$20	$120,200
12	4" Dia. SDR 35 PVC Gravity Sewer Pipe	2,200	LF	$18	$39,600
13	6" Dia. Directional Bore Gravity Sewer Pipe	800	LF	$50	$40,000
14	4" Dia. Class 150 PVC Forcemain Pipe	700	LF	$10	$7,000
15	1 1/4" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
16	48" Dia. Sanitary Sewer Manhole	29	Each	$3,000	$87,000
17	4" Sewer Service Connection	71	Each	$200	$14,200
18	1 1/4" Sewer Service Connection	2	Each	$800	$1,600
19	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
20	Septic Tank Pumping and Inspection	24	Each	$200	$4,800
21	1,000 Gallon Septic Tank and Appurtenances	12	Each	$2,000	$24,000
22	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
23	Base Course and Gravel Surfacing	7,150	Ton	$12	$85,800
24	Hot-Mix Asphalt Pavement	3,600	Ton	$75	$270,000
25	PCC Driveway Pavement	3,000	SY	$50	$150,000
26	Seeding	4	Acre	$1,500	$6,000
27	Silt Fence	2,000	LF	$5	$10,000
28	Lift Station, Valve Vault and Appurtenances	1	Each	$100,000	$100,000
	Opinion of Probable Construction Costs (January 2008)				$1,244,000
	Contingencies				$187,000
	Engineering Services:				
	Design Engineering and Administration				$86,000
	Construction Contract Administration				$82,000
	Administration and Legal				$72,000
	Opinion of Probable Construction Costs				$1,673,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER
CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 2 - Segment 1 - GF&P State Park to 196th Street (South Side of Hanson Add'n)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$209,290	$209,290
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	1,000	SY	$3	$3,000
4	Remove Existing Concrete Driveway	2,000	SY	$5	$10,000
5	Remove Existing Septic Tank	45	Each	$500	$22,500
6	Granular Bedding Material	1,925	Ton	$12	$23,100
7	Pipe Foundation Material	650	Ton	$15	$9,750
8	Compaction - Moisture/Density Test	25	Each	$200	$5,000
9	Stabilization Pond Unclassified Excavation	28,000	CY	$5	$140,000
10	Stabilization Pond 12-Inch Clay Liner	7,500	CY	$4	$30,000
11	Topsoil Placement	2,000	CY	$3	$6,000
12	Geotechnical Services	1	Lump Sum	$6,000	$6,000
13	Compaction - Moisture/Density Test	35	Each	$200	$7,000
14	Percolation or Permeability Tests	3	Each	$500	$1,500
15	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
16	Stabilization Pond Inlet Structure	1	Each	$3,600	$3,600
17	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
18	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	1,990	LF	$4	$7,960
19	Riprap, Class A	2,600	Ton	$50	$130,000
20	Erosion Control Fabric	3,900	SY	$4	$15,600
21	16-foot Tubular Frame Gate	1	Each	$300	$300
22	Warning Sign	4	Each	$200	$800
23	Exploratory Excavation	50	Hour	$200	$10,000
24	8" Dia. SDR 35 PVC Gravity Sewer Pipe	240	LF	$25	$6,000
25	6" Dia. SDR 35 PVC Gravity Sewer Pipe	8,275	LF	$20	$165,500
26	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,800	LF	$18	$104,400
27	4" Dia. Class 150 PVC Forcemain Pipe	4,100	LF	$10	$41,000
28	1 1/4" Dia. Class 150 PVC Forcemain Pipe	1,600	LF	$10	$16,000
29	48" Dia. Sanitary Sewer Manhole	26	Each	$3,000	$78,000
30	4" Sewer Service Connection	58	Each	$200	$11,600
31	1 1/4" Sewer Service Connection	32	Each	$800	$25,600
32	2" Sewage Air Release Valve and Manhole	5	Each	$3,600	$18,000
33	Septic Tank Pumping and Inspection	90	Each	$200	$18,000
34	1,000 Gallon Septic Tank and Appurtenances	45	Each	$2,000	$90,000
35	Grinder Pump Station, Control and Appurtenances	32	Each	$8,000	$256,000
36	Base Course and Gravel Surfacing	3,900	Ton	$12	$46,800
37	Hot-Mix Asphalt Pavement	170	Ton	$200	$34,000
38	PCC Driveway Pavement	2,000	SY	$50	$100,000
39	Seeding	10	Acre	$1,500	$15,000
40	Silt Fence	4,000	LF	$5	$20,000
41	Lift Station, Valve Vault and Appurtenances	6	Each	$100,000	$600,000
	Opinion of Probable Construction Costs (January 2008)				$2,299,000
	Contingencies				$345,000
	Engineering Services:				
	Design Engineering and Administration				$152,000
	Construction Contract Administration				$148,000
	Administration and Legal				$133,000
	Opinion of Probable Construction Costs				$3,075,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER

CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 3 - Segment 1 - Prairie Quay to Indian Knolls (West Lake Drive)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$76,350	$76,350
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	12,800	SY	$3	$38,400
4	Remove Existing Concrete Driveway	1,000	SY	$5	$5,000
5	Remove Existing Septic Tank	8	Each	$500	$4,000
6	Granular Bedding Material	1,100	Ton	$12	$13,200
7	Pipe Foundation Material	370	Ton	$15	$5,550
8	Exploratory Excavation	50	Hour	$200	$10,000
9	8" Dia. SDR 35 PVC Gravity Sewer Pipe	80	LF	$25	$2,000
10	6" Dia. SDR 35 PVC Gravity Sewer Pipe	4,800	LF	$20	$96,000
11	4" Dia. SDR 35 PVC Gravity Sewer Pipe	1,400	LF	$18	$25,200
12	4" Dia. Class 150 PVC Forcemain Pipe	1,400	LF	$10	$14,000
13	1¼" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
14	48" Dia. Sanitary Sewer Manhole	15	Each	$3,000	$45,000
15	4" Sewer Service Connection	52	Each	$200	$10,400
16	1¼" Sewer Service Connection	2	Each	$800	$1,600
17	2" Sewage Air Release Valve and Manhole	1	Each	$3,800	$3,800
18	Septic Tank Pumping and Inspection	16	Each	$200	$3,200
19	1,000 Gallon Septic Tank and Appurtenances	8	Each	$2,000	$16,000
20	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
21	Base Course and Gravel Surfacing	2,250	Ton	$12	$27,000
22	Hot-Mix Asphalt Pavement	2,160	Ton	$75	$162,000
23	PCC Driveway Pavement	1,000	SY	$50	$50,000
24	Seeding	3	Acre	$1,500	$4,500
25	Silt Fence	1,000	LF	$5	$5,000
26	Lift Station, Valve Vault and Appurtenances	2	Each	$100,000	$200,000
	Opinion of Probable Construction Costs (January 2008)				**$840,000**
	Contingencies				$126,000
	Engineering Services:				
	Design Engineering and Administration				$84,000
	Construction Contract Administration				$56,000
	Administration and Legal				$49,000
	Opinion of Probable Construction Costs				**$1,137,000**

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER

CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 3 - Segment 2 - (West Lake Drive) Olsen's Subdivision to Nitteberg Beach					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$111,670	$111,670
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	11,200	SY	$3	$33,600
4	Remove Existing Concrete Driveway	2,000	SY	$5	$10,000
5	Remove Existing Septic Tank	30	Each	$500	$15,000
6	Granular Bedding Material	1,415	Ton	$12	$16,980
7	Pipe Foundation Material	500	Ton	$15	$7,500
8	Exploratory Excavation	50	Hour	$200	$10,000
9	6" Dia. SDR 35 PVC Gravity Sewer Pipe	80	LF	$25	$2,000
10	6" Dia. SDR 35 PVC Gravity Sewer Pipe	6,140	LF	$20	$122,800
11	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,800	LF	$18	$104,400
12	4" Dia. Class 150 PVC Forcemain Pipe	2,100	LF	$10	$21,000
13	1¼" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
14	48" Dia. Sanitary Sewer Manhole	21	Each	$3,000	$63,000
15	4" Sewer Service Connection	58	Each	$200	$11,600
16	1¼" Sewer Service Connection	2	Each	$800	$1,600
17	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
18	Septic Tank Pumping and Inspection	60	Each	$200	$12,000
19	1,000 Gallon Septic Tank and Appurtenances	30	Each	$2,000	$60,000
20	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
21	Base Course and Gravel Surfacing	2,900	Ton	$12	$34,800
22	Hot-Mix Asphalt Pavement	1,890	Ton	$75	$141,750
23	PCC Driveway Pavement	2,000	SY	$50	$100,000
24	Seeding	3	Acre	$1,500	$4,500
25	Silt Fence	1,000	LF	$5	$5,000
26	Lift Station, Valve Vault and Appurtenances	3	Each	$100,000	$300,000
	Opinion of Probable Construction Costs (January 2008)				**$1,222,000**
	Contingencies				$183,000
	Engineering Services:				
	Design Engineering and Administration				$89,000
	Construction Contract Administration				$81,000
	Administration and Legal				$71,000
	Opinion of Probable Construction Costs				**$1,846,000**

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER
CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 3 - Segment 3 & 4 - Nitteberg Beach to Saarinen's Beach					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$111,240	$111,240
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	1,500	SY	$3	$4,500
4	Remove Existing Concrete Driveway	1,500	SY	$5	$7,500
5	Remove Existing Septic Tank	29	Each	$500	$14,500
6	Granular Bedding Material	1,580	Ton	$12	$18,960
7	Pipe Foundation Material	520	Ton	$15	$7,800
8	Exploratory Excavation	50	Hour	$200	$10,000
9	8" Dia. SDR 35 PVC Gravity Sewer Pipe	160	LF	$25	$4,000
10	6" Dia. SDR 35 PVC Gravity Sewer Pipe	6,795	LF	$20	$135,900
11	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,600	LF	$18	$100,800
12	4" Dia. Class 150 PVC Forcemain Pipe	3,300	LF	$10	$33,000
13	1 1/4" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
14	48" Dia. Sanitary Sewer Manhole	22	Each	$3,000	$66,000
15	4" Sewer Service Connection	56	Each	$200	$11,200
16	1 1/4" Sewer Service Connection	2	Each	$800	$1,600
17	2" Sewage Air Release Valve and Manhole	4	Each	$3,600	$14,400
18	Septic Tank Pumping and Inspection	58	Each	$200	$11,600
19	1,000 Gallon Septic Tank and Appurtenances	29	Each	$2,000	$58,000
20	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
21	Base Course and Gravel Surfacing	3,250	Ton	$12	$39,000
22	Hot-Mix Asphalt Pavement	255	Ton	$200	$51,000
23	PCC Driveway Pavement	1,500	SY	$50	$75,000
24	Seeding	6	Acre	$1,500	$9,000
25	Silt Fence	2,000	LF	$5	$10,000
26	Lift Station, Valve Vault and Appurtenances	4	Each	$100,000	$400,000

Opinion of Probable Construction Costs (January 2008)	$1,217,000
Contingencies	$183,000
Engineering Services:	
Design Engineering and Administration	$89,000
Construction Contract Administration	$80,000
Administration and Legal	$70,000
Opinion of Probable Construction Costs	$1,639,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALTERNATIVE NO. 1 - SEPTIC TANKS RETAINED (GRAY WATER)
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER
CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 3 - Segment 5 - Saaranen's Beach to Nitteberg Subdivision (Hwy 28)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$154,440	$154,440
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	8,400	SY	$3	$25,200
4	Remove Existing Concrete Driveway	1,000	SY	$5	$5,000
5	Remove Existing Septic Tank	14	Each	$500	$7,000
6	Granular Bedding Material	890	Ton	$12	$10,680
7	Pipe Foundation Material	300	Ton	$15	$4,500
8	Stabilization Pond Unclassified Excavation	44,000	CY	$5	$220,000
9	Stabilization Pond 12-Inch Clay Liner	18,900	CY	$4	$75,600
10	Topsoil Placement	3,100	CY	$3	$9,300
11	Geotechnical Services	1	Lump Sum	$6,000	$6,000
12	Compaction - Moisture/Density Test	35	Each	$200	$7,000
13	Percolation or Permeability Tests	3	Each	$500	$1,500
14	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
15	Stabilization Pond Inlet Structure	1	Each	$3,600	$3,600
16	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
17	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	2,970	LF	$4	$11,880
18	Riprap, Class A	4,500	Ton	$50	$225,000
19	Erosion Control Fabric	6,600	SY	$4	$26,400
20	16-foot Tubular Frame Gate	1	Each	$300	$300
21	Warning Sign	4	Each	$200	$800
22	Exploratory Excavation	50	Hour	$200	$10,000
23	8" Dia. SDR 35 PVC Gravity Sewer Pipe	120	LF	$25	$3,000
24	6" Dia. SDR 35 PVC Gravity Sewer Pipe	3,805	LF	$20	$76,100
25	4" Dia. SDR 35 PVC Gravity Sewer Pipe	850	LF	$18	$15,300
26	4" Dia. Class 150 PVC Forcemain Pipe	12,500	LF	$10	$125,000
27	1 1/4" Dia. Class 150 PVC Forcemain Pipe	500	LF	$10	$5,000
28	48" Dia. Sanitary Sewer Manhole	14	Each	$3,000	$42,000
29	4" Sewer Service Connection	17	Each	$200	$3,400
30	1 1/4" Sewer Service Connection	10	Each	$800	$8,000
31	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
32	Septic Tank Pumping and Inspection	27	Each	$200	$5,400
33	1,000 Gallon Septic Tank and Appurtenances	14	Each	$2,000	$28,000
34	Grinder Pump Station, Control and Appurtenances	10	Each	$8,000	$80,000
35	Base Course and Gravel Surfacing	1,800	Ton	$12	$21,600
36	Hot-Mix Asphalt Pavement	1,400	Ton	$75	$105,000
37	PCC Driveway Pavement	1,000	SY	$50	$50,000
38	Seeding	5	Acre	$1,500	$7,500
39	Silt Fence	2,000	LF	$5	$10,000
40	Lift Station, Valve Vault and Appurtenances	3	Each	$100,000	$300,000

Opinion of Probable Construction Costs (January 2008)	$1,712,000
Land Purchase for Stabilization Pond	$40,000
Contingencies	$257,000
Engineering Services:	
Design Engineering and Administration	$118,000
Construction Contract Administration	$112,000
Administration and Legal	$101,000
Opinion of Probable Construction Costs	$2,340,000

Appendix F

Alternative Two – Opinion of Probable Costs

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER

CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Item No.	Description of Work and Materials	Quantity	Unit	Unit Price	Total Cost
	Project Area 1 - Segment 2 - 194th Street (Prestrudes) to Outlet				
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$248,715	$248,715
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	21,200	SY	$3	$63,600
4	Remove Existing Concrete Driveway	3,000	SY	$5	$15,000
5	Remove Existing Septic Tank	104	Each	$500	$52,000
6	Granular Bedding Material	2,000	Ton	$12	$24,000
7	Pipe Foundation Material	660	Ton	$15	$9,900
8	Stabilization Pond Unclassified Excavation	42,000	CY	$5	$210,000
9	Stabilization Pond 12-Inch Clay Liner	17,700	CY	$4	$70,800
10	Topsoil Placement	3,000	CY	$3	$9,000
11	Geotechnical Services	1	Lump Sum	$8,000	$8,000
12	Compaction - Moisture/Density Test	35	Each	$200	$7,000
13	Percolation or Permeability Tests	3	Each	$500	$1,500
14	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
15	Stabilization Pond Inlet Structure	1	Each	$3,600	$3,600
16	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
17	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	2,890	LF	$4	$11,560
18	Riprap, Class A	4,300	Ton	$50	$215,000
19	Erosion Control Fabric	6,400	SY	$4	$25,600
20	16-foot Tubular Frame Gate	1	Each	$300	$300
21	Warning Sign	4	Each	$200	$800
22	Exploratory Excavation	50	Hour	$200	$10,000
23	6" Dia. SDR 35 PVC Gravity Sewer Pipe	8,445	LF	$25	$211,125
24	4" Dia. SDR 35 PVC Gravity Sewer Pipe	8,000	LF	$18	$144,000
25	4" Dia. Class 150 PVC Forcemain Pipe	6,700	LF	$10	$67,000
26	1 1/4" Dia. Class 150 PVC Forcemain Pipe	1,200	LF	$10	$12,000
27	48" Dia. Sanitary Sewer Manhole	30	Each	$3,000	$90,000
28	4" Sewer Service Connection	80	Each	$200	$16,000
29	1 1/4" Sewer Service Connection	24	Each	$800	$19,200
30	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
31	Grinder Pump Station, Control and Appurtenances	24	Each	$8,000	$192,000
32	Base Course and Gravel Surfacing	7,150	Ton	$12	$85,800
33	Hot-Mix Asphalt Pavement	3,600	Ton	$75	$270,000
34	PCC Driveway Pavement	3,000	SY	$50	$150,000
35	Seeding	6	Acre	$1,500	$9,000
36	Silt Fence	3,000	LF	$5	$15,000
37	Lift Station, Valve Vault and Appurtenances	4	Each	$100,000	$400,000
	Opinion of Probable Construction Costs (January 2008)				$2,886,000
	Land Purchase for Stabilization Pond				$37,000
	Contingencies				$403,000
	Engineering Services:				
	Design Engineering and Administration				$176,000
	Construction Contract Administration				$169,000
	Administration and Legal				$157,000
	Opinion of Probable Construction Costs				$3,628,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
BAI No. 20627.01.00

BANNER

CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
Brookings, South Dakota 57006-0298
(605) 692-6342
fax (605) 692-5714

Project Area 1 - Segment 1 - Hanson Add'n to 194th Street (Prestrudes)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$116,250	$116,250
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	21,200	SY	$3	$63,600
4	Remove Existing Concrete Driveway	3,000	SY	$5	$15,000
5	Remove Existing Septic Tank	24	Each	$500	$12,000
6	Granular Bedding Material	2,000	Ton	$12	$24,000
7	Pipe Foundation Material	660	Ton	$15	$9,900
8	Compaction - Moisture/Density Test	35	Each	$200	$7,000
9	Exploratory Excavation	50	Hour	$200	$10,000
10	8" Dia. SDR 35 PVC Gravity Sewer Pipe	6,090	LF	$25	$152,250
11	4" Dia. SDR 35 PVC Gravity Sewer Pipe	2,200	LF	$18	$39,600
12	8" Dia. Directional Bore Gravity Sewer Pipe	800	LF	$65	$52,000
13	4" Dia. Class 150 PVC Forcemain Pipe	700	LF	$10	$7,000
14	1 1/4" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
15	48" Dia. Sanitary Sewer Manhole	29	Each	$3,000	$87,000
16	4" Sewer Service Connection	71	Each	$200	$14,200
17	1 1/4" Sewer Service Connection	2	Each	$800	$1,600
18	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
19	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
20	Base Course and Gravel Surfacing	7,150	Ton	$12	$85,800
21	Hot-Mix Asphalt Pavement	3,600	Ton	$75	$270,000
22	PCC Driveway Pavement	3,000	SY	$50	$150,000
23	Seeding	4	Acre	$1,500	$6,000
24	Silt Fence	2,000	LF	$5	$10,000
25	Lift Station, Valve Vault and Appurtenances	1	Each	$100,000	$100,000
	Opinion of Probable Construction Costs (January 2008)				$1,268,000
	Contingencies				$190,000
	Engineering Services:				
	Design Engineering and Administration				$90,000
	Construction Contract Administration				$84,000
	Administration and Legal				$73,000
	Opinion of Probable Construction Costs				$1,703,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
BAI No. 20827.01.00

BANNER
CONSULTING ENGINEERS & ARCHITECTS
BANNER ASSOCIATES, INC.
409 22nd Avenue South - P.O. Box 298
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Project Area 2 - Segment 1 - GF&P State Park to 195th Street (South Side of Hanson Add'n)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$209,415	$209,415
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	1,000	SY	$3	$3,000
4	Remove Existing Concrete Driveway	2,000	SY	$5	$10,000
5	Remove Existing Septic Tank	90	Each	$500	$45,000
6	Granular Bedding Material	1,925	Ton	$12	$23,100
7	Pipe Foundation Material	650	Ton	$15	$9,750
8	Compaction - Moisture/Density Test	25	Each	$200	$5,000
9	Stabilization Pond Unclassified Excavation	28,000	CY	$5	$140,000
10	Stabilization Pond 12-Inch Clay Liner	7,500	CY	$4	$30,000
11	Topsoil Placement	2,000	CY	$3	$6,000
12	Geotechnical Services	1	Lump Sum	$6,000	$6,000
13	Compaction - Moisture/Density Test	35	Each	$200	$7,000
14	Percolation or Permeability Tests	3	Each	$500	$1,500
15	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
16	Stabilization Pond Inlet Structure	1	Each	$3,600	$3,600
17	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
18	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	1,990	LF	$4	$7,960
19	Riprap, Class A	2,600	Ton	$50	$130,000
20	Erosion Control Fabric	3,900	SY	$4	$15,600
21	16-foot Tubular Frame Gate	1	Each	$300	$300
22	Warning Sign	4	Each	$200	$800
23	Exploratory Excavation	50	Hour	$200	$10,000
24	8" Dia. SDR 35 PVC Gravity Sewer Pipe	8,515	LF	$25	$212,875
25	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,800	LF	$18	$104,400
26	4" Dia. Class 150 PVC Forcemain Pipe	4,100	LF	$10	$41,000
27	1 1/4" Dia. Class 150 PVC Forcemain Pipe	1,600	LF	$10	$16,000
28	48" Dia. Sanitary Sewer Manhole	25	Each	$3,000	$75,000
29	4" Sewer Service Connection	58	Each	$200	$11,600
30	1 1/4" Sewer Service Connection	32	Each	$800	$25,600
31	2" Sewage Air Release Valve and Manhole	5	Each	$3,600	$18,000
32	Grinder Pump Station, Control and Appurtenances	32	Each	$8,000	$256,000
33	Base Course and Gravel Surfacing	3,900	Ton	$12	$46,800
34	Hot-Mix Asphalt Pavement	170	Ton	$200	$34,000
35	PCC Driveway Pavement	2,000	SY	$50	$100,000
36	Seeding	10	Acre	$1,500	$15,000
37	Silt Fence	4,000	LF	$5	$20,000
38	Lift Station, Valve Vault and Appurtenances	6	Each	$100,000	$600,000
	Opinion of Probable Construction Costs (January 2008)				$2,266,000
	Contingencies				$338,000
	Engineering Services:				
	Design Engineering and Administration				$149,000
	Construction Contract Administration				$143,000
	Administration and Legal				$130,000
	Opinion of Probable Construction Costs				$3,015,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
LAKE POINSETT SANITARY DISTRICT
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	Project Area 3 - Segment 1 - Prairie Quay to Indian Knolls (West Lake Drive)				
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$78,550	$78,550
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	12,800	SY	$3	$38,400
4	Remove Existing Concrete Driveway	1,000	SY	$5	$5,000
5	Remove Existing Septic Tank	16	Each	$500	$8,000
6	Granular Bedding Material	1,100	Ton	$12	$13,200
7	Pipe Foundation Material	370	Ton	$15	$5,550
8	Exploratory Excavation	50	Hour	$200	$10,000
9	8" Dia. SDR 35 PVC Gravity Sewer Pipe	4,880	LF	$25	$122,000
10	4" Dia. SDR 35 PVC Gravity Sewer Pipe	1,400	LF	$18	$25,200
11	4" Dia. Class 150 PVC Forcemain Pipe	1,400	LF	$10	$14,000
12	1¼" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
13	48" Dia. Sanitary Sewer Manhole	15	Each	$3,000	$45,000
14	4" Sewer Service Connection	52	Each	$200	$10,400
15	1¼" Sewer Service Connection	2	Each	$800	$1,600
16	2" Sewage Air Release Valve and Manhole	1	Each	$3,600	$3,600
17	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
18	Base Course and Gravel Surfacing	2,250	Ton	$12	$27,000
19	Hot-Mix Asphalt Pavement	2,160	Ton	$75	$162,000
20	PCC Driveway Pavement	1,000	SY	$50	$50,000
21	Seeding	3	Acre	$1,500	$4,500
22	Silt Fence	1,000	LF	$5	$5,000
23	Lift Station, Valve Vault and Appurtenances	2	Each	$100,000	$200,000
	Opinion of Probable Construction Costs (January 2008)				$851,000
	Contingencies				$128,000
	Engineering Services:				
	Design Engineering and Administration				$65,000
	Construction Contract Administration				$58,000
	Administration and Legal				$49,000
	Opinion of Probable Construction Costs				$1,151,000

20627.01.00

5/8/2009

OPINION OF PROBABLE COSTS
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409 22nd Avenue South - P.O. Box 298
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Project Area 3 - Segment 2 - (West Lake Drive) Olsen's Subdivision to Nittsberg Beach					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$111,970	$111,970
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	11,200	SY	$3	$33,600
4	Remove Existing Concrete Driveway	2,000	SY	$5	$10,000
5	Remove Existing Septic Tank	60	Each	$500	$30,000
6	Granular Bedding Material	1,415	Ton	$12	$16,980
7	Pipe Foundation Material	500	Ton	$15	$7,500
8	Exploratory Excavation	50	Hour	$200	$10,000
9	8" Dia. SDR 35 PVC Gravity Sewer Pipe	6,220	LF	$25	$155,500
10	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,800	LF	$18	$104,400
11	4" Dia. Class 150 PVC Forcemain Pipe	2,100	LF	$10	$21,000
12	1¼" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
13	48" Dia. Sanitary Sewer Manhole	21	Each	$3,000	$63,000
14	4" Sewer Service Connection	58	Each	$200	$11,600
15	1¼" Sewer Service Connection	2	Each	$800	$1,600
16	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
17	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
18	Base Course and Gravel Surfacing	2,900	Ton	$12	$34,800
19	Hot-Mix Asphalt Pavement	1,890	Ton	$75	$141,750
20	PCC Driveway Pavement	2,000	SY	$50	$100,000
21	Seeding	3	Acre	$1,500	$4,500
22	Silt Fence	1,000	LF	$5	$5,000
23	Lift Station, Valve Vault and Appurtenances	3	Each	$100,000	$300,000
	Opinion of Probable Construction Costs (January 2009)				$1,196,000
	Contingencies				$179,000
	Engineering Services:				
	Design Engineering and Administration				$87,000
	Construction Contract Administration				$79,000
	Administration and Legal				$89,000
	Opinion of Probable Construction Costs				$1,610,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
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Project Area 3 - Segment 3 & 4 - Nitteberg Beach to Saaranen's Beach					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$109,365	$109,365
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	1,500	SY.	$3	$4,500
4	Remove Existing Concrete Driveway	1,500	SY	$5	$7,500
5	Remove Existing Septic Tank	58	Each	$500	$29,000
6	Granular Bedding Material	1,580	Ton	$12	$18,960
7	Pipe Foundation Material	520	Ton	$15	$7,800
8	Exploratory Excavation	50	Hour	$200	$10,000
9	8" Dia. SDR 35 PVC Gravity Sewer Pipe	5,955	LF	$25	$148,875
10	4" Dia. SDR 35 PVC Gravity Sewer Pipe	5,600	LF	$18	$100,800
11	4" Dia. Class 150 PVC Forcemain Pipe	3,300	LF	$10	$33,000
12	1 1/4" Dia. Class 150 PVC Forcemain Pipe	100	LF	$10	$1,000
13	48" Dia. Sanitary Sewer Manhole	22	Each	$3,000	$66,000
14	4" Sewer Service Connection	56	Each	$200	$11,200
15	1 1/4" Sewer Service Connection	2	Each	$800	$1,600
16	2" Sewage Air Release Valve and Manhole	4	Each	$3,600	$14,400
17	Grinder Pump Station, Control and Appurtenances	2	Each	$8,000	$16,000
18	Base Course and Gravel Surfacing	3,250	Ton	$12	$39,000
19	Hot-Mix Asphalt Pavement	255	Ton	$200	$51,000
20	PCC Driveway Pavement	1,500	SY	$50	$75,000
21	Seeding	6	Acre	$1,500	$9,000
22	Silt Fence	2,000	LF	$5	$10,000
23	Lift Station, Valve Vault and Appurtenances	4	Each	$100,000	$400,000
	Opinion of Probable Construction Costs (January 2008)				$1,169,000
	Contingencies				$175,000
	Engineering Services:				
	Design Engineering and Administration				$85,000
	Construction Contract Administration				$77,000
	Administration and Legal				$68,000
	Opinion of Probable Construction Costs				$1,574,000

OPINION OF PROBABLE COSTS
PHASE II PROJECT AREAS
ALETERNATIVE NO. 2 - SEPTIC TANKS REMOVED
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fax (605) 692-5714

Project Area 3 - Segment 5 - Saarinen's Beach to Nitteberg Subdivision (Hwy 28)					
1	Mobilization, Bonds, and Insurance	1	Lump Sum	$154,315	$154,315
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$5,000	$5,000
3	Remove Existing Bituminous Surface	8,400	SY	$3	$25,200
4	Remove Existing Concrete Driveway	1,000	SY	$5	$5,000
5	Remove Existing Septic Tank	27	Each	$500	$13,500
6	Granular Bedding Material	890	Ton	$12	$10,680
7	Pipe Foundation Material	300	Ton	$15	$4,500
8	Stabilization Pond Unclassified Excavation	44,000	CY	$5	$220,000
9	Stabilization Pond 12-Inch Clay Liner	18,900	CY	$4	$75,600
10	Topsoil Placement	3,100	CY	$3	$9,300
11	Geotechnical Services	1	Lump Sum	$6,000	$6,000
12	Compaction - Moisture/Density Test	35	Each	$200	$7,000
13	Percolation or Permeability Tests	3	Each	$500	$1,500
14	Stabilization Pond Headwall/Level Indicator Structure	1	Each	$3,000	$3,000
15	Stabilization Pond Inlet Structure	1	Each	$3,600	$3,600
16	48" Dia. Stabilization Pond Inlet Control Structure	1	Each	$3,700	$3,700
17	48-Inch Woven Wire with 2-Strand Barbed Wire Fence	2,970	LF	$4	$11,880
18	Riprap, Class A	4,500	Ton	$50	$225,000
19	Erosion Control Fabric	6,600	SY	$4	$26,400
20	16-foot Tubular Frame Gate	1	Each	$300	$300
21	Warning Sign	4	Each	$200	$800
22	Exploratory Excavation	50	Hour	$200	$10,000
23	8" Dia. SDR 35 PVC Gravity Sewer Pipe	3,925	LF	$25	$98,125
24	4" Dia. SDR 35 PVC Gravity Sewer Pipe	850	LF	$18	$15,300
25	4" Dia. Class 150 PVC Forcemain Pipe	12,500	LF	$10	$125,000
26	1 1/4" Dia. Class 150 PVC Forcemain Pipe	500	LF	$10	$5,000
27	48" Dia. Sanitary Sewer Manhole	14	Each	$3,000	$42,000
28	4" Sewer Service Connection	17	Each	$200	$3,400
29	1 1/4" Sewer Service Connection	10	Each	$800	$8,000
30	2" Sewage Air Release Valve and Manhole	3	Each	$3,600	$10,800
31	Grinder Pump Station, Control and Appurtenances	10	Each	$8,000	$80,000
32	Base Course and Gravel Surfacing	1,800	Ton	$12	$21,600
33	Hot-Mix Asphalt Pavement	1,400	Ton	$75	$105,000
34	PCC Driveway Pavement	1,000	SY	$50	$50,000
35	Seeding	5	Acre	$1,500	$7,500
36	Silt Fence	2,000	LF	$5	$10,000
37	Lift Station, Valve Vault and Appurtenances	3	Each	$100,000	$300,000
	Opinion of Probable Construction Costs (January 2008)				$1,764,000
	Land Purchase for Stabilization Pond				$40,000
	Contingencies				$258,000
	Engineering Services:				
	Design Engineering and Administration				$118,000
	Construction Contract Administration				$112,000
	Administration and Legal				$100,000
	Opinion of Probable Construction Costs				$2,330,000

Appendix G

Recommended Plan: Rate Impacts

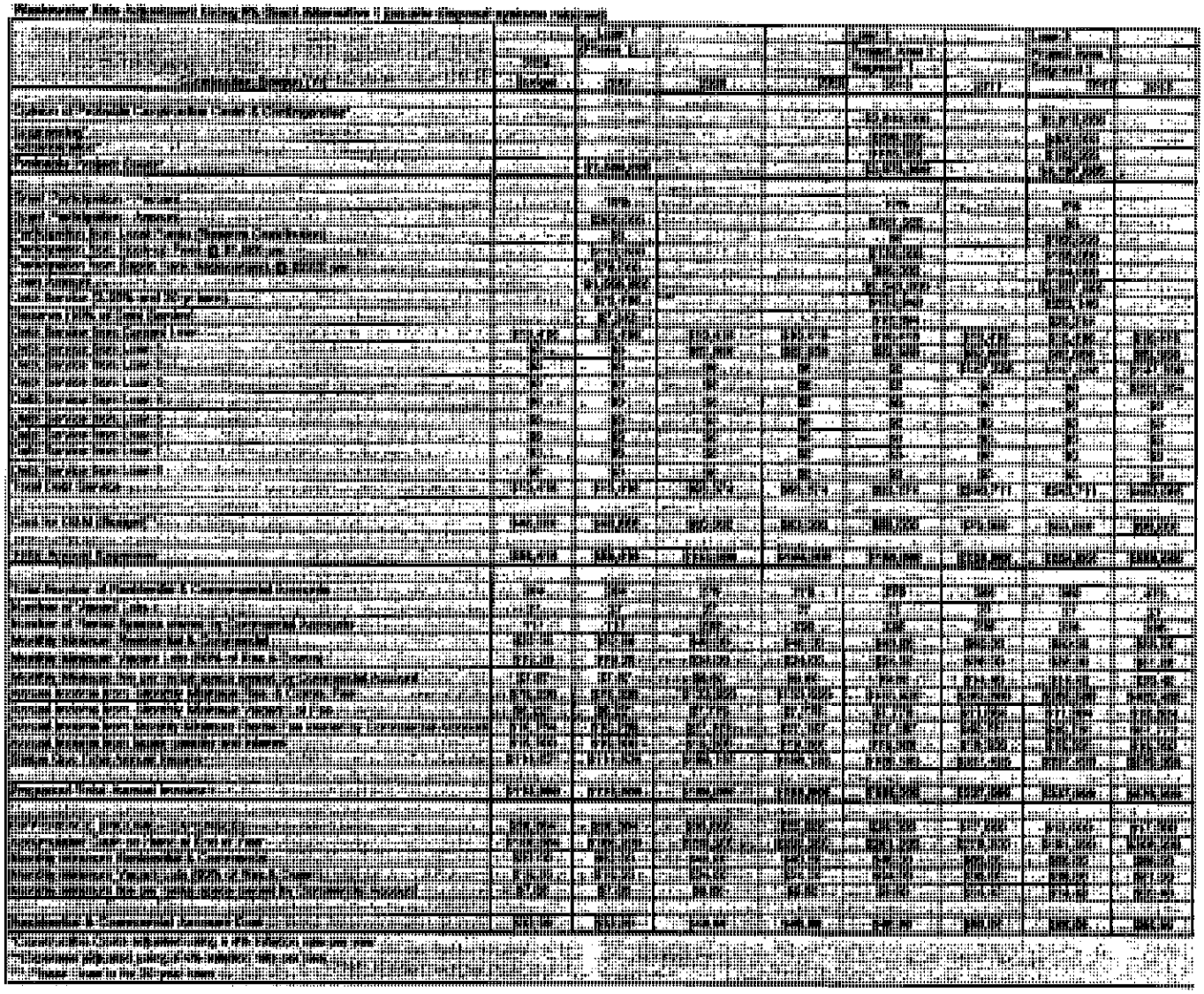
Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00

Summary Wastewater Rate Adjustment for Alternative 1 (on-site disposal systems serviced/replaced)

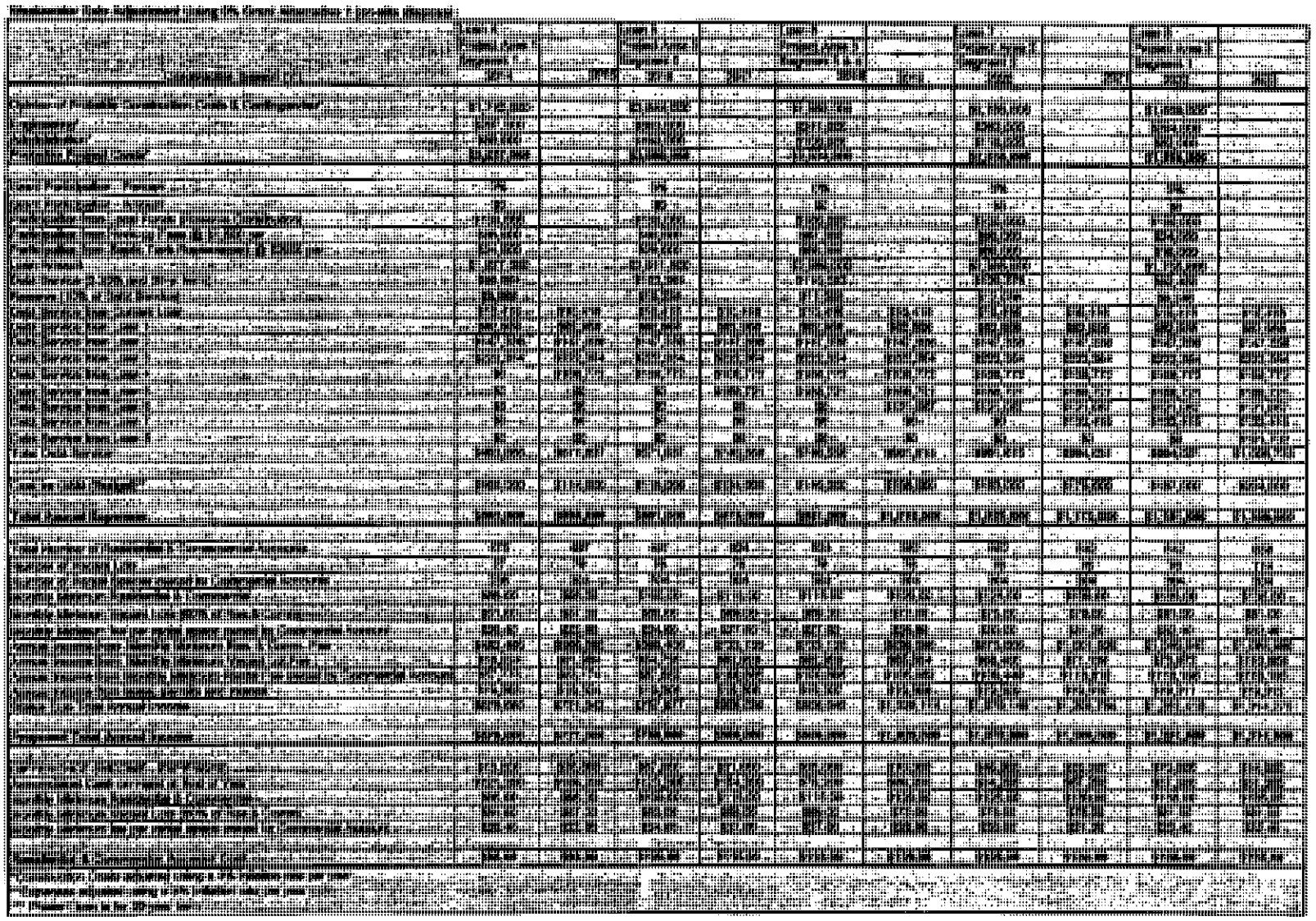
		Loan 1	Loan 2	Loan 3	Loan 4	Loan 5	Loan 6	Loan 7	Loan 8
		(Phase 1)	Proj. Area 2	Proj. Area 1	Proj. Area 1	Proj. Area 3	Proj. Area 3	Proj. Area 3	Proj. Area 3
	2006		Seg. 1	Seg. 2	Seg. 1	Seg. 5	Seg. 3 & 4	Seg.2	Seg. 1
Construction Season (Yr)	Budget	2007	2010	2012	2014	2016	2018	2020	2022
Probable Project Costs*		**$1,585,000**	**$3,075,000**	**$4,197,000**	**$2,037,000**	**$3,080,000**	**$2,334,000**	**$2,535,000**	**$1,895,000**
No.of Resid. & Comm. Accounts	204	279	369	473	497	524	582	642	658
No.of Vacant Lot Accounts	27	27	27	27	76	76	76	76	114
Commercial Accounts	117	236	236	236	304	304	304	304	304
Status Quo Total Annual Income	**$114,621**	**$188,183**	**$337,425**	**$576,059**	**$721,042**	**$906,039**	**$1,028,114**	**$1,205,784**	**$1,314,275**
Cost for O&M (Budget)**	$46,000	$60,000	$79,000	$96,000	$114,000	$134,000	$156,000	$179,000	$204,000
0% Grant:									
Grant Participation - Amount		$300,000	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	$10,416	$93,374	$240,711	$463,065	$571,837	$740,558	$861,615	$994,031	$1,095,733
Total Annual Expenses	$56,416	$153,000	$320,000	$559,000	$686,000	$875,000	$1,018,000	$1,173,000	$1,300,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$337,000**	**$576,000**	**$721,000**	**$906,000**	**$1,028,000**	**$1,206,000**	**$1,314,000**
Resid. & Comm. Monthly Fee	**$32.00**	**$40.00**	**$60**	**$85**	**$95**	**$115**	**$120.00**	**$130**	**$135**
25% Grant:									
Grant Participation - Amount		$300,000	$768,750	$1,049,250	$509,250	$770,000	$583,500	$633,750	$473,750
Total Debt Service	$10,416	$93,374	$213,982	$375,532	$454,793	$575,995	$660,341	$756,031	$827,381
Total Annual Expenses	$56,416	$153,000	$293,000	$472,000	$569,000	$710,000	$816,000	$935,000	$1,031,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$337,000**	**$511,000**	**$573,000**	**$713,000**	**$818,000**	**$978,000**	**$1,074,000**
Resid. & Comm. Monthly Fee	**$32.00**	**$40.00**	**$60**	**$75**	**$75**	**$90**	**$95**	**$105**	**$110**
50% Grant:									
Grant Participation - Amount		$300,000	$1,537,500	$2,098,500	$1,018,500	$1,540,000	$1,167,000	$1,267,500	$947,500
Total Debt Service	$10,416	$93,374	$169,433	$267,281	$317,031	$393,612	$444,144	$503,108	$547,005
Total Annual Expenses	$56,416	$153,000	$248,000	$363,000	$431,000	$528,000	$600,000	$682,000	$751,000
Proposed Total Annual Income	**$115,000**	**$188,000**	**$284,000**	**$380,000**	**$499,000**	**$598,000**	**$650,000**	**$795,000**	**$835,000**
Resid. & Comm. Monthly Fee	**$32**	**$40**	**$50**	**$55**	**$65**	**$75**	**$75**	**$85**	**$85**

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year

Impact on Wastewater Rates Using 2008 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00



Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
RAI No. 20627.01.00



Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00

Wastewater Rate Adjustment Using 25% Grant Alternative 1 (on-site disposal systems retained)

		Loan 1			Loan 2		Loan 3	
		(Phase 1)			Project Area 2		Project Area 1	
	2006				Segment 1		Segment 2	
Construction Season (Yr)	Budget	2007	2008	2009	2010	2011	2012	2013
Opinion of Probable Construction Costs & Contingencies*					$2,644,000		$3,615,000	
Engineering*					$298,000		$400,000	
Administration*					$133,000		$182,000	
Probable Project Costs*		**$1,595,000**			**$3,075,000**		**$4,197,000**	
Grant Participation - Percent		19%			25%		25%	
Grant Participation - Amount		$300,000			$768,750		$1,049,250	
Participation from Local Funds (Reserve Contribution)		$0			$0		$100,000	
Participation from Hook-up Fees @ $1,500 per		$112,500			$135,000		$156,000	
Participation from Septic Tank Replacement @ $2000 per		$76,000			$90,000		$104,000	
Loan Amount		$1,096,500			$2,081,250		$2,787,750	
Debt Service (3.25% and 30-yr term)		$76,416	***		$108,644		$146,863	
Reserve (10% of Debt Service)		$7,642			$10,864		$14,686	
Debt Service from Current Loan	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416
Debt Service from Loan 1	$0	$0	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958
Debt Service from Loan 2	$0	$0	$0	$0	$0	$120,608	$120,608	$120,608
Debt Service from Loan 3	$0	$0	$0	$0	$0	$0	$0	$161,550
Debt Service from Loan 4	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 5	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 6	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 7	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 8	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	$10,416	$10,416	$93,374	$93,374	$93,374	$213,982	$213,982	$375,532
Cost for O&M (Budget)**	$46,000	$48,000	$60,000	$63,000	$66,000	$79,000	$83,000	$96,000
Total Annual Expenses	**$56,416**	**$58,416**	**$153,000**	**$156,000**	**$159,000**	**$293,000**	**$297,000**	**$472,000**
Total Number of Residential & Commmercial Accounts	204	204	279	279	279	369	369	473
Number of Vacant Lots	27	27	27	27	27	27	27	27
Number of Rental Spaces owned by Commercial Accounts	117	117	236	236	236	236	236	236
Monthly Minimum Residential & Commercial	$32.00	$32.00	$40.00	$40.00	$40.00	$60.00	$60.00	$75.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$19.20	$19.20	$24.00	$24.00	$24.00	$36.00	$36.00	$45.00
Monthly Minimum fee per rental space owned by Commercial Account	$7.67	$7.67	$9.60	$9.60	$9.60	$14.40	$14.40	$18.00
Annual Income from Monthly Minimum Res. & Comm. Fee	$78,336	$78,336	$133,920	$133,920	$133,920	$265,680	$265,680	$425,700
Annual Income from Monthly Minimum Vacant Lot Fee	$6,221	$6,221	$7,776	$7,776	$7,776	$11,664	$11,664	$14,580
Annual Income from Monthly Minimum Rental Fee owned by Commercial Account	$10,764	$10,769	$27,187	$27,187	$27,187	$40,781	$40,781	$50,976
Annual Income from taxes, permits and interest	$19,300	$19,300	$19,300	$19,300	$19,300	$19,300	$19,301	$19,302
Status Quo Total Annual Income	$114,621	$114,625	$188,183	$188,183	$188,183	$337,425	$337,426	$510,558
Proposed Total Annual Income	**$115,000**	**$115,000**	**$188,000**	**$188,000**	**$188,000**	**$337,000**	**$337,000**	**$511,000**
DIFFERENCE (INCOME - EXPENSES)	$58,584	$56,584	$35,000	$32,000	$29,000	$44,000	$40,000	$39,000
Accumulated Cash on Hand at End of Year	$108,584	$165,200	$200,200	$232,200	$261,200	$305,200	$245,200	$284,200
Monthly Minimum Residential & Commercial	$32.00	$32.00	$40.00	$40.00	$40.00	$60.00	$60.00	$75.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$19.20	$19.20	$24.00	$24.00	$24.00	$36.00	$36.00	$45.00
Monthly Minimum fee per rental space owned by Commercial Account	$7.68	$7.68	$9.60	$9.60	$9.60	$14.40	$14.40	$18.00
Residential & Commercial Account Cost	**$32.00**	**$32.00**	**$40.00**	**$40.00**	**$40.00**	**$60.00**	**$60.00**	**$75.00**

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year
*** Phase I loan is for 20-year term

Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00

Wastewater Rate Adjustment Using 25% Grant Alternative 1 (on-site disposal

	Loan 4		Loan 5		Loan 6		Loan 7		Loan 8	
	Project Area 1		Project Area 3		Project Area 3		Project Area 3		Project Area 3	
	Segment 1		Segment 5		Segment 3 & 4		Segment 2		Segment 1	
Construction Season (Yr)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opinion of Probable Construction Costs & Contingencies*	$1,742,000		$2,644,000		$1,983,000		$2,163,000		$1,609,000	
Engineering*	$207,000		$303,000		$241,000		$262,000		$204,000	
Administration*	$88,000		$133,000		$100,000		$110,000		$82,000	
Probable Project Costs*	**$2,037,000**		**$3,080,000**		**$2,324,000**		**$2,535,000**		**$1,895,000**	
Grant Participation - Percent	25%		25%		25%		25%		25%	
Grant Participation - Amount	$509,250		$770,000		$583,500		$633,750		$473,750	
Participation from Local Funds (Reserve Contribution)	$100,000		$150,000		$150,000		$100,000		$150,000	
Participation from Hook-up Fees @ $1,500 per	$36,000		$40,500		$87,000		$90,000		$24,000	
Participation from Septic Tank Replacement @ $2000 per	$24,000		$26,000		$58,000		$60,000		$16,000	
Loan Amount	$1,367,750		$2,091,500		$1,456,500		$1,651,250		$1,231,250	
Debt Service (3.25% and 30-yr term)	$72,055		$110,184		$76,676		$86,991		$64,864	
Reserve (10% of Debt Service)	$7,206		$11,018		$7,668		$8,699		$6,486	
Debt Service from Current Loan	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416
Debt Service from Loan 1	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958
Debt Service from Loan 2	$120,606	$120,606	$120,606	$120,606	$120,606	$120,606	$120,606	$120,606	$120,606	$120,606
Debt Service from Loan 3	$161,550	$161,550	$161,550	$161,550	$161,550	$161,550	$161,550	$161,550	$161,550	$161,550
Debt Service from Loan 4	$0	$79,261	$79,261	$79,261	$79,261	$79,261	$79,261	$79,261	$79,261	$79,261
Debt Service from Loan 5	$0	$0	$0	$121,202	$121,202	$121,202	$121,202	$121,202	$121,202	$121,202
Debt Service from Loan 6	$0	$0	$0	$0	$0	$84,346	$84,346	$84,346	$84,346	$84,346
Debt Service from Loan 7	$0	$0	$0	$0	$0	$0	$0	$96,690	$96,690	$96,690
Debt Service from Loan 8	$0	$0	$0	$0	$0	$0	$0	$0	$0	$71,351
Total Debt Service	$375,632	$454,793	$454,793	$575,995	$575,995	$660,341	$660,341	$756,031	$755,031	$827,381
Cost for O&M (Budget)**	$100,000	$114,000	$119,000	$134,000	$140,000	$155,000	$163,000	$179,000	$187,000	$204,000
Total Annual Expenses	**$475,000**	**$569,000**	**$574,000**	**$710,000**	**$716,000**	**$815,000**	**$823,000**	**$935,000**	**$943,000**	**$1,031,000**
Total Number of Residential & Commmercial Accounts	473	497	497	524	524	582	582	642	642	658
Number of Vacant Lots	27	76	76	76	76	76	76	76	76	114
Number of Rental Spaces owned by Commercial Accounts	238	304	304	304	304	304	304	304	304	304
Monthly Minimum Residential & Commercial	$75.00	$75.00	$90.00	$90.00	$95.00	$95.00	$105.00	$105.00	$110.00	$110.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$45.00	$45.00	$54.00	$54.00	$57.00	$57.00	$63.00	$63.00	$66.00	$66.00
Monthly Minimum fee per rental space owned by Commercial Account	$18.00	$18.00	$21.60	$21.60	$22.80	$22.80	$25.20	$25.20	$26.40	$26.40
Annual Income from Monthly Minimum Res. & Comm. Fee	$426,700	$447,300	$538,760	$565,920	$597,360	$663,480	$733,320	$808,920	$847,440	$868,560
Annual Income from Monthly Minimum Vacant Lot Fee	$14,580	$41,040	$49,248	$49,248	$51,984	$51,984	$57,456	$57,456	$80,192	$90,288
Annual Income from Monthly Minimum Rental Fee owned by Commercial Account	$50,976	$65,664	$78,797	$78,797	$83,174	$83,174	$91,930	$91,930	$96,307	$96,307
Annual Income from taxes, permits and interest	$19,303	$19,304	$19,305	$19,306	$19,307	$19,308	$19,309	$19,310	$19,311	$19,312
Status Quo Total Annual Income	$510,559	$573,308	$684,110	$713,271	$751,825	$817,946	$902,015	$977,616	$1,023,250	$1,074,467
Proposed Total Annual Income	**$511,000**	**$573,000**	**$684,000**	**$713,000**	**$752,000**	**$818,000**	**$902,000**	**$978,000**	**$1,023,000**	**$1,074,000**
DIFFERENCE (INCOME - EXPENSES)	$35,000	$4,000	$110,000	$3,000	$36,000	$2,000	$79,000	$43,000	$80,000	$43,000
Accumulated Cash on Hand at End of Year	$219,200	$223,200	$163,200	$166,200	$72,200	$74,200	$53,200	$96,200	$26,200	$69,200
Monthly Minimum Residential & Commercial	$75.00	$75.00	$90.00	$90.00	$95.00	$95.00	$105.00	$105.00	$110.00	$110.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$45.00	$45.00	$54.00	$54.00	$57.00	$57.00	$63.00	$63.00	$66.00	$66.00
Monthly Minimum fee per rental space owned by Commercial Account	$18.00	$18.00	$21.60	$21.60	$22.80	$22.80	$25.20	$25.20	$26.40	$26.40
Residential & Commercial Account Cost	**$75.00**	**$75.00**	**$90.00**	**$90.00**	**$95.00**	**$95.00**	**$105.00**	**$105.00**	**$110.00**	**$110.00**

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year
*** Phase I loan is for 20-year term

Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00

Wastewater Rate Adjustment Using 50% Grant Alternative 1 (on-site disposal systems retained)

		Loan 1			Loan 2		Loan 3	
		(Phase 1)			Project Area 2		Project Area 1	
	2006				Segment 1		Segment 2	
Construction Season (Yr)	Budget	2007	2008	2009	2010	2011	2012	2013
Opinion of Probable Construction Costs & Contingencies*					$2,544,000		$3,615,000	
Engineering*					$298,000		$400,000	
Administration*					$133,000		$182,000	
Probable Project Costs*		$1,666,000			$3,075,000		$4,197,000	
Grant Participation - Percent		18%			50%		50%	
Grant Participation - Amount		$300,000			$1,537,500		$2,098,500	
Participation from Local Funds (Reserve Contribution)		$0			$0		$150,000	
Participation from Hook-up Fees @ $1,500 per		$112,500			$135,000		$168,000	
Participation from Septic Tank Replacement @ $2000 per		$78,000			$90,000		$104,000	
Loan Amount		$1,066,500			$1,312,500		$1,698,500	
Debt Service (3.25% and 30-yr term)		$75,416	***		$89,145		$98,963	
Reserve (10% of Debt Service)		$7,542			$8,914		$9,895	
Debt Service from Current Loan	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416
Debt Service from Loan 1	$0	$0	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958
Debt Service from Loan 2	$0	$0	$0	$0	$0	$76,059	$76,059	$76,059
Debt Service from Loan 3	$0	$0	$0	$0	$0	$0	$0	$97,846
Debt Service from Loan 4	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 5	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 6	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 7	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service from Loan 8	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	$10,416	$10,416	$93,374	$93,374	$93,374	$169,433	$169,433	$267,281
Cost for O&M (Budget)**	$46,000	$48,000	$60,000	$63,000	$66,000	$79,000	$83,000	$96,000
Total Annual Expenses	$56,416	$58,416	$153,000	$156,000	$159,000	$248,000	$252,000	$363,000
Total Number of Residential & Commercial Accounts	204	204	279	279	279	369	369	473
Number of Vacant Lots	27	27	27	27	27	27	27	27
Number of Rental Spaces owned by Commercial Accounts	117	117	236	236	236	236	236	236
Monthly Minimum Residential & Commercial	$32.00	$32.00	$40.00	$40.00	$40.00	$50.00	$50.00	$55.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$19.20	$19.20	$24.00	$24.00	$24.00	$30.00	$30.00	$33.00
Monthly Minimum fee per rental space owned by Commercial Account	$7.67	$7.67	$9.60	$9.60	$9.60	$12.00	$12.00	$13.20
Annual Income from Monthly Minimum Res. & Comm. Fee	$78,336	$78,336	$133,920	$133,920	$133,920	$221,400	$221,400	$312,180
Annual Income from Monthly Minimum Vacant Lot Fee	$6,221	$8,221	$7,776	$7,776	$7,776	$9,720	$9,720	$10,692
Annual Income from Monthly Minimum Rental Fee owned by Commercial Account	$10,764	$10,769	$27,187	$27,187	$27,187	$33,984	$33,984	$37,382
Annual Income from taxes, permits and interest	$19,300	$19,300	$19,300	$19,300	$19,300	$19,300	$19,301	$19,302
Status Quo Total Annual Income	$114,621	$114,625	$188,183	$188,183	$188,183	$284,404	$284,405	$379,556
Proposed Total Annual Income	$115,000	$115,000	$188,000	$188,000	$188,000	$284,000	$284,000	$380,000
DIFFERENCE (INCOME - EXPENSES)	$58,584	$56,584	$35,000	$32,000	$29,000	$36,000	$32,000	$17,000
Accumulated Cash on Hand at End of Year	$108,584	$165,200	$200,200	$232,200	$261,200	$297,200	$179,200	$196,200
Monthly Minimum Residential & Commercial	$32.00	$32.00	$40.00	$40.00	$40.00	$50.00	$50.00	$55.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$19.20	$19.20	$24.00	$24.00	$24.00	$30.00	$30.00	$33.00
Monthly Minimum fee per rental space owned by Commercial Account	$7.68	$7.68	$9.60	$9.60	$9.60	$12.00	$12.00	$13.20
Residential & Commercial Account Cost	$32.00	$32.00	$40.00	$40.00	$40.00	$50.00	$50.00	$55.00

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year
*** Phase I loan is for 20-year term

Impact on Wastewater Rates Using 2006 Water Sales
Lake Poinsett Wastewater Treatment Facility
Lake Poinsett, SD
BAI No. 20627.01.00

Wastewater Rate Adjustment Using 50% Grant Alternative 1 (on-site disposal

Construction Season (YY)	Loan 4 Project Area 1 Segment 1 2014	2015	Loan 5 Project Area 3 Segment 6 2016	2017	Loan 6 Project Area 3 Segment 3 & 4 2018	2019	Loan 7 Project Area 3 Segment 2 2020	2021	Loan 8 Project Area 3 Segment 1 2022	2023
Opinion of Probable Construction Costs & Contingencies*	$1,742,000		$2,644,000		$1,993,000		$2,163,000		$1,809,000	
Engineering*	$207,000		$303,000		$241,000		$262,000		$204,000	
Administration*	$88,000		$133,000		$100,000		$110,000		$82,000	
Probable Project Costs*	**$2,037,000**		**$3,080,000**		**$2,334,000**		**$2,535,000**		**$1,895,000**	
Grant Participation - Percent	50%		50%		50%		50%		50%	
Grant Participation - Amount	$1,018,500		$1,540,000		$1,167,000		$1,267,500		$947,500	
Participation from Local Funds (Reserve Contribution)	$100,000		$150,000		$150,000		$100,000		$150,000	
Participation from Hook-up Fees @ $1,500 per	$38,000		$40,500		$87,000		$90,000		$24,000	
Participation from Septic Tank Replacement @ $2000 per	$24,000		$28,000		$58,000		$60,000		$16,000	
Loan Amount	$858,500		$1,321,500		$872,000		$1,017,500		$757,500	
Debt Service (3.25% and 30-yr term)	$45,227		$69,619		$45,936		$53,604		$39,906	
Reserve (10% of Debt Service)	$4,523		$6,962		$4,594		$5,360		$3,991	
Debt Service from Current Loan	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416	$10,416
Debt Service from Loan 1	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958	$82,958
Debt Service from Loan 2	$76,059	$76,059	$76,059	$76,059	$76,059	$76,059	$76,059	$76,059	$76,059	$76,059
Debt Service from Loan 3	$97,848	$97,848	$97,848	$97,848	$97,848	$97,848	$97,848	$97,848	$97,848	$97,848
Debt Service from Loan 4	$0	$49,750	$49,750	$49,750	$49,750	$49,750	$49,750	$49,750	$49,750	$49,750
Debt Service from Loan 5	$0	$0	$0	$76,581	$76,581	$76,581	$76,581	$76,581	$76,581	$76,581
Debt Service from Loan 6	$0	$0	$0	$0	$0	$50,532	$50,532	$50,532	$50,532	$50,532
Debt Service from Loan 7	$0	$0	$0	$0	$0	$0	$0	$58,964	$58,964	$58,964
Debt Service from Loan 8	$0	$0	$0	$0	$0	$0	$0	$0	$0	$43,897
Total Debt Service	$267,281	$317,031	$317,031	$393,612	$393,612	$444,144	$444,144	$503,108	$503,108	$547,005
Cost for O&M (Budget)**	$100,000	$114,000	$119,000	$134,000	$140,000	$166,000	$183,000	$179,000	$187,000	$204,000
Total Annual Expenses	**$367,000**	**$431,000**	**$436,000**	**$528,000**	**$534,000**	**$600,000**	**$627,000**	**$682,000**	**$690,000**	**$751,000**
Total Number of Residential & Commmercial Accounts	473	497	497	524	524	582	582	642	642	658
Number of Vacant Lots	27	76	76	76	76	76	76	76	76	114
Number of Rental Spaces owned by Commercial Accounts	236	304	304	304	304	304	304	304	304	304
Monthly Minimum Residential & Commercial	$55.00	$65.00	$65.00	$75.00	$75.00	$75.00	$75.00	$85.00	$85.00	$85.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$33.00	$39.00	$39.00	$45.00	$45.00	$45.00	$45.00	$51.00	$51.00	$51.00
Monthly Minimum fee per rental space owned by Commercial Account	$13.20	$15.60	$15.60	$18.00	$18.00	$18.00	$18.00	$20.40	$20.40	$20.40
Annual Income from Monthly Minimum Res. & Comm. Fee	$312,180	$387,660	$387,660	$471,600	$471,600	$523,800	$523,800	$654,840	$654,840	$671,160
Annual Income from Monthly Minimum Vacant Lot Fee	$10,692	$35,568	$35,568	$41,040	$41,040	$41,040	$41,040	$46,512	$46,512	$69,768
Annual Income from Monthly Minimum Rental Fee owned by Commercial Account	$37,382	$56,909	$56,909	$65,664	$65,664	$65,664	$65,664	$74,419	$74,419	$74,419
Annual Income from taxes, permits and interest	$19,303	$19,304	$19,305	$19,306	$19,307	$19,308	$19,309	$19,310	$19,311	$19,312
Status Quo Total Annual Income	$379,557	$499,441	$499,442	$597,610	$597,611	$649,812	$649,813	$795,081	$795,082	$834,659
Proposed Total Annual Income	**$380,000**	**$499,000**	**$498,000**	**$588,000**	**$598,000**	**$650,000**	**$650,000**	**$795,000**	**$795,000**	**$835,000**
DIFFERENCE (INCOME - EXPENSES)	$13,000	$68,000	$63,000	$70,000	$64,000	$50,000	$43,000	$113,000	$105,000	$84,000
Accumulated Cash on Hand at End of Year	$109,200	$177,200	$90,200	$160,200	$74,200	$124,200	$67,200	$180,200	$135,200	$219,200
Monthly Minimum Residential & Commercial	$55.00	$65.00	$65.00	$75.00	$75.00	$75.00	$75.00	$85.00	$85.00	$85.00
Monthly Minimum Vacant Lots (60% of Res.& Comm)	$33.00	$39.00	$39.00	$45.00	$45.00	$45.00	$45.00	$51.00	$51.00	$51.00
Monthly Minimum fee per rental space owned by Commercial Account	$13.20	$15.60	$15.60	$18.00	$18.00	$18.00	$18.00	$20.40	$20.40	$20.40
Residential & Commercial Account Cost	**$55.00**	**$65.00**	**$65.00**	**$75.00**	**$75.00**	**$75.00**	**$75.00**	**$85.00**	**$85.00**	**$85.00**

*Construction Costs adjusted using a 4% inflation rate per year
**Expenses adjusted using a 4% inflation rate per year
*** Phase I loan is for 20-year term

Appendix H

Regulatory Agency Letters

BANNER
Engineering | Architecture | Surveying

409 22nd Avenue South | PO Box 298, Brookings, South Dakota 57006
Tel (605) 692-6342 Fax (605) 692-5714

2307 West 57th Street, Suite 102, Sioux Falls, South Dakota 57108
Tel (605) 977-6342 Fax (605) 977-6344

730 South Street, Suite 201 | PO Box 2024 (57709-2024), Rapid City, South Dakota 57701-2024
Tel | Fax (605) 343-0700

119 Second Avenue SW, Suite 5, Pipestone, Minnesota 56164
Tel (507) 562-2957

424½ South Minnesota Avenue, Suite B, St. Peter, Minnesota 56082
Tel | Fax (507) 931-0930

www.bannerassociates.com

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: Town of Westport

Project Title:	Wastewater and Storm Sewer Improvements
Funding Requested:	$617,000
Total Project Cost:	$617,000
Project Description:	This project includes replacing the existing lift station with a duplex submersible lift station and installing 2,800 feet of PVC storm sewer line.
Alternatives Evaluated:	"No Action Alternative" is not recommended as it does not correct the deteriorating condition of the lift station or address the undersized storm sewer system. "Submersible Lift Station Alternative" includes replacing the existing lift station and installing a duplex submersible lift station, backup generator, alarms, and new air release valves. This alternative also includes utilizing the new pumps in the existing lift station and purchasing an additional pump to have on standby. "Storm Sewer System Alternative" includes installing 2,800 feet of storm sewer line to replace the existing undersized lines. The existing system contains 6- and 8-inch vitrified clay pipe that was once part of the sanitary sewer system and is undersized and deteriorating.
Implementation Schedule:	The town of Westport plans to advertise bids for this project in August of 2016 with a completion date of May 2017.
Service Population:	133
Current Domestic Rate:	$30.00 flat rate

Interest Rate: 3.25% Term: 30 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan the town of Westport would have to establish a surcharge of approximately $54.80. When added to current rate of $30.00 residents would be paying a flat rate of $84.80.

25% Funding Subsidy:	$154,250 subsidy with a loan of $462,750.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $462,750 the town of Westport would have to establish a surcharge of approximately $41.15 thereby paying a flat rate of $71.15.

50% Funding Subsidy:	$308,500 subsidy with a loan of $308,500.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $308,500 the town of Westport would have to establish a surcharge of approximately $27.40 thereby paying a flat rate of $57.40.

75% Funding Subsidy:	$462,750 subsidy with a loan of $154,250.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $154,250 the town of Westport would have to establish a surcharge of approximately $13.75 thereby paying a flat rate of $43.75.

ENGINEERING REVIEW COMPLETED BY: CLAIRE PESCHONG

FINANCIAL REVIEW COMPLETED BY: JON PESCHONG

RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

TOWN OF WESTPORT, SOUTH DAKOTA

WASTEWATER IMPROVEMENTS

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION

PREPARED BY:
NORTHEAST COUNCIL OF GOVERNMENTS
DECEMBER 2015

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: Town of Westport	Proposed Funding Package
Address: PO Box 18 Westport, SD 57481	Requested Funding $617,000 Local Cash _____
Subapplicant:	Other: _____ _____ Other: _____ _____
DUNS Number: 011414755	Other: _____ _____ TOTAL $617,000

Project Title: Westport Wastewater and Storm Sewer Improvement Project

Description:

The Town of Westport is proposing to replace the lift station and add additional storm sewer lines in town.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Jan Ellefson, Town President	Jan Ell	December 29, 2015
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: NECOG

Contact Person: Ted Dickey

Mailing Address: 416 Production St. N. Suite 1

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: (605) 626-2595 Fax: (605) 626-2975

Email address: ted@necog.org

Consulting Engineering Firm: Clark Engineering

Contact Person: John Desens

Mailing Address: 2301 8th Avenue NE Suite 125

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: (605) 225-3494 Fax: (605) 225-5433

Email address: jdesens@clark-eng.com

Legal Counsel's Firm: Ronayne and Cogley

Contact Person: Tom Cogley

Mailing Address: 24 5th Avenue SW

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: (605) 225-0100 Fax:

Email address: tom@ronaynecogley.com

Bond Counsel's Firm: Meierhenry Sargent

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Avenue

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 336-3075 Fax:

Email address: todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel						
D. Other						
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$46,000					$46,000
B. Project Inspection Fees	$36,000					$36,000
C. Other						
4. Construction & Improvements	$485,510					$485,510
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$567,510					$567,510
10. Contingencies	$49,490					$49,490
11. Total (Lines 9 and 10)	$617,000					$617,000
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CWSRF		$617,000	March 25, 2016
Other (Explain)			
Other (Explain)			
Total		$617,000	$617,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other DENR	$617,000	3.25%	30	$32,223	Wastewater Surcharge Revenue Bond
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 133 2010 133 2000 125

Top three employers within 30 miles	Number of Employees	Type of Business
Avera St. Lukes	1500	Hospital
3-M	653	Manufacturing
Molded Fiber Glass	600	Manufacturing

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2014					
Purpose	Replace pumps at lift station					
Security Pledged	Wastewater Revenue					
Amount	$21,761					
Maturity Date (mmm/yyyy)	Apr/2024					
Debt Holder	NRWA					
Debt Coverage Requirement	100%					
Avg. Annual Required Payment	$2,522					
Outstanding Balance	$18,571					

Comments:

The pumps that were just replaced will be utilized in the new lift station.

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$10,320	$12,408	$20,128	$20,000	$20,000	$20,000
Surcharge Fees	$5,881				$35,640	$35,640
Other (Explain)	$10,140		$7,382	$617,000		
Operating Expenses						
Personal Services	($706)	($675)	($480)	($500)		
Chemical, Material & Supplies	($15)	($3)				
Electric & Other Utilities						
Other (Explain)	($13,445)	($559)	($789)	($1,000)		
Operating Net Cash	$12,175	$11,171	$26,241	$635,500	$55,640	$55,640
Nonoperating Cash Flow						
Interest Revenue	$80					
Transfers In (Explain)						
Fixed Asset Purchases				($617,000)		
Transfers Out (Explain)		($2,408)				
Principal Debt Payments			($1,933)	($1,963)	($14,316)	($14,664)
Interest Debt Payments			($589)	($559)	($20,429)	($19,991)
Other (Explain)	($2,209)	($1,198)	($4,119)			
Nonoperating Net Cash	($2,129)	($3,606)	($6,641)	($619,522)	($34,745)	($34,655)
Increase (Decrease) Cash	$10,046	$7,565	$19,600	$15,978	$20,895	$20,985
Beginning Cash Balance	$51,342	$61,388	$68,953	$88,553	$104,531	$125,426
Ending Cash Balance	$61,388	$68,953	$88,553	$104,531	$125,426	$146,411
Restricted Balance	0	0	0	0	0	0
Unrestricted Balance	$61,388	$68,953	$88,553	$104,531	$125,426	$146,411

Additional Comments (Explanations)

2013 Other Revenue is the SCPG for the sewer study. The expenses for the study are under Other Expenses in 2013.
The 2014 Transfer out is listed as a correction on the year end report. Not as a transfer.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [x] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$30.00	$85.00	53	5,000
Business	$60.00	$115.00	1	5,000
Other:				
Other:				

Are fees based on usage or flat rate? Flat

When is proposed fee scheduled to take effect? August 2016

When did the current fee take effect? 1/15

What was the fee prior to the current rate? 25.00

Storm Sewer Projects Only: Does applicant have a separate storm water fee? No

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Residential Customer		3%
Residential Customer		3%

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. [x]
- A public hearing held discussing the project and the use of an SRF loan to finance the project. [x]
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. [x]
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. [x]
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. [ ]
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. [ ]

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	Town of Westport

Project Name:	Westport Lift Station and Storm Sewer Project

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: Jan Ellefson

Printed Name: Jan Ellefson

Title: Town President

Date: December 29, 2015

Project Engineer

Signature: John Desens

Printed Name: John Desens

License #: SD #9721

Date: 12/29/15

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	$261,100

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	$354,910
	TOTAL:	$616,010

Jan Ellefson, Town President

Name & Title of Authorized Representative

Jan Ellefson

Signature of Authorized Representative

12/29/2015

Date

Certification of Nonpoint Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
VII A	NPS pollution - agricultural activities. Plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. Example BMPs include conservation tillage, nutrient management, and irrigation water management.	_____
VII B	NPS pollution - animal production. Confined animal facilities and grazing. Example BMPs include animal waste storage, animal waste nutrient management, composting, and planned grazing.	_____
VII C	NPS pollution - forestry. Removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for the planting of trees. Example BMPs include pre-harvest planting, streamside buffers, road management, and revegetation of disturbed areas.	_____
VII D	NPS pollution - new or existing development in urban or rural setting. Erosion, sedimentation, and discharge of pollutants (e.g. inadequately treated wastewater, oil grease, road salts, and toxic chemicals) into water resources from construction sites, roads, bridges, parking lots, and buildings. Example BMPs include wet ponds, construction site erosion and sedimentation controls, sand filters, and detention basin retrofit. This category includes only runoff projects in communities without Phase I or Phase II storm water permits.	_____
VII E	NPS pollution - ground water protection. Wellhead and recharge protection areas. Activities attributed to specific causes are included in a later, more specific category.	_____
VII F	NPS pollution - boating and marinas. Poorly flushed waterways, boat maintenance activities, discharge of sewage from boats, and physical alteration of shoreline, wetlands, and aquatic habitat during operation or construction of a marina. Example BMPs include pump out systems and oil containment booms.	_____

Category	Definition	Loan Amount
VII G	NPS pollution - mining and quarrying activities. Example BMPs detention berms and seeding or revegetation.	_____
VII H	NPS pollution - abandoned, idle, and under used industrial sites. All pollution control activities at these sites regardless of activity. Example BMPs include ground water monitoring wells, in situ treatment of contaminated soils and ground water, capping to prevent storm water infiltration, and storage tank activities at brownfields.	_____
VII I	NPS pollution - tanks designed to hold chemicals, gasoline, or petroleum products. Tanks may be located either above or below ground. Example BMPs include spill containment, in situ treatment of contaminated soils and ground water, and upgrade, rehabilitation, or removal of petroleum/chemical storage tanks.	_____
VII J	NPS pollution - sanitary landfills. Example BMPs include leachate collection or on-site treatment, gas collections and control, and capping and closure.	_____
VII K	NPS pollution - channel modification, dams, streambank and shoreline erosion, and wetland or riparian area protection or restoration. Example BMPs include conservation easements, swales or filter strips, shore erosion control, wetland development and restoration, and bank and channel stabilization.	_____
VII L	NPS pollution - rehabilitation or replacement of individual or community sewerage disposal system. Construction of collector sewers to transport wastes to a cluster septic tank or other decentralized facilities. Collection sewers and expansion of existing or construction of new centralized treatment facilities that replace individual or community sewerage disposal system are included on Point Source Category table.	
	TOTAL:	_____

Jan Ellefson, Town President

Name & Title of Authorized Representative

Signature of Authorized Representative

12/29/2015

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Jan Ellefson, Town President

Name & Title of Authorized Representative

Signature of Authorized Representative

12/29/2015

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION

RESOLUTION NO. _____

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Westport (the "City") has determined it is necessary to proceed with improvements to its wastewater and storm water System, including but not limited to replacing the lift station and constructing additional storm sewer lines (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $650,000 to the South Dakota Board of Water and Natural Resources for the Project..

2. The Town President is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Town President is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at _____, South Dakota, this _____ day of _____ 201_.

APPROVED:

Jan Kelly
Mayor
City of Westport

(Seal)

Attest: Dave Dietel
City Finance Officer

FACILITIES PLAN

OPINION OF PROBABLE COST

Project: Westport Wastewater Engineering Study
Date: 12/22/15
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for proposed storm sewer addition to the city of Westport.

NO.	ITEM	QUANTITY		UNIT PRICE		TOTAL
1	MOBILIZATION	1	LS	$ 25,000.00	$	25,000.00
2	TOPSOIL PLACEMENT	70	CY	$ 5.00	$	350.00
3	SEEDING AND RESTORATION	0.1	AC	$ 1,000.00	$	100.00
4	F&I 12" RCP STORM SEWER	675	LF	$ 50.00	$	33,750.00
5	F&I 15" RCP STORM SEWER	846	LF	$ 60.00	$	50,760.00
6	F&I 18" RCP STORM SEWER	730	LF	$ 65.00	$	47,450.00
7	F&I 24" RCP STORM SEWER	540	LF	$ 80.00	$	43,200.00
8	F&I 24" RCP FLARED END w/ RODENT GUARD	1	LF	$ 2,500.00	$	2,500.00
9	F&I 24" KNIFE VALVE	1	LF	$ 2,500.00	$	2,500.00
10	F&I DROP INLET	6	EA	$ 3,500.00	$	21,000.00
11	F&I STORM MANHOLE	6	EA	$ 4,000.00	$	24,000.00
12	F&I 8" BASE COURSE (STREET RESTORATION)	850	TN	$ 20.00	$	17,000.00
13	F&I 3" ASPHALT SURFACING	65	TN	$ 120.00	$	7,800.00

10% CONSTRUCTION CONTINGENCIES	$	27,500.00
SUBTOTAL: PROJECT CONSTRUCTION	$	302,910.00
SURVEY & DESIGN ENGINEERING	$	30,000.00
CONSTRUCTION ENGINEERING	$	22,000.00
TOTAL OPINION OF CONSTRUCTION COSTS	**$**	**354,910.00**

OPINION OF PROBABLE COST

Project: Westport Wastewater Engineering Study
Date: 12/22/15
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for replacing the existing lift station with a duplex submersible liftstation. This estimate also calls for the installation of a new standby generator as well as a new air-release valve.

NO.	ITEM	QUANTITY		UNIT PRICE		TOTAL
1	MOBILIZATION	1	LS	$ 17,600.00	$	17,600.00
2	REMOVE EXISTING STRUCTURE	1	LS	$ 15,000.00	$	15,000.00
3	F&I DUPLEX SUBMERSIBLE LIFTSTATION	1	EA	$ 125,000.00	$	125,000.00
4	FURNISH SPARE PUMP FOR LIFTSTATION	1	EA	$ 15,000.00	$	15,000.00
5	REMOVE/REPLACE AIR-RELEASE VALVE	1	EA	$ 2,500.00	$	2,500.00
6	ALTERNATE STANDBY GENERATOR - BID ITEM	1	EA	$ 35,000.00	$	35,000.00

10% CONSTRUCTION CONTINGENCIES	$ 21,000.00
SUBTOTAL: PROJECT CONSTRUCTION	$231,100.00
SURVEY & DESIGN ENGINEERING	$16,000.00
CONSTRUCTION ENGINEERING	$14,000.00
TOTAL OPINION OF PROBABLE COSTS	**$261,100.00**

2016 BUDGET

MUNICIPALITY OF **WESTPORT, SD**
Budget 2016

Disbursements:	**2016**
411-419 General Government (414)	10,000
422 Fire	975
423-429 Other Public Safety (429)	1,000
431 Highways and Streets (includes snow removal & lights)	6,700
432 Sanitation (includes garbage & rubble sites)	500
433-439 Other Public Works (435)	2,300
491 Miscellaneous	5,000
420 Other Expenses	7,500
426 Supplies and Materials	3,000
Total Disbursements	**$ 36,975**
Less Other Revenue	($24,000)
Mill Levy Taxable Amount	$ 12,975

Amortization Table

A simple amortization table covering 24 payment periods of a loan.

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Initial Data

LOAN DATA

Loan amount:	**$21,761.00**
Annual interest rate:	3.00%
Term in years:	10
Payments per year:	12
First payment due:	5/1/2014

TABLE DATA

Table starts at date:	
or at payment number:	1

PERIODIC PAYMENT 48.49057766

Entered payment:	
Calculated payment:	**$210.13**

The table uses the calculated periodic payment amount unless you enter a value for "Entered payment".

CALCULATIONS

Use payment of:	$210.13	Beginning balance at payment 1:	21,761.00
1st payment in table:	1	Cumulative interest prior to payment 1:	0.00

Table

No.	Payment Date	Beginning Balance	Interest	Principal	Ending Balance	Cumulative Interest

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CALCULATIONS

Use payment of:	$210.13	Beginning balance at payment 1:	21,761.00
1st payment in table:	1	Cumulative interest prior to payment 1:	0.00

Table

No.	Payment Date	Beginning Balance	Interest	Principal	Ending Balance	Cumulative Interest
1	5/1/2014	21,761.00	54.40	155.72	21,605.28	54.40
2	6/1/2014	21,605.28	54.01	156.11	21,449.16	108.42
3	7/1/2014	21,449.16	53.62	156.50	21,292.66	162.04
4	8/1/2014	21,292.66	53.23	156.89	21,135.77	215.27
5	9/1/2014	21,135.77	52.84	157.29	20,978.48	268.11
6	10/1/2014	20,978.48	52.45	157.68	20,820.80	320.56
7	11/1/2014	20,820.80	52.05	158.07	20,662.73	372.61
8	12/1/2014	20,662.73	51.66	158.47	20,504.26	424.26
9	1/1/2015	20,504.26	51.26	158.87	20,345.39	475.53
10	2/1/2015	20,345.39	50.86	159.26	20,186.13	526.39
11	3/1/2015	20,186.13	50.47	159.66	20,026.47	576.85
12	4/1/2015	20,026.47	50.07	160.06	19,866.41	626.92
13	5/1/2015	19,866.41	49.67	160.46	19,705.95	676.59
14	6/1/2015	19,705.95	49.26	160.86	19,545.09	725.85
15	7/1/2015	19,545.09	48.86	161.26	19,383.83	774.71
16	8/1/2015	19,383.83	48.46	161.67	19,222.16	823.17
17	9/1/2015	19,222.16	48.06	162.07	19,060.09	871.23
18	10/1/2015	19,060.09	47.65	162.48	18,897.61	918.88
19	11/1/2015	18,897.61	47.24	162.88	18,734.73	966.12
20	12/1/2015	18,734.73	46.84	163.29	18,571.44	1,012.96
21	1/1/2016	18,571.44	46.43	163.70	18,407.75	1,059.39
22	2/1/2016	18,407.75	46.02	164.11	18,243.64	1,105.41
23	3/1/2016	18,243.64	45.61	164.52	18,079.12	1,151.02
24	4/1/2016	18,079.12	45.20	164.93	17,914.19	1,196.21
25	5/1/2016	17,914.19	44.79	165.34	17,748.85	1,241.00
26	6/1/2016	17,748.85	44.37	165.75	17,583.10	1,285.37
27	7/1/2016	17,583.10	43.96	166.17	17,416.93	1,329.33
28	8/1/2016	17,416.93	43.54	166.58	17,250.35	1,372.87
29	9/1/2016	17,250.35	43.13	167.00	17,083.35	1,416.00
30	10/1/2016	17,083.35	42.71	167.42	16,915.93	1,458.71
31	11/1/2016	16,915.93	42.29	167.84	16,748.10	1,501.00
32	12/1/2016	16,748.10	41.87	168.26	16,579.84	1,542.87
33	1/1/2017	16,579.84	41.45	168.68	16,411.16	1,584.32
34	2/1/2017	16,411.16	41.03	169.10	16,242.07	1,625.34
35	3/1/2017	16,242.07	40.61	169.52	16,072.55	1,665.95
36	4/1/2017	16,072.55	40.18	169.94	15,902.60	1,706.13
37	5/1/2017	15,902.60	39.76	170.37	15,732.23	1,745.89
38	6/1/2017	15,732.23	39.33	170.80	15,561.44	1,785.22

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Initial Data

LOAN DATA

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First payment due:	5/1/2014

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PERIODIC PAYMENT 48.49057766

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CALCULATIONS

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1st payment in table:	1	Cumulative interest prior to payment 1:	0.00

Table

No.	Payment Date	Beginning Balance	Interest	Principal	Ending Balance	Cumulative Interest
39	7/1/2017	15,561.44	38.90	171.22	15,390.21	1,824.12
40	8/1/2017	15,390.21	38.48	171.65	15,218.56	1,862.60
41	9/1/2017	15,218.56	38.05	172.08	15,046.48	1,900.64
42	10/1/2017	15,046.48	37.62	172.51	14,873.97	1,938.26
43	11/1/2017	14,873.97	37.18	172.94	14,701.03	1,975.44
44	12/1/2017	14,701.03	36.75	173.37	14,527.66	2,012.20
45	1/1/2018	14,527.66	36.32	173.81	14,353.85	2,048.52
46	2/1/2018	14,353.85	35.88	174.24	14,179.61	2,084.40
47	3/1/2018	14,179.61	35.45	174.68	14,004.94	2,119.85
48	4/1/2018	14,004.94	35.01	175.11	13,829.82	2,154.86
49	5/1/2018	13,829.82	34.57	175.55	13,654.27	2,189.44
50	6/1/2018	13,654.27	34.14	175.99	13,478.28	2,223.57
51	7/1/2018	13,478.28	33.70	176.43	13,301.85	2,257.27
52	8/1/2018	13,301.85	33.25	176.87	13,124.98	2,290.52
53	9/1/2018	13,124.98	32.81	177.31	12,947.67	2,323.34
54	10/1/2018	12,947.67	32.37	177.76	12,769.91	2,355.70
55	11/1/2018	12,769.91	31.92	178.20	12,591.71	2,387.63
56	12/1/2018	12,591.71	31.48	178.65	12,413.06	2,419.11
57	1/1/2019	12,413.06	31.03	179.09	12,233.97	2,450.14
58	2/1/2019	12,233.97	30.58	179.54	12,054.43	2,480.73
59	3/1/2019	12,054.43	30.14	179.99	11,874.44	2,510.86
60	4/1/2019	11,874.44	29.69	180.44	11,694.00	2,540.55
61	5/1/2019	11,694.00	29.23	180.89	11,513.11	2,569.78
62	6/1/2019	11,513.11	28.78	181.34	11,331.76	2,598.57
63	7/1/2019	11,331.76	28.33	181.80	11,149.97	2,626.90
64	8/1/2019	11,149.97	27.87	182.25	10,967.72	2,654.77
65	9/1/2019	10,967.72	27.42	182.71	10,785.01	2,682.19
66	10/1/2019	10,785.01	26.96	183.16	10,601.85	2,709.15
67	11/1/2019	10,601.85	26.50	183.62	10,418.23	2,735.66
68	12/1/2019	10,418.23	26.05	184.08	10,234.15	2,761.70
69	1/1/2020	10,234.15	25.59	184.54	10,049.61	2,787.29
70	2/1/2020	10,049.61	25.12	185.00	9,864.60	2,812.41
71	3/1/2020	9,864.60	24.66	185.46	9,679.14	2,837.07
72	4/1/2020	9,679.14	24.20	185.93	9,493.21	2,861.27
73	5/1/2020	9,493.21	23.73	186.39	9,306.82	2,885.00
74	6/1/2020	9,306.82	23.27	186.86	9,119.96	2,908.27
75	7/1/2020	9,119.96	22.80	187.33	8,932.63	2,931.07
76	8/1/2020	8,932.63	22.33	187.79	8,744.84	2,953.40

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Table

No.	Payment Date	Beginning Balance	Interest	Principal	Ending Balance	Cumulative Interest
77	9/1/2020	8,744.84	21.86	188.26	8,556.58	2,975.26
78	10/1/2020	8,556.58	21.39	188.73	8,367.84	2,996.66
79	11/1/2020	8,367.84	20.92	189.21	8,178.63	3,017.58
80	12/1/2020	8,178.63	20.45	189.68	7,988.96	3,038.02
81	1/1/2021	7,988.96	19.97	190.15	7,798.80	3,057.99
82	2/1/2021	7,798.80	19.50	190.63	7,608.17	3,077.49
83	3/1/2021	7,608.17	19.02	191.11	7,417.07	3,096.51
84	4/1/2021	7,417.07	18.54	191.58	7,225.48	3,115.06
85	5/1/2021	7,225.48	18.06	192.06	7,033.42	3,133.12
86	6/1/2021	7,033.42	17.58	192.54	6,840.88	3,150.70
87	7/1/2021	6,840.88	17.10	193.02	6,647.86	3,167.80
88	8/1/2021	6,647.86	16.62	193.51	6,454.35	3,184.42
89	9/1/2021	6,454.35	16.14	193.99	6,260.36	3,200.56
90	10/1/2021	6,260.36	15.65	194.47	6,065.89	3,216.21
91	11/1/2021	6,065.89	15.16	194.96	5,870.92	3,231.38
92	12/1/2021	5,870.92	14.68	195.45	5,675.48	3,246.05
93	1/1/2022	5,675.48	14.19	195.94	5,479.54	3,260.24
94	2/1/2022	5,479.54	13.70	196.43	5,283.11	3,273.94
95	3/1/2022	5,283.11	13.21	196.92	5,086.19	3,287.15
96	4/1/2022	5,086.19	12.72	197.41	4,888.78	3,299.86
97	5/1/2022	4,888.78	12.22	197.90	4,690.88	3,312.09
98	6/1/2022	4,690.88	11.73	198.40	4,492.48	3,323.81
99	7/1/2022	4,492.48	11.23	198.89	4,293.59	3,335.04
100	8/1/2022	4,293.59	10.73	199.39	4,094.19	3,345.78
101	9/1/2022	4,094.19	10.24	199.89	3,894.30	3,356.01
102	10/1/2022	3,894.30	9.74	200.39	3,693.91	3,365.75
103	11/1/2022	3,693.91	9.23	200.89	3,493.02	3,374.98
104	12/1/2022	3,493.02	8.73	201.39	3,291.63	3,383.72
105	1/1/2023	3,291.63	8.23	201.90	3,089.73	3,391.95
106	2/1/2023	3,089.73	7.72	202.40	2,887.33	3,399.67
107	3/1/2023	2,887.33	7.22	202.91	2,684.42	3,406.89
108	4/1/2023	2,684.42	6.71	203.41	2,481.01	3,413.60
109	5/1/2023	2,481.01	6.20	203.92	2,277.09	3,419.80
110	6/1/2023	2,277.09	5.69	204.43	2,072.65	3,425.49
111	7/1/2023	2,072.65	5.18	204.94	1,867.71	3,430.68
112	8/1/2023	1,867.71	4.67	205.46	1,662.25	3,435.35
113	9/1/2023	1,662.25	4.16	205.97	1,456.28	3,439.50
114	10/1/2023	1,456.28	3.64	206.49	1,249.80	3,443.14

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Table

No.	Payment Date	Beginning Balance	Interest	Principal	Ending Balance	Cumulative Interest
115	11/1/2023	1,249.80	3.12	207.00	1,042.80	3,446.27
116	12/1/2023	1,042.80	2.61	207.52	835.28	3,448.87
117	1/1/2024	835.28	2.09	208.04	627.24	3,450.96
118	2/1/2024	627.24	1.57	208.56	418.68	3,452.53
119	3/1/2024	418.68	1.05	209.08	209.60	3,453.58
120	4/1/2024	209.60	0.52	209.60	0.00	3,454.10

PRIOR YEARS AUDITS

Exhibit I

MUNICIPALITY OF _Westport_____
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
December 31, 2012_

	General Fund			Enterprise Funds: Water Fund	Enterprise Funds: Sewer Fund	Enterprise Funds: Liquor Fund			Total
Cash Assets:									
Cash in Checking Accounts	36,465.48			18,086.66	33,634.97				88,187.11
Change and Petty Cash									0.00
Passbook Savings									0.00
Savings Certificates	36,092.86				17,707.45				53,800.31
									0.00
									0.00
									0.00
									0.00
101 FUND CASH BALANCES (Note 1)	72,558.34			18,086.66	51,342.42	0.00			141,987.42

Municipal funds are deposited or invested with the following depositories:

Home Federal, Aberdeen,SD (Checking-General)	36,465.48
Home Federal, Aberdeen,SD (Checking-Water)	18,086.66
Home Federal, Aberdeen,SD (Checking-Sewer)	33,634.97
Home Federal, Aberdeen,SD (CDs General)	36,092.86
Home Federal, Aberdeen,SD (CD's- Sewer)	17,707.45
	141,987.42

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF WESTPORT
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2012

				Enterprise Funds					
	General Fund			Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	3,828.00								3,828.00
313 Sales Tax									0.00
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	6,437.00								6,437.00
320 Licenses and Permits	1,768.00								1,768.00
331 Federal Grants									0.00
335.1 Bank Franchise Tax	92.00								92.00
335.2 Motor Vehicle Commercial									0.00
Prorate	116.00								116.00
335.3 Liquor Tax Reversion									0.00
335.4 Motor Vehicle Licenses (5%)	1,288.00								1,288.00
335.6 Fire Insurance Premium									0.00
Reversion									0.00
335.7 Liquor License Reversion									0.00
335.8 Local Government Highway	9,659.00								9,659.00
and Bridge Fund									0.00
338.1 County Road Tax (25%)	243.00								243.00
338.2 County Highway and Bridge									0.00
Reserve Tax (25%)									0.00
338.3 County Wheel Tax	227.00								227.00
331-339 Other Intergovernmental									0.00
Revenue (339)									0.00
341-349 Charges for Goods and									0.00
Services (341)									0.00
351-359 Fines and Forfeits (351)									0.00
361 Investment Earnings	359.00				160.00				519.00
362 Rentals	275.00								275.00
363-369 Other Revenues (369)	10,024.00				10,317.00				20,341.00

MUNICIPALITY OF Westport
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2012
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue				17,177.00	7,399.00				24,576.00
Surcharge as Security for Debt									0.00
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	34,316.00			17,177.00	17,876.00		0.00	0.00	69,369.00
Disbursements (Function):									
411-419 General Government (414)	3,974.00								3,974.00
421 Police									0.00
422 Fire	975.00								975.00
423-429 Other Public Safety (429)									0.00
431 Highways and Streets (includes snow removal & street lights)	3,783.00								3,783.00
432 Sanitation (includes garbage & rubble sites)	143.00								143.00
437 Cemeteries	242.00								242.00
433-439 Other Public Works (435)	577.00								577.00
441-449 Health and Welfare (441)									0.00
451-459 Culture-Recreation (451)									0.00
461-469 Conservation and Development (465)	17,030.00								17,030.00
470 Debt Service									0.00
480 Intergovernmental Expenditures									0.00
490-492 Miscellaneous (492)									0.00

MUNICIPALITY OF Westport
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2012
(continued)

				Enterprise Funds					
	General Fund			Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services									0.00
420 Other Expenses	4279.00			5404.00	11773.00				21,456.00
426 Supplies and Materials	854.00			13686.00	24.00				14,564.00
Total Disbursements	31857.00			19090.00	11797.00	0.00	0.00	0.00	62744.00
39101 Transfers In									0.00
51100 Transfers Out	( )			( )	( )	( )	( )	( )	0.00
391.2 Money Received From Borrowing									0.00
391.07 Capital Contributions (Grants)									0.00
									0.00
									0.00
Subtotal of Receipts, Disbursements and Transfers	2459.00			(1913.00)	6079.00	0.00	0.00	0.00	6625.00
Fund Cash Balance, January 1, 2012	70101.00			19999.00	45263.00				135,364.00
Adjustments:									
									0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2012	70101.00			19999.00	45263.00	0.00	0.00	0.00	135364.00
FUND CASH BALANCE, DECEMBER 31, 2012_	72560.00			18086.00	51342.00	0.00	0.00	0.00	141,988.00

Exhibit I

MUNICIPALITY OF __Westport_____
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
December 31, 2013_

	General Fund	Fund	Fund	Enterprise Funds: Water Fund	Enterprise Funds: Sewer Fund	Fund	Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	71,715.12			21,007.83	43,601.32				136,324.27
Change and Petty Cash									0.00
Passbook Savings									0.00
Savings Certificates	8,978.13				17,787.13				26,765.26
									0.00
									0.00
									0.00
									0.00
101 FUND CASH BALANCES (Note 1)	80,693.25	0.00	0.00	21,007.83	61,388.45	0.00	0.00	0.00	163,089.53

Municipal funds are deposited or invested with the following depositories:

Home Federal, Aberdeen, SD (Checking-General)	71,715.00
Home Federal, Aberdeen, SD (Checking-Water)	21,008.00
Home Federal, Aberdeen, SD (Checking-Sewer)	43,601.00
Home Federal, Aberdeen, SD (CD-Sewer)	17,787.00
Home Federal, Aberdeen, SD (CD-General)	8,978.00
	163,089.00

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF __Westport_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013__

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	10,795.00								10,795.00
313 Sales Tax									0.00
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	881.00								881.00
320 Licenses and Permits	25.00								25.00
331 State Grants				7,860.00	10,140.00				18,000.00
335.1 Bank Franchise Tax	104.00								104.00
335.2 Motor Vehicle Commercial									0.00
Prorate	308.00								308.00
335.3 Liquor Tax Reversion	806.00								806.00
335.4 Motor Vehicle Licenses (5%)	1,673.00								1,673.00
335.6 Fire Insurance Premium									0.00
Reversion									0.00
335.7 Liquor License Reversion									0.00
335.8 Local Government Highway									0.00
and Bridge Fund									0.00
338.1 County Road Tax (25%)	34.00								34.00
338.2 County Highway and Bridge									0.00
Reserve Tax (25%)	9,788.00								9,788.00
338.3 County Wheel Tax	98.00								98.00
331-339 Other Intergovernmental									0.00
Revenue (339)									0.00
341-349 Charges for Goods and									0.00
Services (341)									0.00
351-359 Fines and Forfeits (351)									0.00
361 Investment Earnings	515.00				80.00				595.00
362 Rentals	325.00								325.00
363-369 Other Revenues (369)	1,672.00				5,881.00				7,553.00

MUNICIPALITY OF _____Westport_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013__
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue				23,826.00	10,320.00				34,146.00
Surcharge as Security for Debt									0.00
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	27,024.00	0.00	0.00	31,686.00	26,421.00	0.00	0.00	0.00	85,131.00
Disbursements (Function):									
411-419 General Government (414)	5,265.00								5,265.00
421 Police									0.00
422 Fire	975.00								975.00
423-429 Other Public Safety (429)									0.00
431 Highways and Streets (includes snow removal & street lights)	3,885.00								3,885.00
432 Sanitation (includes garbage & rubble sites)	183.00				2,209.00				2,392.00
437 Cemeteries	91.00								91.00
433-439 Other Public Works (435)	391.00			5,279.00					5,670.00
441-449 Health and Welfare (441)									0.00
451-459 Culture-Recreation (451)									0.00
461-469 Conservation and Development (465)									0.00
470 Debt Service									0.00
480 Intergovernmental Expenditures									0.00
490-492 Miscellaneous (492)	123.00								123.00

MUNICIPALITY OF _____Westport_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013__
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services	3851.00			1119.00	706.00				5,676.00
420 Other Expenses	3233.00			10392.00	13445.00				27,070.00
426 Supplies and Materials	894.00			11975.00	15.00				12,884.00
Total Disbursements	18891.00	0.00	0.00	28765.00	16375.00	0.00	0.00	0.00	64031.00
39101 Transfers In									0.00
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	0.00
391.2 Money Received From Borrowing									0.00
391.07 Capital Contributions (Grants)									0.00
									0.00
									0.00
Subtotal of Receipts, Disbursements and Transfers	8133.00	0.00	0.00	2921.00	10046.00	0.00	0.00	0.00	21100.00
Fund Cash Balance, January 1, 2013__	72560.00			18086.00	51342.00				141,988.00
Adjustments:									
									0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2013_	72560.00	0.00	0.00	18086.00	51342.00	0.00	0.00	0.00	141988.00
FUND CASH BALANCE, DECEMBER 31, 2013_	80693.00	0.00	0.00	21007.00	61388.00	0.00	0.00	0.00	163,088.00

Exhibit I

MUNICIPALITY OF _WESTPORT_____
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
December 31, 2014__

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	75,629.10			19,045.07	59,854.07				154,528.24
Change and Petty Cash									0.00
Passbook Savings									0.00
Savings Certificates					9,099.33				9,099.33
									0.00
									0.00
									0.00
									0.00
101 FUND CASH BALANCES (Note 1)	75,629.10	0.00	0.00	19,045.07	68,953.40	0.00	0.00	0.00	163,627.57

Municipal funds are deposited or invested with the following depositories:

Home Federal, Aberdeen SD (Checking - General)	75,629.10
Home Federal, Aberdeen SD (Checking - Water)	19,045.00
Home Federal, Aberdeen SD (Checking - Sewer)	59,854.07
Home Federal, Aberdeen SD (CD - Sewer)	9,099.00
	163,627.17

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF _WESTPORT_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014__

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	10,106.00								10,106.00
313 Sales Tax									0.00
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	528.00								528.00
320 Licenses and Permits	1,815.00								1,815.00
331 Federal Grants									0.00
335.1 Bank Franchise Tax	120.00								120.00
335.2 Motor Vehicle Commercial									0.00
Prorate	329.00								329.00
335.3 Liquor Tax Reversion	865.00								865.00
335.4 Motor Vehicle Licenses (5%)	1,671.00								1,671.00
335.6 Fire Insurance Premium									0.00
Reversion									0.00
335.8 Local Government Highway									0.00
and Bridge Fund	7,220.00								7,220.00
338.1 County Road Tax (25%)									0.00
338.2 County Highway and Bridge									0.00
Reserve Tax (25%)	3,912.00								3,912.00
338.3 County Wheel Tax	282.00								282.00
331-339 Other Intergovernmental									0.00
Revenue (339)	11.00								11.00
341-349 Charges for Goods and									0.00
Services (341)									0.00
351-359 Fines and Forfeits (351)									0.00
361 Investment Earnings	171.00								171.00
362 Rentals	425.00								425.00
363-369 Other Revenues (369)	31,448.00								31,448.00

MUNICIPALITY OF __WESTPORT_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014__
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue				23,927.00	12,408.00				36,335.00
Surcharge as Security for Debt									0.00
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	58,903.00	0.00	0.00	23,927.00	12,408.00	0.00	0.00	0.00	95,238.00
Disbursements (Function):									
411-419 General Government (414)	7,363.00								7,363.00
421 Police									0.00
422 Fire									0.00
423-429 Other Public Safety (429)	975.00								975.00
431 Highways and Streets (includes snow removal & street lights)	2,133.00								2,133.00
432 Sanitation (includes garbage & rubble sites)	40,347.00								40,347.00
437 Cemeteries									0.00
433-439 Other Public Works (435)	1,278.00			4,177.00	1,198.00				6,653.00
441-449 Health and Welfare (441)									0.00
451-459 Culture-Recreation (451)									0.00
461-469 Conservation and Development (465)									0.00
470 Debt Service									0.00
480 Intergovernmental Expenditures									0.00
490-492 Miscellaneous (492)	2,394.00								2,394.00

MUNICIPALITY OF _WESTPORT_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014__
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services	4083.00			960.00	675.00				5,718.00
420 Other Expenses	6066.00			837.00	559.00				7,462.00
426 Supplies and Materials	1736.00			19915.00	3.00				21,654.00
Total Disbursements	66375.00	0.00	0.00	25889.00	2435.00	0.00	0.00	0.00	94699.00
391.01 Transfers In									0.00
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	0.00
391.03 Sale of Municipal Property									0.00
391.04 Compensation for Loss or Damage to Capital Assets									0.00
391.2 Money Received From Borrowing									0.00
391.07 Capital Contributions (Grants)									0.00
									0.00
									0.00
Subtotal of Receipts, Disbursements and Transfers	(7472.00)	0.00	0.00	(1962.00)	9973.00	0.00	0.00	0.00	539.00
Fund Cash Balance, January 1, 2014__	80693.00			21007.00	61388.00				163,088.00
Adjustments:									
Corrections	2408.00				(2408.00)				0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2014__	83101.00	0.00	0.00	21007.00	58980.00	0.00	0.00	0.00	163088.00
FUND CASH BALANCE, DECEMBER 31, 2014__	75629.00	0.00	0.00	19045.00	68953.00	0.00	0.00	0.00	163,627.00

MUNICIPALITY OF _WESTPORT_____
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014__

		Enterprise Funds		
	General Fund	Water Fund	Sewer Fund	Total
Receipts (Source):				
311 Property Taxes	10,106.00			10,106.00
311-319 Other Taxes (319)	528.00			528.00
320 Licenses and Permits	1,815.00			1,815.00
335.1 Bank Franchise Tax	120.00			120.00
335.2 Motor Vehicle Commercial				0.00
Prorate	329.00			329.00
335.3 Liquor Tax Reversion	865.00			865.00
335.4 Motor Vehicle Licenses (5%)	1,671.00			1,671.00
and Bridge Fund	7,220.00			7,220.00
Reserve Tax (25%)	3,912.00			3,912.00
338.3 County Wheel Tax	282.00			282.00
331-339 Other Intergovernmental				0.00
Revenue (339)	11.00			11.00
361 Investment Earnings	171.00			171.00
362 Rentals	425.00			425.00
363-369 Other Revenues (369)	31,448.00			31,448.00

		Enterprise Funds		
	General Fund	Water Fund	Sewer Fund	Total
ENTERPRISE FUNDS				
380 Enterprise Operating Revenue		23,927.00	12,408.00	36,335.00
Total Receipts	58,903.00	23,927.00	12,408.00	95,238.00
Disbursements (Function):				
411-419 General Government (414)	7,363.00			7,363.00
423-429 Other Public Safety (429)	975.00			975.00
431 Highways and Streets (includes				
snow removal & street lights)	2,133.00			2,133.00
432 Sanitation (includes garbage				
& rubble sites)	40,347.00			40,347.00
433-439 Other Public Works (435)	1,278.00	4,177.00	1,198.00	6,653.00
490-492 Miscellaneous (492)	2,394.00			2,394.00

	General Fund	Enterprise Funds Water Fund	Enterprise Funds Sewer Fund	Total
ENTERPRISE FUNDS				
410 Personal Services	4083.00	960.00	675.00	5,718.00
420 Other Expenses	6066.00	837.00	559.00	7,462.00
426 Supplies and Materials	1736.00	19915.00	3.00	21,654.00
Total Disbursements	66375.00	25889.00	2435.00	94699.00
				0.00
Subtotal of Receipts, Disbursements and Transfers	(7472.00)	(1962.00)	9973.00	539.00
Fund Cash Balance, January 1, 2014__	80693.00	21007.00	61388.00	163,088.00
Adjustments:				
Corrections	2408.00		(2408.00)	0.00
				0.00
				0.00
Restated Fund Cash Balance, January 1, 2014__	83101.00	21007.00	58980.00	163088.00
FUND CASH BALANCE, DECEMBER 31, 2014__	75629.00	19045.00	68953.00	163,627.00

6:15 PM
12/21/15
Accrual Basis

City of Westport
Profit & Loss by Class
January through December 2015

	City	Sewer	Water	Unclassified	TOTAL
Income					
311-319 Other Taxes (319)	177.79	0.00	0.00	0.00	177.79
311 Property Taxes	10,117.26	0.00	0.00	0.00	10,117.26
313 Sales Tax	4,346.51	0.00	0.00	0.00	4,346.51
320 Licenses and Permits	1,025.00	0.00	0.00	0.00	1,025.00
330 Intergovernmental Revenues					
334 State Grants	2,659.00	0.00	0.00	0.00	2,659.00
335 State Shared Revenue					
335.01 Bank Franchise Tax	127.14	0.00	0.00	0.00	127.14
335.02 Motor Veh Comm Prorate	328.91	0.00	0.00	0.00	328.91
335.03 Liquor Tax Reversion	404.73	0.00	0.00	0.00	404.73
335.04 Motor Veh Licenses (5%)	1,590.65	73.71 ✓	0.00	0.00	1,664.36
335.07 Liquor Lic Reversion	245.39	0.00	0.00	0.00	245.39
335.08 LocalGovHwy&BridgeResTax	3,337.20	0.00	0.00	0.00	3,337.20
Total 335 State Shared Revenue	6,034.02	73.71	0.00	0.00	6,107.73
338 County Shared Revenue					
338.02 Cty Hwy&BridgeReserveTax	7,970.00	0.00	0.00	0.00	7,970.00
338.03 County Wheel Tax	198.32	4.77 ✓	0.00	0.00	203.09
Total 338 County Shared Revenue	8,168.32	4.77	0.00	0.00	8,173.09
Total 330 Intergovernmental Revenues	16,861.34	78.48	0.00	0.00	16,939.82
360 Misc Revenue					
361 Investment Earnings	71.42	0.00	0.00	0.00	71.42
362 Rentals	175.00	0.00	0.00	0.00	175.00
363 Special Assessments	173.00	7,303.99	0.00	0.00	7,476.99
369 Other					
369.03 RecoveryofPriorYrExpend	2,164.94	0.00	0.00	0.00	2,164.94
369.99 Other	89.34	0.00	0.00	0.00	89.34
Total 369 Other	2,254.28	0.00	0.00	0.00	2,254.28
Total 360 Misc Revenue	2,673.70	7,303.99	0.00	0.00	9,977.69
370-389 Enterprise Op Revenue					
381 Water					
381.01 Metered&FlateRateWatSale	2,402.00	0.00	21,782.23	0.00	24,184.23
Total 381 Water	2,402.00	0.00	21,782.23	0.00	24,184.23
383 Sewer					
383.01 Sewer Charges	0.00	20,128.40	0.00	0.00	20,128.40
Total 383 Sewer	0.00	20,128.40	0.00	0.00	20,128.40
Total 370-389 Enterprise Op Revenue	2,402.00	20,128.40	21,782.23	0.00	44,312.63

6:15 PM
12/21/15
Accrual Basis

City of Westport
Profit & Loss by Class
January through December 2015

	City	Sewer	Water	Unclassified	TOTAL
386 Cemetery	75.00	0.00	0.00	0.00	75.00
Split	435.13	0.00	0.00	0.00	435.13
Total Income	38,113.73	27,510.87	21,782.23	0.00	87,406.83
Expense					
411-419 General Govt (414)	5,136.19	0.00	0.00	0.00	5,136.19
420 Other Expenses	5,547.12	788.54	15,740.92	0.00	22,076.58
422 Fire	975.00	0.00	0.00	0.00	975.00
426 Supplies & Materials	673.25	0.00	14,157.71	0.00	14,830.96
432 Sanitation					
S432-Sanitation City	0.00	4,119.18	0.00	0.00	4,119.18
Total 432 Sanitation	0.00	4,119.18	0.00	0.00	4,119.18
433-439 Other PublicWorks (435)	2,266.64	0.00	4,177.16	0.00	6,443.80
491 Miscellaneous	2,642.75	0.00	0.00	0.00	2,642.75
Payroll Expenses	4,813.43	480.00	960.00	0.00	6,253.43
Total Expense	22,054.38	5,387.72	35,035.79	0.00	62,477.89
Net Income	**16,059.35**	**22,123.15**	(13,253.56)	**0.00**	**24,928.94**

6:17 PM
12/21/15
Accrual Basis

City of Westport
Trial Balance
As of December 31, 2015

	Dec 31, 2015	
	Debit	Credit
**City Checking	0	
**City Checking:General Fund	89,286	
**City Checking:Sewer Fund	81,977	
**City Checking:Water Fund	8,194	
Transfer from another account		45,418
Opening Balance Equity		41,005
Retained Earnings		68,105
311-319 Other Taxes (319)		178
311 Property Taxes		10,117
313 Sales Tax		4,347
320 Licenses and Permits		1,025
330 Intergovernmental Revenues:334 State Grants		2,659
330 Intergovernmental Revenues:335 State Shared Revenue:335.01 Bank Franchise Tax		127
330 Intergovernmental Revenues:335 State Shared Revenue:335.02 Motor Veh Comm Prorate		329
330 Intergovernmental Revenues:335 State Shared Revenue:335.03 Liquor Tax Reversion		405
330 Intergovernmental Revenues:335 State Shared Revenue:335.04 Motor Veh Licenses (5%)		1,664
330 Intergovernmental Revenues:335 State Shared Revenue:335.07 Liquor Lic Reversion		245
330 Intergovernmental Revenues:335 State Shared Revenue:335.08 LocalGovHwy&BridgeResTax		3,337
330 Intergovernmental Revenues:338 County Shared Revenue:338.02 Cty Hwy&BridgeReserveTax		7,970
330 Intergovernmental Revenues:338 County Shared Revenue:338.03 County Wheel Tax		203
360 Misc Revenue:361 Investment Earnings		71
360 Misc Revenue:362 Rentals		175
360 Misc Revenue:363 Special Assessments		7,477
360 Misc Revenue:369 Other:369.03 RecoveryofPriorYrExpend		2,165
360 Misc Revenue:369 Other:369.99 Other		89
370-389 Enterprise Op Revenue:381 Water:381.01 Metered&FlateRateWatSale		24,184
370-389 Enterprise Op Revenue:383 Sewer:383.01 Sewer Charges		20,128
386 Cemetery		75
Split		435
411-419 General Govt (414)	5,136	
420 Other Expenses	22,077	
422 Fire	975	
426 Supplies & Materials	14,831	
432 Sanitation:S432-Sanitation City	4,119	
433-439 Other PublicWorks (435)	6,444	
491 Miscellaneous	2,643	
Payroll Expenses	6,253	
TOTAL	241,935	241,933

USER RATE ORDINANCE

Resolution 2015-1 Fee Rate Schedule

Water Rates
8-2-3 Base Fee - $26; Inactive Base Fee - $18; Usage - $2.60 per all units; Overage Rate – additional $3.15 per all units exceeding 12.

Late Fee - $15 (water/sewer combined billing)
8-2-10 Turning Water off/on during regular hours - $15; Turning Water off/on after hours - $30
8-3-5 Meter inspection/sealing regular hours - $15; Meter inspection/sealing after hours - $30
8-3-9 Testing Water Meter - $40
8-4-5 Inspection of Water / Sewer Installations or Repairs - $50

Sewer
8-2-3 Base Fee - $30; Inactive Base Fee - $15; Usage - $0.00 per unit; Business/Piggyback - Base Fee - $60; Usage $0.00 per unit
8-10-6 Sump Discharge (un-controlled) - $0 per month; Sump Discharge (controlled) - $0 per month.

Water/Sewer General
8-1-3 Customer Service Deposit – $50.
8-1-7 New Service Development Fee - $200
6-7-2 & 8-4-1 ROW Excavation Permit - $10: May require bond or security deposit per 6-7-2
Returned Check Fee - $40

Water/Sewer Fines and Penalties
8-3-10/11 Metering Tampering or Broken/Missing Seal Fine - $250
8-4-1 Fine ROW Excavation without permit - $500
8-4-3 Contractor Failure to Notify - $500
8-6-4 Curb Cock Tampering - $250
8-7-6 Tampering or damage to Town Water or Sewer Components - $250
8-7-8 Illegal Toxic or Harmful Sewer Discharge - $500
8-10-5 Illegal Discharge into Sanitary Sewer or Broken/Missing Sump Seal - $250

Other Reference
5-3-2 Animal Running at Large - $50; (1st Offense); $100 per repeated occurrence for same animal.
4-2-1 Annual Liquor License - $900.

Permits or Forms
Building Permit - $10. Fine for work with no permit - $100
6-6-7 Permit for Moving or Demolishing Buildings - $10 application fee. May require bond or security deposit
6-6-13 Fines or Penalties for moving/demo of Buildings - $100

PUBLIC HEARING NOTICE AND MEETING MINUTES

NOTICE OF PUBLIC HEARING for the
Westport Wastewater and Storm Water Improvement Project

The Town of Westport is seeking up to $650,000 of funding from the Board of Water and Natural Resources for improvements to the wastewater treatment and storm water system. These improvements include placing rip-rap at the lagoon and replacing the lift station. The project will also add in some additional storm water system. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the Clean Water State Revolving Fund (SRF) Program. The Clean Water SRF loan terms are 3.25% for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of loan principal. The amount, source of funds, and terms will be determined by the Board of Water and Natural Resources when the application is presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

The public hearing will be held at City Hall on December 29, 2015 at 7:00pm.

NORTHEAST COUNCIL OF GOVERNMENTS

P.O. BOX 1985 ABERDEEN, SD 57402-1985

WASTEWATER SYSTEM ENGINEERING REPORT

WESTPORT, SOUTH DAKOTA

PREPARED FOR:

CITY OF WESTPORT
WESTPORT, SD

PREPARED BY:

CLARK ENGINEERING CORPORATION
2301 8TH AVE. N.E.
P.O. BOX 20
ABERDEEN, SD 57402-0020

JULY 2013

WASTEWATER SYSTEM ENGINEERING REPORT

WESTPORT, SOUTH DAKOTA

I hereby certify that this Study and Report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota

Michael D. Gutenkauf

Date 7-26-13 Reg. No. 7904

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7904
MICHAEL D.
GUTENKAUF
SOUTH DAKOTA

WASTEWATER SYSTEM ENGINEERING REPORT

WESTPORT, SD

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WASTEWATER SYSTEM ENGINEERING REPORT
CITY OF WESTPORT

Executive Summary

The wastewater system for the city of Westport has several issues. The capacity of the wastewater ponds is in question because the way the cells are operated is not known. If they are operated in series, they would have sufficient capacity for complete retention if the average inflow was less than 67 gallons per capita per day (gpcpd). The average inflow rate between January and November of 2012 was only 44.82 gpcpd. However, if the cells were operated in parallel, the average inflow would have to be less than 46 gpcpd to meet complete retention. The operation of the cells affects the allowable percolation rate, and in turn the capacity of the system. In the past, the city has seen sewer flow rates spike each spring. These spikes do not correlate with high groundwater levels. The increases are believed to be the result of residents connecting their sump pumps directly to the sanitary system. Todd Hertel from the city has been working to disconnect any sump pumps connected to the sanitary system. Any reduction in sewer flows the city could achieve by disconnecting sump pumps would result in gained capacity for the ponds.

The pumps in the liftstation are currently operating at roughly half of their rated capacity. A faulty air-release valve would have an appreciable effect on the pumping rate. Sediment buildup could also affect the performance of the pumps. At the current pumping rate, velocities in the force main are slow enough that some accumulation of sediment would be expected. The pumping rates for the pumps would likely improve by replacing the faulty valve as well as poly-pigging the force main to remove built up sediment.

The storm sewer system is comprised of old clay tile piping and newer PVC construction. The system is undersized based on the contributing area, the amount of sediment built up, and additional drain tile tied into the system. Adding an additional line that would outlet into the Elm River would help with backups, as well as provide an alternative system for residents to tie their sump pumps into.

In the future, the city will likely need to make improvements to their system in the form of adding capacity to the ponds, upgrading the liftstation, and implementing a regular cleaning schedule for the mains. These items will be costly and the user rates should be analyzed to help budget for these improvements.

I. Introduction

Westport is a community of 133 people (2010 census) and is located in Brown County in northeastern South Dakota. The purpose of this report is to examine the need for improvements within the City of Westport's sanitary sewer system, as well as describe the existing storm sewer system and analyze possible improvements.

II. Environmental Information

A. Terrain and Soils

The terrain throughout the City of Westport is gently sloping. The primary soils in and around Westport are:

- LaDelle silt loam
- Barnes-Buse-Svea loams – (1 to 9% slopes)
- Barnes-Svea loams – (1 to 6% slopes)
- Buse-Barnes loams – (9 to 25% slopes)

All the soils are classified as loams. These soils are classified as well drained, except for the Barnes-Svea loams which are classified as moderately well drained. The location of these soils along with further soil information can be viewed in printouts from the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey in ***Attachment A.***

B. Historical and Archaeological Sites

A database search of the Historic Register was done and no buildings were identified in the City of Westport. A printout from this search is included in ***Attachment B.***

C. Floodplain and Wetlands

Figure 1 is a map of USF&WS - NWI Wetlands for Westport. Figure 2 is a map of the 100-YR floodplain printed from FEMA's Google Earth layer. Any project resulting from this report will be referred to these agencies for comment.

D. Agricultural Lands

Pending local government approval and selection of a project the U.S. Department of Agriculture – Natural Resource Conservation Service will be contacted to ensure that no unique or prime farmland will be affected.

E. Wild and Scenic Rivers

The nearest "Wild and Scenic River" is the Missouri River, according to the National Park Service. Westport's sewer system doesn't appear to affect this River.

F. Fish and Wildlife Protection

The U.S. Fish and Wildlife Service and the S.D. Department of Game, Fish and Parks will be contacted to ensure that fish and wildlife resources will not be harmed from the implementation of any project resulting from this Report.

G. Water Quality and Quantity

A primary goal of future construction will be to reduce inflow and potential outflow of wastewater, thus reducing the system flows and the potential for contamination of ground water.

H. Direct and Indirect Impacts & Mitigating Adverse Impacts

Any project resulting from this report will be analyzed for Direct and Indirect impacts to the environment, and Federal and State agencies will have opportunity for comment. Mitigation of impacts will be provided if specific impacts are identified in the review process.

III. Existing Wastewater Flows and Treatment System

The existing storm and sanitary sewer systems have been drawn in AutoCAD using as-built drawings and field survey of manholes, drop inlets, and sewer valves. The drawing can be found in ***Attachment C***.

A. Wastewater Ponds

The current wastewater treatment facility consists of 1.7 and 0.6 acre cells, measured at the design water surface elevation of 1355'. The ponds were constructed in 1982. The current operation method of the cells is unknown. According to the latest inspection report by DENR, the ponds lack sufficient capacity to treat the entirety of wastewater inflow from the city. The water balance done by DENR associated with that inspection report calculated the amount of water that would infiltrate into the soils and evaporate into the atmosphere. Because the facility is permitted as a complete-retention facility, they calculated the capacity of the ponds to be deficient by approximately 3,800 gallons per day by subtracting the infiltration and evaporation amounts from the daily inflow. The SD DENR water balance assumes that the cells are operated in parallel, and that the average inflow is 75 gallons/capita/day (gpcpd). If the cells were operated in series with the 1.7 acre cell acting as a secondary pond as designed, which would allow for a faster infiltration rate and the average inflow rate from January to November of 2012 was used, the cells would have over 3,000 gpd of excess capacity. While no liquid depth records exist for the facility, observations by the city indicate that the ponds have never been in danger of overflowing with the exception of 2011 following a several year period of flooding and above average flows.

Based on observations by the city, and the water balance using actual inflow rates, the ponds have marginally sufficient capacity. The actual inflow rates could be reduced by eliminating sump pump inflows. The inspection report also indicates that aquatic vegetation is growing in the 1.7 acre cell, tall grasses and weeds are growing along the dikes, the facility lacks warning signage near the facility entrance, and that muskrats have been seen in the area. The inspection report can be found in its entirety in ***Attachment D***. Riprap replaced on a portion of the berm following high water

levels in 2011. It should be noted that during the high water levels in 2009 the city had to bypass the wastewater ponds and discharge directly to the Elm River for an unknown amount of time.

B. Lift Station and Forcemain

The current liftstation consists of a wet well and a dry well, which formerly housed the pump controls. The dry well has a problem with water infiltration, especially during wet years. The pumps have been replaced in the last ten years and the control panel has been moved outside of the dry well for easier access. Clark Engineering calculated the monthly lift station flows for the lift station in Westport using hour meter data provided by the city and pump calibrations done in the field. The pumps are currently operating at about only half of their rated capacity, although they still meet DENR design criteria of two and half times the average flow rate for main sewers.

48.63 GPM > (2.5 x 6.07 GPM (Average sewer flow rate 2008-November 2012))

A faulty air-release valve likely is having an impact on the pumps ability to perform. Replacing the valve would likely raise the pumping rate of the liftstation. Currently, the calculated flow velocity of 50 GPM in 4" PVC forcemain is 1.276 feet/second. Velocities this slow are likely to lead to deposits in the forcemain, reducing the discharge rate of the pumps. Poly-pigging of the forcemain downstream of the liftstation would likely improve the pumping rate of the liftstation. Doing this would help to break up any deposits that have accumulated over the years and help to improve the pumping rate of the liftstation. SD Association of Rural Water Systems has been contacted regarding the availability of this service, and the associated costs. They provide this service regularly to small communities, and the cost is only around $100. Not included in that cost is the water used to force the pig along the force main, the pump or fire truck to supply adequate pressure, nor the flange used to introduce the pig to the line. The city should also consider adopting a regular maintenance schedule to combat deposits within the sanitary and storm sewers.

DENR commented in their last inspection report that the lift station lacks an alarm. According to Westport, the back-up generator for the lift station is not functional. Moving forward, it would be beneficial to replace the lift station with a duplex submersible station due to the age of the current station, the leaks in the drywell, corrosion, and confined space issues with accessing the pumps. ***Attachment E*** includes graphs of monthly liftstation flows and a graph of monthly precipitation. The data for 2008 through November 2012 is summarized in Table 1 below.

YEAR	LIFTSTATION INFLOW (GPM)	EST. POP.	SEWER (GPCD)	WATER (GPCD)	ANN. PRECIP.
2008	4.24	131	46.58	81.04	19.70
2009	5.44	133	58.90	80.89	24.27
2010	6.50	133	70.32	84.81	27.21
2011	9.95	135	106.18	84.04	23.31
2012 (JAN-NOV)	4.20	135	44.82	75.65	13.89

Table 1 – Lift Station flows for 2008- Nov. 2012

C. User Rates

The city of Westport currently charges $20 per connection per month. This rate is currently barely enough to cover operation and maintenance costs for the sanitary sewer system. The rates should be evaluated in light of future improvements to the system (i.e. Replace lift station, add to/replace wastewater ponds, regular cleaning schedule). The costs of improvements are typically very large, and would require an increase in rates. It may be more acceptable to residents to have small incremental increases in rates versus a large one-time increase. South Dakota Association of Rural Water Systems could provide a user rate analysis once the city decides how it wants to improve the system or implement a maintenance schedule and the capital improvement costs are known.

D. Mains

The existing mains were constructed around 1982 and are made of 6" and 8" PVC. The only times problems have been encountered with the sanitary mains have been during periods of extremely high flows (2009-2011). During the 2009 100-year flood on the Elm River, water entered the sanitary sewer system through manholes and other sources, such as open caps on service cleanouts. Similar conditions were encountered in 2011, resulting in the wastewater ponds being nearly full. Sewer backups were an issue for some homes during those periods of flooding.

E. Infiltration and Inflow (I/I)

In recent years, the accumulation of years with average or well above average precipitation has resulted in shallow ground water table conditions in Westport and in other communities in northeast South Dakota. Sewers are vulnerable to Infiltration under these conditions, especially older clay tile sewers. However, the existing sewer system for Westport was installed in the early 1980's and was constructed with PVC main, which reduces the possibility for infiltration. However, a portion of the services are thought to be clay tile which increases likelihood for infiltration. During the Elm River flood of 2009, several manholes became submerged, and were taking on flood water.

However, based on the information available at the time of this report, inflow from sump pumps appears to have a significant impact on sewer flows. The pumping logs for the liftstation show seasonal spikes in flow rates. These spikes do not correspond directly with groundwater levels or precipitation and occur in winter and spring months when sump pumps are likely to be active. Prior to Todd Hertel joining the city board in 2012, there were five homes that had sump pumps connected directly to the sanitary sewer. Currently, the city believes only two homes are still discharging to the sanitary system. These homes were/are discharging into the sanitary sewer because they have no alternative during the winter months as no storm sewer exists in that area. A proposed storm sewer addition that would deal with this issue is addressed later in the report. Connecting sump pumps directly to the sanitary sewer is officially forbidden except on case-by-case basis. Surrounding cities like Aberdeen, Redfield, Webster, and Groton all forbid or seasonally restrict sump pumps being connected directly to the sanitary sewer system.

i. USGS Groundwater Data

Groundwater data from the United States Geological Survey (USGS) is available from several monitoring wells near Westport. A well located near Ordway, SD has the best time range of groundwater levels. Over the time period from January 2009 to January 2013, it was observed that the groundwater table rose approximately 5 feet between the spring of 2009 and July of 2010. Groundwater levels reached a local maximum in July 2011 with depth to water only 4 feet. At the same time, pumping logs at the liftstation show flows of about 5 GPM, which is over 20% below the average of 6.36 GPM. This reinforces the notion that sump pump flows are primary contributors to high flows. Graphical displays of the groundwater levels over time are included in ***Attachment F.***

ii. USGS Stream Gage Data

The USGS maintains a stream gaging station on the Elm River at the city of Westport. The station does not have data of stream depth beyond 2013. It does however have records of stream discharge (cubic feet per second), which is related to stream depth. The data shows spikes in the springs of 2009, 2010, and 2011 where the flow approached or exceeded 5,000 CFS. During the summer and fall months of those same years, the flow averaged between 30 CFS and 90 CFS. The graph of discharge for the Elm River from January 2009 through January 2012 can be found in ***Attachment G***.

iii. Analysis of Wastewater Flows

The graphs of lift station flows included in ***Attachment E*** show fluctuations which roughly correlate with the high water table elevations and above-average precipitation experienced in recent years in Westport, indicating the influence of I/I on the system, particularly sump pump flows during the spring months.

F. Storm Sewer

The age of the storm sewer varies. Most of the system is old clay tile that was once the sanitary sewer system, while other portions are PVC of newer construction. The diameter of the piping varies between 6" and 8". The diameter of the piping is too small for storm flows given the amount of contributing area, plus an allowance for sediment buildup. There have been problems with the storm sewer backing up during wet periods due to capacity issues, as wells as sections of the old clay tile system collapsing. The city has added drop inlets and drain tile to the system in recent years, which has added to the problem of inadequate sizing. Sediment has likely built up in the majority of the system because of the age of the system, as well as the city's streets being gravel. Clark Engineering has proposed an additional line that would also serve as a second outlet for the storm sewer system, as well as provide an alternative avenue for residents to discharge sump pumps during cold weather rather than the sanitary sewer. The new line would begin roughly at the intersection of Brown Country 9 and Brown County 10 and travel south past the baseball diamond before turning east and dumping into the Elm River. The proposed storm sewer addition can be seen on the AutoCAD drawing in ***Attachment C.***

G. Future Conditions

i. Population and Land Use Projections

The City of Westport's population is 133 people (2010 Census), and is currently estimated at 135 (2011 Census Bureau estimate). The city's population has generally increased slowly since 1940, but has grown at an increased rate in recent years – approximately 1% per year from 1970 to the present. Population data and projection may be found in ***Attachment H.***

The projected land uses for future conditions are not anticipated to change from the present state.

ii. Forecast of Flows and Waste Loads

Because the population is not anticipated to increase dramatically in the future, and no industrial or commercial loads are expected, the flow and waste loads are not expected to change in a significant amount.

iii. Flow Reduction

The removal of any sump pump flows that are discharging to the sanitary sewer could potentially reduce the total waste flow by an appreciable amount. The amount of flow reduction would be dependent on the number of sump pumps discharging to the sanitary sewer and the amount of precipitation.

IV. Discussion of Alternatives

The city of Westport has several options to improve their sanitary and storm sewer systems overall. These alternatives are non-exclusive to each other.

Upgrading the current liftstation to a duplex submersible would require higher upfront costs, but make the operation and maintenance easier in the long term. Included in this option is the replacement of a faulty air-release valve that is most likely reducing the capacity of the pumps in place, as well as the installation of a backup generator and an alarm.

Build an additional storm sewer line that would also serve as a second outlet for the system into the Elm River. The additional line could be done entirely with piping, or a combination of piping and ditching. Construction of this new line would help with the storm sewer system backing up during wet periods. This line should also reduce the peak flows in the system, as it will provide an alternate route for sump pump discharges.

Do nothing. The city could adopt no changes to the storm and sanitary sewer systems or the way it operates and maintains them. This option would cost the city nothing initially, but would most likely lead to increased costs when equipment/infrastructure fails prematurely.

A. Recommended Improvements/Activities

1. Replace lift station with duplex submersible LS (Cost estimate in ***Attachment I***)

2. Poly-pig forcemain, and develop a regular cleaning schedule (SD ARWS can provide service)
3. Raise user rates. City will need additional funds for system maintenance and improvements in the future. (SD ARWS can provide service)
4. Install storm sewer addition. (Cost Estimate in ***Attachment J***)
5. Consider increasing wastewater pond areas by adding or replacing cells. (Construction cost estimates in ***Attachment K***)

FIGURE 1

U.S. Fish and Wildlife Service

National Wetlands Inventory

Westport Wetland Map

Jul 9, 2013

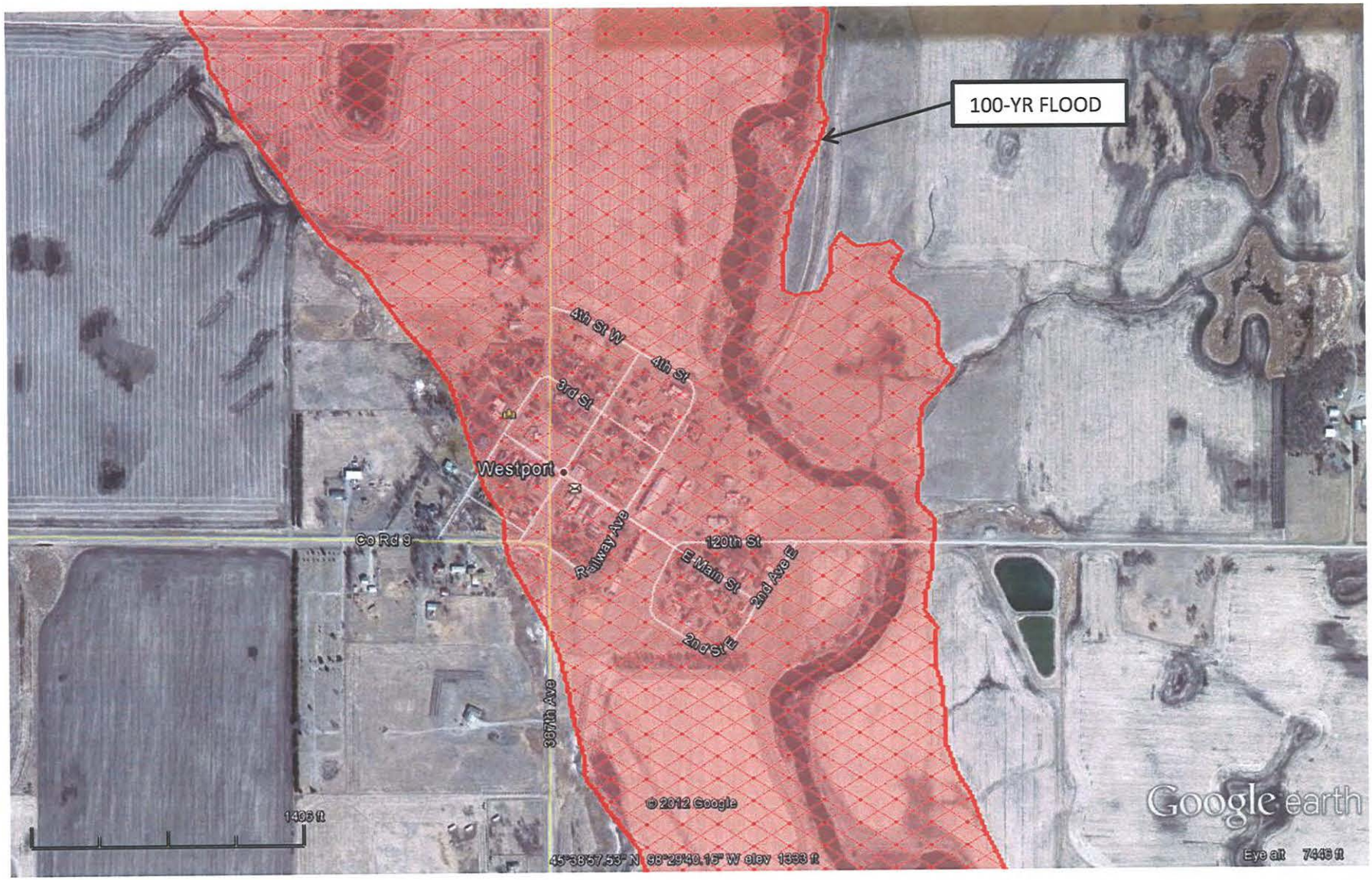
Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

FIGURE 2


100-YR FLOOD
4th St W
4th St
3rd St
Westport
Railway Ave
Co Rd 9
120th St
E Main St
2nd Ave E
2nd St E
387th Ave
© 2012 Google
Google earth
1406 ft
45°38'57.53" N 98°29'40.15" W elev 1333 ft
Eye alt 7446 ft

ATTACHMENT A

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Brown County, South Dakota

Westport SD

November 12, 2012

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Custom Soil Resource Report
Soil Map

Map Scale: 1:8,610 if printed on A size (8.5" x 11") sheet.

N

Meters: 0, 100, 200, 400, 600

Feet: 0, 450, 900, 1,800, 2,700

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:8,620 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Brown County, South Dakota
Survey Area Data: Version 16, Feb 11, 2010

Date(s) aerial images were photographed: 8/7/2004; 7/24/2004

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Brown County, South Dakota (SD013)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BbC	Barnes-Buse-Svea loams, 1 to 9 percent slopes	49.7	17.3%
BhB	Barnes-Svea loams, 1 to 6 percent slopes	28.9	10.1%
BkA	Barnes-Svea-Tonka complex, 0 to 3 percent slopes	6.5	2.3%
BzVE	Buse-Barnes loams, 9 to 25 percent slopes	16.2	5.6%
Em	Embden fine sandy loam	14.1	4.9%
La	LaDelle silt loam	159.4	55.6%
Lc	LaDelle silt loam, channeled	1.9	0.7%
W	Water	10.2	3.6%
Totals for Area of Interest		**286.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Brown County, South Dakota

BbC—Barnes-Buse-Svea loams, 1 to 9 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Barnes and similar soils: 45 percent
Buse and similar soils: 25 percent
Svea and similar soils: 15 percent
Minor components: 15 percent

Description of Barnes

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: High (about 10.3 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Loam (G055BY100ND)

Typical profile

0 to 7 inches: Loam
7 to 18 inches: Loam
18 to 40 inches: Loam
40 to 60 inches: Loam

Description of Buse

Setting

Landform: Plains
Landform position (two-dimensional): Shoulder

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water capacity: High (about 10.4 inches)

Interpretive groups

Land capability (nonirrigated): 4e
Ecological site: Thin Loamy (R055BY068ND)
Other vegetative classification: Limy Upland (G055BY400ND)

Typical profile

0 to 7 inches: Loam
7 to 22 inches: Loam
22 to 60 inches: Loam

Description of Svea

Setting

Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Properties and qualities

Slope: 1 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy Overflow (R055BY059ND)
Other vegetative classification: Overflow (G055BY500ND)

Typical profile

0 to 15 inches: Loam
15 to 26 inches: Loam

26 to 60 inches: Clay loam

Minor Components

Cresbard

Percent of map unit: 8 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Clayey (R055BY056ND)
Other vegetative classification: Clayey Subsoil (G055BY210ND)

Tonka, undrained

Percent of map unit: 7 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Wet Meadow (R055BY071ND)
Other vegetative classification: Wet (G055BY900ND)

BhB—Barnes-Svea loams, 1 to 6 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Barnes and similar soils: 60 percent
Svea and similar soils: 25 percent
Minor components: 15 percent

Description of Barnes

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: High (about 10.3 inches)

Interpretive groups
Land capability (nonirrigated): 2e
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Loam (G055BY100ND)

Typical profile
0 to 7 inches: Loam
7 to 18 inches: Loam
18 to 40 inches: Loam
40 to 60 inches: Loam

Description of Svea

Setting
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Properties and qualities
Slope: 1 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 10.8 inches)

Interpretive groups
Land capability (nonirrigated): 2c
Ecological site: Loamy Overflow (R055BY059ND)
Other vegetative classification: Overflow (G055BY500ND)

Typical profile
0 to 15 inches: Loam
15 to 26 inches: Loam
26 to 60 inches: Clay loam

Minor Components

Buse

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Thin Loamy (R055BY068ND)
Other vegetative classification: Limy Upland (G055BY400ND)

Cresbard

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Clayey (R055BY056ND)
Other vegetative classification: Clayey Subsoil (G055BY210ND)

Hamerly

Percent of map unit: 3 percent
Landform: Rims on potholes
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Limy Subirrigated (R055BY058ND)
Other vegetative classification: Subirrigated (G055BY700ND)

Tally

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Sandy (R055BY062ND)
Other vegetative classification: Droughty Loam (G055BY120ND)

Tonka, undrained

Percent of map unit: 3 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Wet Meadow (R055BY071ND)
Other vegetative classification: Wet (G055BY900ND)

BkA—Barnes-Svea-Tonka complex, 0 to 3 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Barnes and similar soils: 40 percent
Svea and similar soils: 25 percent
Tonka, undrained, and similar soils: 15 percent
Minor components: 20 percent

Description of Barnes

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: High (about 10.3 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Loam (G055BY100ND)

Typical profile

0 to 7 inches: Loam
7 to 18 inches: Loam
18 to 40 inches: Loam
40 to 60 inches: Loam

Description of Svea

Setting

Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy Overflow (R055BY059ND)
Other vegetative classification: Overflow (G055BY500ND)

Typical profile

0 to 15 inches: Loam
15 to 26 inches: Loam
26 to 60 inches: Clay loam

Description of Tonka, Undrained

Setting

Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey alluvium

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0

Available water capacity: High (about 10.9 inches)

Interpretive groups

Land capability (nonirrigated): 4w
Ecological site: Wet Meadow (R055BY071ND)
Other vegetative classification: Wet (G055BY900ND)

Typical profile

0 to 18 inches: Silt loam
18 to 50 inches: Silty clay loam
50 to 60 inches: Clay loam

Minor Components

Cresbard

Percent of map unit: 6 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Clayey (R055BY056ND)
Other vegetative classification: Clayey Subsoil (G055BY210ND)

Hamerly

Percent of map unit: 6 percent
Landform: Rims on potholes
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Limy Subirrigated (R055BY058ND)
Other vegetative classification: Subirrigated (G055BY700ND)

Nishon, undrained

Percent of map unit: 5 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R053BY003ND)
Other vegetative classification: Wet (G055BY900ND)

Cavour

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Claypan (R055BY057ND)
Other vegetative classification: Claypan (G055BY800ND)

BzVE—Buse-Barnes loams, 9 to 25 percent slopes

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Buse and similar soils: 45 percent
Barnes and similar soils: 40 percent
Minor components: 15 percent

Description of Buse

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water capacity: High (about 10.4 inches)

Interpretive groups

Land capability (nonirrigated): 7e
Ecological site: Thin Loamy (R055BY068ND)
Other vegetative classification: Limy Upland (G055BY400ND)

Typical profile

0 to 7 inches: Loam
7 to 22 inches: Loam
22 to 60 inches: Loam

Description of Barnes

Setting

Landform: Moraines

Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Properties and qualities

Slope: 9 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water capacity: High (about 10.3 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Steep Loam (G055BY109ND)

Typical profile

0 to 7 inches: Loam
7 to 18 inches: Loam
18 to 40 inches: Loam
40 to 60 inches: Loam

Minor Components

Renshaw

Percent of map unit: 5 percent
Landform: Outwash terraces on moraines
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Shallow Gravel (R055BY063ND)
Other vegetative classification: Not suited (G055BY000ND)

Svea

Percent of map unit: 5 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Loam (G055BY100ND)

Wabek, variant

Percent of map unit: 4 percent
Landform: Outwash terraces on moraines
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: Very Shallow (R055BY069ND)
Other vegetative classification: Not suited (G055BY000ND)

Tonka, undrained
Percent of map unit: 1 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Wet Meadow (R055BY071ND)
Other vegetative classification: Wet (G055BY900ND)

Em—Embden fine sandy loam

Map Unit Setting
Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition
Embden and similar soils: 90 percent
Minor components: 10 percent

Description of Embden

Setting
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy glaciolacustrine deposits

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups
Land capability (nonirrigated): 3e
Ecological site: Sandy (R055BY062ND)
Other vegetative classification: Loam (G055BY100ND)

Typical profile

0 to 16 inches: Fine sandy loam
16 to 27 inches: Fine sandy loam
27 to 60 inches: Fine sandy loam

Minor Components

Tiffany

Percent of map unit: 5 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Subirrigated (R055BY065ND)
Other vegetative classification: Wet (G055BY900ND)

Wyndmere

Percent of map unit: 5 percent
Landform: Rims on swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Limy Subirrigated (R055BY058ND)
Other vegetative classification: Subirrigated (G055BY700ND)

La—LaDelle silt loam

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Ladelle and similar soils: 90 percent
Minor components: 10 percent

Description of Ladelle

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Very high (about 12.1 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy (R055BY064ND)
Other vegetative classification: Loam (G055BY100ND)

Typical profile

0 to 15 inches: Silt loam
15 to 34 inches: Silt loam
34 to 60 inches: Stratified silt loam to clay loam

Minor Components

Lamoure

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (R055BY065ND)
Other vegetative classification: Subirrigated (G055BY700ND)

Ranslo

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (R055BY065ND)
Other vegetative classification: Claypan (G055BY800ND)

Lc—LaDelle silt loam, channeled

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Ladelle and similar soils: 90 percent
Minor components: 10 percent

Description of Ladelle

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 42 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Very high (about 12.1 inches)

Interpretive groups

Land capability (nonirrigated): 6w
Ecological site: Loamy Overflow (R055BY059ND)
Other vegetative classification: Overflow (G055BY500ND)

Typical profile

0 to 15 inches: Silt loam
15 to 34 inches: Silt loam
34 to 60 inches: Stratified silt loam to clay loam

Minor Components

Harriet

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Saline Lowland (R055BY060ND)
Other vegetative classification: Not suited (G055BY000ND)

Lamoure, channeled

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Subirrigated (R055BY065ND)
Other vegetative classification: Wet (G055BY900ND)

Ranslo

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: Subirrigated (R055BY065ND)
Other vegetative classification: Claypan (G055BY800ND)

W—Water

Map Unit Setting

Elevation: 1,000 to 2,050 feet
Mean annual precipitation: 16 to 21 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 120 to 140 days

Map Unit Composition

Water: 100 percent

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ATTACHMENT B

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Last updated: 12/26/12

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ATTACHMENT C

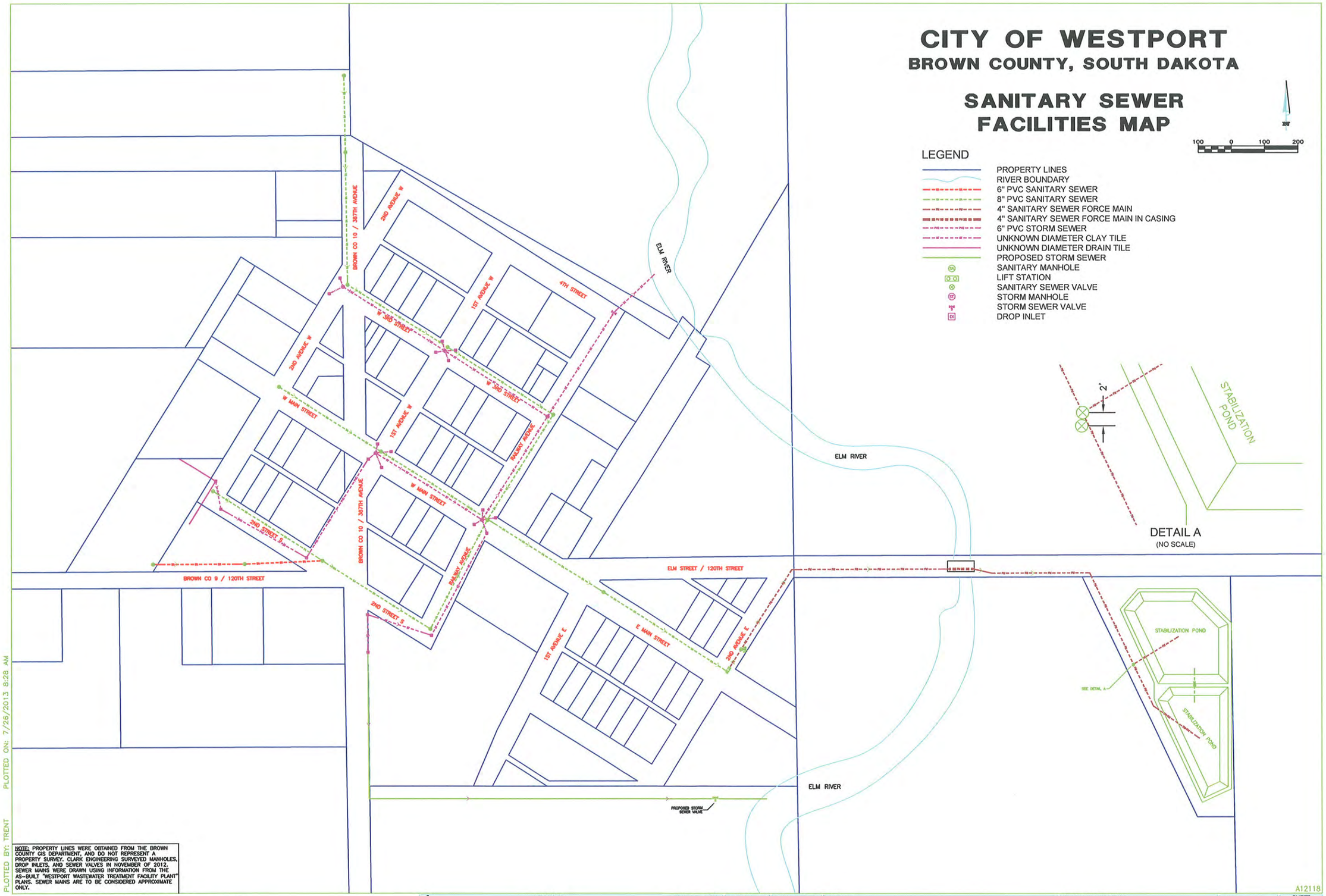
CITY OF WESTPORT
BROWN COUNTY, SOUTH DAKOTA

SANITARY SEWER FACILITIES MAP

100 0 100 200

LEGEND

- PROPERTY LINES
- RIVER BOUNDARY
- 6" PVC SANITARY SEWER
- 8" PVC SANITARY SEWER
- 4" SANITARY SEWER FORCE MAIN
- 4" SANITARY SEWER FORCE MAIN IN CASING
- 6" PVC STORM SEWER
- UNKNOWN DIAMETER CLAY TILE
- UNKNOWN DIAMETER DRAIN TILE
- PROPOSED STORM SEWER
- SANITARY MANHOLE
- LIFT STATION
- SANITARY SEWER VALVE
- STORM MANHOLE
- STORM SEWER VALVE
- DROP INLET



NOTE: PROPERTY LINES WERE OBTAINED FROM THE BROWN COUNTY GIS DEPARTMENT, AND DO NOT REPRESENT A PROPERTY SURVEY. CLARK ENGINEERING SURVEYED MANHOLES, DROP INLETS, AND SEWER VALVES IN NOVEMBER OF 2012. SEWER MAINS WERE DRAWN USING INFORMATION FROM THE AS-BUILT "WESTPORT WASTEWATER TREATMENT FACILITY PLANT" PLANS. SEWER MAINS ARE TO BE CONSIDERED APPROXIMATE ONLY.

PLOTTED BY: TRENT PLOTTED ON: 7/26/2013 8:28 AM

A12118

CLARK ENGINEERING CORPORATION
2301 8th Ave. NE, Suite 125
P.O. Box 20
Aberdeen, SD 57401
(605) 225-3494

#	REVISIONS	DATE	BY	DRAWN BY:	CHECKED BY:	PROJECT:	SHEET DESCRIPTION:	DATE:	SHEET
				JLS	MDG	WESTPORT CITY MAP WATER, SANITARY, STORM SEWER WESTPORT, SD	SANITARY AND STORM SEWER	11-15-12	1

Z:\2012 PROJECTS\12119 WESTPORT WASTEWATER TREATMENT FACILITY\REPORT\CADD DRAWINGS\WESTPORT BASEMAP WITH MAINS JLS.DWG

ATTACHMENT D

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

October 13, 2011

Larry Huettl
President, Westport Sanitary District
PO Box 18
Westport, SD 57481

RE: Surface Water Discharge Compliance Inspection (SWD Permit Number: SDG826441)

Dear Mr. Huettl:

The South Dakota Department of Environment and Natural Resources conducted a Surface Water Discharge Compliance Inspection at the sanitary district's wastewater treatment facility on September 8, 2011. I appreciate Mark Van Dover's time and cooperation in supplying the requested information.

I have attached an inspection summary and a copy of the inspection report. Please pay special attention to the Inspection Summary tables and implement the required corrective actions as soon as possible. All corrective actions taken will be reviewed during our next inspection at your facility. **Within 30 days of receipt of this report, please submit a summary of the corrective actions taken to the department at the address listed in the letterhead.**

Thank you for your continued efforts to protect the environment and natural resources of South Dakota. Please review this report for accuracy, and respond within thirty days with any needed corrections. If you have any questions about this letter or the inspection reports, please contact me at (605) 773-3351.

Sincerely,

Tina Piroutek
Natural Resources Project Engineer
Surface Water Quality Program
Enclosures

cc: Mark Van Dover, Trustee
Seth Draper, EPA Region 8, 8ENF-W-NP
SWD File - Pierre

INSPECTION SUMMARY

Facility: Westport Sanitary District Wastewater Treatment Facility

SWD Permit: SDG826441

Inspection Date: September 8, 2011

The following comments detail violations of the permit that were identified during the inspection. Corrective actions for each violation are ***required*** for the sanitary district to come into compliance with its surface water discharge permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The operator reported that sewer has backed up into a home during flooding. The sanitary district also did not submit written notifications of the 2009 lift station bypasses.	All discharge and/or overflows, including sewer back-ups and bypassed, must be monitored, reported, and sampled according to the requirements in your SWD permit.

The following comments and corrective actions are ***recommended*** and are items that will improve the operation of your facility.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
A water balance determined that the sanitary district does not have enough capacity to remain total retention.	The sanitary district should begin taking steps to upgrade the system to ensure proper treatment of the wastewater now and into the future.
The lift station does not have an alarm system. ***This was mentioned in the previous inspection report.***	An alarm system is designed to notify the sanitary district in case of power outages or pump failure and plays a key role in preventing sewer backups in to basements. The sanitary district should consider installing a working alarm system at the lift station.
Emergency procedures have not been established in the case of a major storm event, a sewer main break, or a chemical release into the sewer system. ***This was mentioned in the previous inspection.***	The sanitary district may wish to consider establishing written emergency procedures to ensure city staff is prepared to address emergencies that may arise during the operation of the wastewater collection and treatment system.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
The current sewer use fees are $240/year ($20/month) for each hookup. ***A similar comment was mentioned in the previous inspection.***	The department recommends that the sanitary district review its wastewater rates and give serious consideration to raising them. Several communities are facing upgrades, rehabilitation, or new construction. The costs of these projects are typically very large and cannot be accomplished without the community leaders having the foresight to set appropriate wastewater rates to cover these costs as well as the operation and maintenance costs. To avoid a large one-time increase, the community may want to consider annual increases to the sewer rates over a period of several years. If your community is confronting a large project, you may wish to contact your local planning district to discuss appropriate rates and the available funding sources for your project.
The facility needs a warning sign near the entrance of the facility.	The requirement for warning signs is one sign every 500 feet around the pond, starting at the gate, with at least one sign on each side.
The stabilization ponds do not have depth indicators. ***This was mentioned during the previous inspection.***	Pond depth indicators should be installed in each cell, with readings recorded during each inspection. These records will be helpful in determining flow to the ponds and aid in maintaining the proper operating depths in the ponds at all times.
There are some weeds and tall grasses growing on the dikes. ***This was mentioned in the previous inspection report.***	This unwanted vegetation needs to be eliminated to prevent dike damage from erosion and the root systems of these plants. This vegetation also tends to inhibit the air action on the ponds, which in turn inhibits the biological action necessary to treat the wastes and keep odors to a minimum. Once the weeds are eliminated, the pond site should be reseeded with an appropriate grass.
Vegetation is growing in cell #2.	In order for your treatment ponds to operate properly, the rush and cattail growth in the ponds should be eliminated by spraying and/or cutting to prevent erosion/seepage damage to the dikes and attracting rodents.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
The sanitary district has not implemented a regular sewer line cleaning schedule. ***This was mentioned in the previous inspection report.***	The department recommends that the sanitary district develop a regular sewer line cleaning schedule. Regular cleaning will prevent sewer back-ups and will help identify problems in the collection system.
Muskrats have seen in the area.	Burrowing rodents can do extensive damage in just a short period of time resulting in both operation and maintenance problems, and a major expense to the sanitary district for repairs. Contact your local Game, Fish, and Parks conservation officer for information on how to remove rodents from the stabilization pond area.
We would like to encourage you to give Mr. Van Dover or another representative of Westport Sanitary District the opportunity to attend the wastewater training courses sponsored by the state to upgrade skills and share knowledge concerning the operation and maintenance of municipal wastewater systems.	For more information as to dates and locations of upcoming courses in your area, contact South Dakota Association of Rural Water Systems, under contract with DENR, at 203 Center Street W., Madison, SD 57042. Phone: (605) 556-7219. Website: http://www.sdarws.com.

NO DISCHARGE INSPECTION CHECKLIST

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

I. GENERAL INFORMATION

Name Westport Sanitary District Wastewater Treatment Facility

Location NW ¼ of Sec 13, T125N, R64W

SWD Permit No. SDG826441

Contact Person / Title Mark Van Dover, Trustee **Phone Number** (605) 216-5311

Responsible Party/Title Larry Huettl, Board President **Phone Number** (605) 229-0477

Persons present during the inspection:

Name	Title / Phone Number	Affiliation
Mark Van Dover	Trustee/ (605) 216-5311	Westport
Tina Piroutek	Natural Resources Project Engineer / (605) 773-3351	SDDENR

Mailing Address PO Box 18, Westport, SD 57481

Inspection Date September 8, 2011 **Last Inspection Date** April 26, 2006

Entrance Time 4:30 pm **Exit Time** 5:30 pm

Permit Effective Date July 1, 2009 **Permit Expiration Date** March 31, 2011

Type of "No Discharge" Facility:

☒ Stabilization Ponds Only ☐ Other: _____

Design Population Equivalent ~150-175 **Average Design Flow** 0.0091 MGD

Present Population Served 133 (2010 census)

Date Facility Began Operation 1982 **Dates of Facility Upgrades** None

Industries Served by Facility (list names of industries) None

Facility Description: The WWTF consists of a gravity flow collection system with one main lift station that pumps the wastewater to a two cell stabilization pond system, Cell #1 (0.6 acres) and Cell #2 (1.7 acres). The stabilization ponds can be operated in parallel or in series.

For office use only: *OMA* Yes ☐ No ☒ *OME* Yes ☐ No ☒ *SEV* Yes ☐ No ☒ *ENF* Yes ☐ No ☒

II. PERMIT VERIFICATION

	Yes	No	N/A
1. A current copy of the permit is on site.	X		
2. Operator is aware of permit conditions (especially unauthorized release procedures).	X		
3. O&M manuals for the treatment facility and the lift stations are available.			X
4. Facility is as described in permit. If no, what is different?	X		
5. Facility, address and contact information is correct in the SWD Database?		X	
6. Facility, address and contact information is correct in the ICIS Database?		X	
5. Have there been any new, different, or increased loadings to the WWTF since the last inspection? If yes, describe. ***Increased due to inflow/infiltration (I/I)***	X		

Comments: *Larry Huettl was added as the DMR cognizant official and the mailing address was updated in both the database and ICIS.*

III. RECORDKEEPING AND REPORTING EVALUATION

	Yes	No	N/A
1. An inspection notebook is maintained for the treatment facility.	X		
2. A notebook is maintained for lift station inspections, and/or hour meter readings?	X		
3. Discharge Monitoring Reports have been submitted as required (for irrigation facilities only).			X
4. Information is maintained for the required 3-year period.	X		

If overflows occurred from this facility, the information from questions 5-7 should be entered in the SSO Database.

	Yes	No	N/A
5. Facility has experienced an emergency release, such as overflows (pond or sanitary sewer) or bypasses (internal, collection system, total). If yes, describe the release, including dates, total volumes, and receiving waters: ***See comments***	X		
6. DENR was notified of any emergency releases (treated and/or untreated). If no, why not?	X		
7. Samples were collected for all emergency releases/bypasses. If yes, list sampling results in the following table. If no, why not?	X		

Comments: *Copy of the permit and all information for the past 3-years was available during the inspection. The district had to bypass from the main lift station due to high flows in March 2009. DENR was informed verbally of the discharge and that samples were taken. The database and the file do not have any information of when the discharge stopped or any sample results.*

IV. FACILITY PROCEDURES REVIEW

	Yes	No	N/A
1. A water balance has been done for the facility. Describe the results. ***See below.***	X		
2. Written emergency procedures are established (in the event of a major storm event, a chemical release into the sewer system, a sewer main break, etc.)		X	
3. A vulnerability assessment has been performed.		X	
4. Modifications to the facility have been made since the last inspection. Describe the modifications: ***See comments***	X		
5. Facility can be bypassed (internal, collection system, total). Describe bypass procedures:		X	
6. Sludge has been disposed of at this facility. If yes, describe disposal procedures:		X	
7. Hauled waste (septage) or industrial waste is accepted at this facility. If yes, list contact information:		X	
8. Chemicals or enzymes are added to the wastewater. If yes, list products:		X	
9. The facility has experienced problems with industrial or hauled wastes. If yes, explain:			X
10 Does the facility have sampling kits in case of a discharge or SSO?	X		

Comments: *A water balance was done on the facility and it showed that the facility does not have enough capacity for total retention (See Attachment 2 for water balance). The facility has upgraded the lift station by moving the controls out of the drywell of the lift station and installing a crane to lift the lid to the wetwell. The overflow pipe at the wastewater lagoons was plugged.*

V. COMPLIANCE SCHEDULE STATUS REVIEW

	Yes	No	N/A
1. Is the facility subject to a compliance schedule either in its permit or in an enforcement action? If yes, note date and type of enforcement action.		X	
2. List milestones that remain in the schedule:			
3. Facility has missed milestone dates, but will still meet the final compliance date.			X

Comments: *Facility is not subject to a compliance schedule.*

VI. PERSONNEL AND BUDGET REVIEW

Number of Personnel: 2

Certification	Class I	Class II	Class III	Class IV
Treatment				
Collection				
State certification requirements (if required)	***None Required***			

Budget:

Yearly expenditures for the facility. ***$ ~$90/ month*** Residential Sewer Use Fee ***$ 240/year***

Yearly revenue for the facility. ***$ ~2400*** Commercial Sewer Use Fee ***$ none***

Describe any wastewater projects planned during the next three years. ***New generator***

Describe measures taken to raise funds for the project(s). ***Community fund, county taxes, and sewer use fees.***

Comments: *Facility has spent $24,000 on upgrades.*

VII. COLLECTION SYSTEM REVIEW

Piping and Manholes

Type of Collection System: [ ] Combined [ ] Separate [ ] Both

[X] Other (explain): ***Sanitary only***

	Yes	No	N/A
1. A routine sewer-cleaning schedule is maintained. If yes, what is the schedule and what type of equipment is used?		X	
2. Sewer backups into basements occur during high flows. If yes, explain: ***See below***	X		
3. The community has a sump pump ordinance. If yes, how is it enforced?		X	
4. Testing for inflow/infiltration sources has been conducted since the last inspection. If yes, describe testing and corrective actions taken to fix problems:		X	

Comments: *The operator stated that in 2008 with the flooding that the sewer had backed up into a house. This was not reported to DENR.*

Lift Stations

Item	Comments
Number of lift stations	*1*
Type of lift stations (wetwell/drywell or submersible)	***Wetwell/drywell***
List areas served	***Whole town***
Inspection frequency	***Weekly***
Condition of lift stations	***Good***
Alternative power source available for each lift station	***Generator***
Wetwell baskets (quantity)	*1*
Cleaning schedule	***quarterly***
Bar screens (quantity)	***None***
Cleaning schedule	***N/A***
Screening disposal method	***Disposed in the dumpster***
Dehumidifier working properly (if applicable)	***Yes***
Ventilation system working properly (if applicable)	***Yes***
Type of alarm system	***No Alarm***
Alarm system working properly	***N/A***
Lift station have hour meters	***Yes***
Hour meters are logged in an inspection notebook	***Yes***
Pump ratings	***7.5 Hp***
Pump calibration schedule	***None***

Comments: *The district has done several upgrades to the lift station since the last inspection. The control panel was moved outside of the drywell for easier access and to avoid confined spaces as much as possible. A crane was installed to lift the wetwell lid.*

VIII. TREATMENT PROCESS REVIEW

Stabilization Ponds

Item	Comments
Inspection frequency	*Weekly*
Weeds and/or trees growing on the dikes	*Some vegetation.*
Vegetation growing in the ponds	*Grasses in cell 2*
Pond dikes protected from erosion with riprap	*No*
Pond seepage surfacing reported	*None*
Dike structure failure (sloughing and/or sagging)	*No*
If aerators are used, number per cell	*None*
Aerator information and comments	*N/A*
Condition of fencing	*good*
All access gates are kept locked	*Yes*
Signs legible and properly located	*Facility needs a sign near the entrance to the facility.*
Facility accessible in all weather conditions	*Difficult during flooding*
Evidence of burrowing animals	*Muskrats have been seen in the area*
Evidence of grazing animals	*None*
Odor problem (except seasonal turnover)	*None*
Inter-pond piping valves are working and used	*There is an overflow pipe between the cells*
Flow measurement (weir, flume, etc.)	*None*
Depth indicator(s)	*None*
Effluent destination	*Elm River*
Discharge structure (valve control, overflow, etc.)	*None*
Latest discharge (date)	*None*
Duration of discharge	*N/A*
Cells operated in series or parallel	*Parallel*

Cell information

	Cell #1	Cell #2
Maximum operation depth (feet)	*6 ft.*	*6 ft.*
Current operating depth (feet)	*4.5 ft.*	*4.5 ft.*
Minimum operating depth (feet)	*2 ft.*	*2 ft.*
Surface area at maximum depth (acres)	*0.6 acres*	*1.7 acres*

Comments: *Pond and operating depths were estimated by the operator. The lagoons are located on a hill. The main access road to the lagoons is often flooded in the spring as it is near Elm Creek. Some vegetative growth in Cell 2 (the north cell). The overflow discharge pipe from cell 2 has been plugged since the last inspection.*

Attachment 1- Inspection Pictures

Picture 1: Cell 1. Look towards the southwest from the northeast corner.

Picture 2: Cell 2. Looking towards the northwest from the southeast corner.

Picture 3: The plug installed since the last inspection to cap the overflow discharge pipe.

Attachment 2- Water Balance

	Acres	square ft.
Primary pond size	2.3	100188
Secondary pond size		0
		0
Total Pond Size	2.3	100188
	No. People	
Population	133	
Average inflow	75	
	gal/day	
Inflow		9975
	in/yr	gal/day
Precipitation	20	3422
	in/yr	gal/day
Evaporation	33	5646
Allowable Seepage	in/day	gal/day
Primary Pond	0.0625	3903
Secondary Pond	0.125	0

Inflow IS NOT <	Seepage + Evaporation - Precipitation
9975	6127

This facility does NOT have enough capacity to be run as a total retention facility.

Population from the 2010 U.S. Census.

Precipitation data from "Climatography of the United States No. 81", http://hurricane.ncdc.noaa.gov/climatenormals/clim81/SDnorm.pdf

Evaporation data from U.S. Weather Bureau Technical Paper No. 37.

Surface Water Discharge Compliance Inspection Report

Section A: National Data System Coding

Transaction Code	Permit No.	mm/dd/yy	Insp. Type	Inspector	Fac. Type
N 5	*SDG826441*	*09/06/11*	*C*	*S*	*1*

Remarks:

Inspection Work Days	Facility Evaluation Rating	BI	QA	Reserved	Reserved
1.0	*2*	N	N		

Section B: Facility Data

Name and Location of Facility (*For Industrial Users include POTW name and SWD permit number*) *Westport Sanitary District Wastewater Treatment Facility, NW ¼ of Sec 13, T125N, R64W*	Entry Time: 4:30 pm	Permit Eff. Date: 07/01/09
Name of On-Site Representative(s)/ Title/ Phone and Fax Number Mark Van Dover, Trustee, (605) 216-5311	Exit Time: 5:30 pm	Permit Exp. Date 03/31/11
Name and Address of Responsible Official/Title/Phone and Fax Number *Larry Huettl, Board Chairman, PO Box 18, Warner, SD 57481, (605) 229-0477* Contacted? No	Other Facility Data	

Section C: Areas Evaluated During Inspection
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

S	Permit	N	Flow Measurement	S	O & M	M	CSO/SSO
M	Records/Reports	S	Self-Monitoring	N	Sludge Disposal	N	PP
S	Facility Site Review	N	Compliance Schedule	N	Industrial Users	N	Multimedia
M	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other

Section D: Summary of Findings/Comments (*Attach additional sheets if necessary*)

1. The sanitary district has not followed all reporting requirements for backups and bypasses as required by their permit.
2. A water balance indicated that the sanitary district does not have enough capacity to be total retention.
3. The sanitary district should consider establishing emergency procedures.
4. The sanitary district should consider raising sewer use rates.
5. There should be a warning sign by the entrance gate.
6. The stabilization ponds do not have depth indicators.
7. Weeds and tall grasses are growing on the dikes.
8. Vegetation is growing in cell 2.
9. The sanitary district should implement a routine cleaning schedule.
10. Burrowing animals should be removed from the treatment facility area.
11. Encourage a representative to receive additional wastewater training.

Name of Inspector(s)	Signature	Affiliation / Phone	Date
Tina Piroutek	Tina Piroutek	*SDDENR / (605) 773-3351*	10/13/2011

Name of Reviewer	Signature	Affiliation / Phone	Date
Kelli D. Buscher, P.E.	Kelli Buscher	*SDDENR / (605) 773-3351*	10/13/2011

INSTRUCTIONS FOR SURFACE WATER DISCHARGE COMPLIANCE INSPECTION REPORT

SECTION A: NATIONAL DATA SYSTEM CODING

Transaction Code: Use N, C or D for New, Change or Delete. All inspections will be New (N) unless there is an error in the data entered.

Permit No.: SWD Permit Number.

Inspection Date: Use month/day/year format.

Inspection Type: Uses the following codes to describe the type of inspection:

A-Performance Audit
B-Biomonitoring
C-Compliance Evaluation
D-Diagnostic
E-Corps of Engrs Inspection
F-Pretreatment Follow-up
G-Pretreatment Audit
I-Industrial User (IU)
L-Enforcement Case Support
M-Multimedia
P-Pretreatment Compliance Inspection
R-Reconnaissance Inspection
S-Compliance Sampling
U-IU Inspection with Pretreatment Audit
X-Toxics Inspection
Z-Biosolids
2 IU Sampling Inspection
3 IU Non-Sampling Insp
4 IU Toxics Inspection
5 IU Sampling Insp w/Prt
6 IU Non-Samp Insp w/Prt
7 IU Toxics w/Prt
%-SSO Sampling Insp
& -SSO Non-Sampling Insp
# -CSO Sampling Insp
$ - CSO Non-Sampling Insp

Inspector Code: Use following codes to describe the lead agency:

C-Contractor or Other (specify)
E-Corps of Engineers
J-Joint EPA/State - EPA Lead
N-NEIC Inspectors
R-EPA Regional inspector
S-State Inspector
T-Joint State/EPA - State Lead

Facility Type: Use following codes to describe the facility:

1-Municipal - Publicly Owned Treatment Works (POTW) with SIC code 4952.
2-Industrial - Other than municipal, agricultural and Federal facilities.
3-Agricultural - Facilities with SIC 0111 to 0971.
4-Federal - Facilities identified as Federal by the EPA Regional Office.

Remarks: Columns for remarks at discretion of the Inspector.

Inspection Work Days: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection and submit a QA reviewed report of findings. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

Facility Evaluation Rating: Evaluate the quality of the facility self monitoring program using scale of 1 to 5, with a 5 being a very reliable program, a 3 being satisfactory and a 1 being a very unreliable program.

Biomonitoring Information: Enter D for static testing; F for flow through testing; or N for no biomonitoring.

Quality Assurance Data Inspection: Enter Q if inspection was a follow-up on QA sample results. Enter N otherwise.

SECTION B: FACILITY DATA

This section is self-explanatory, except for *Other Facility Data*, which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record).

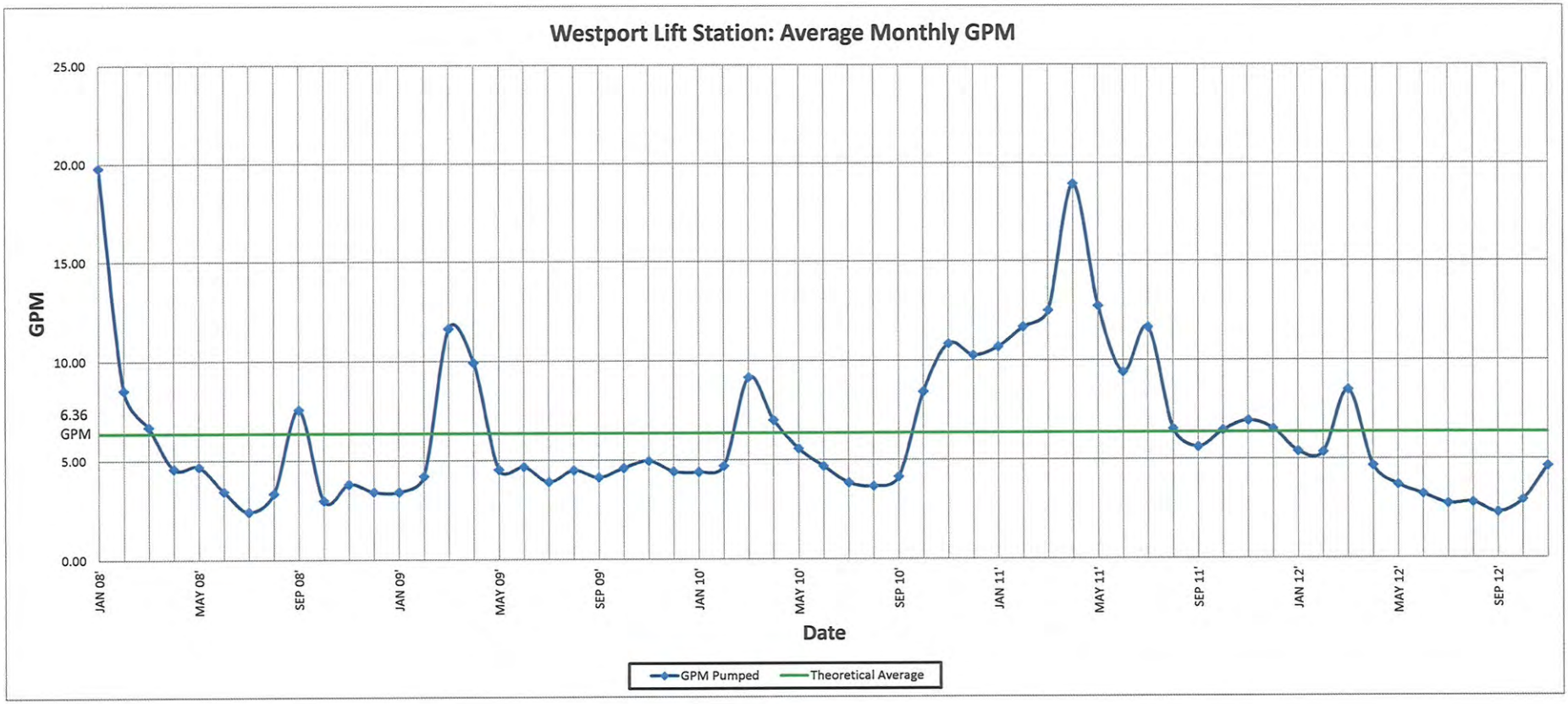
SECTION C: AREAS EVALUATED DURING INSPECTION

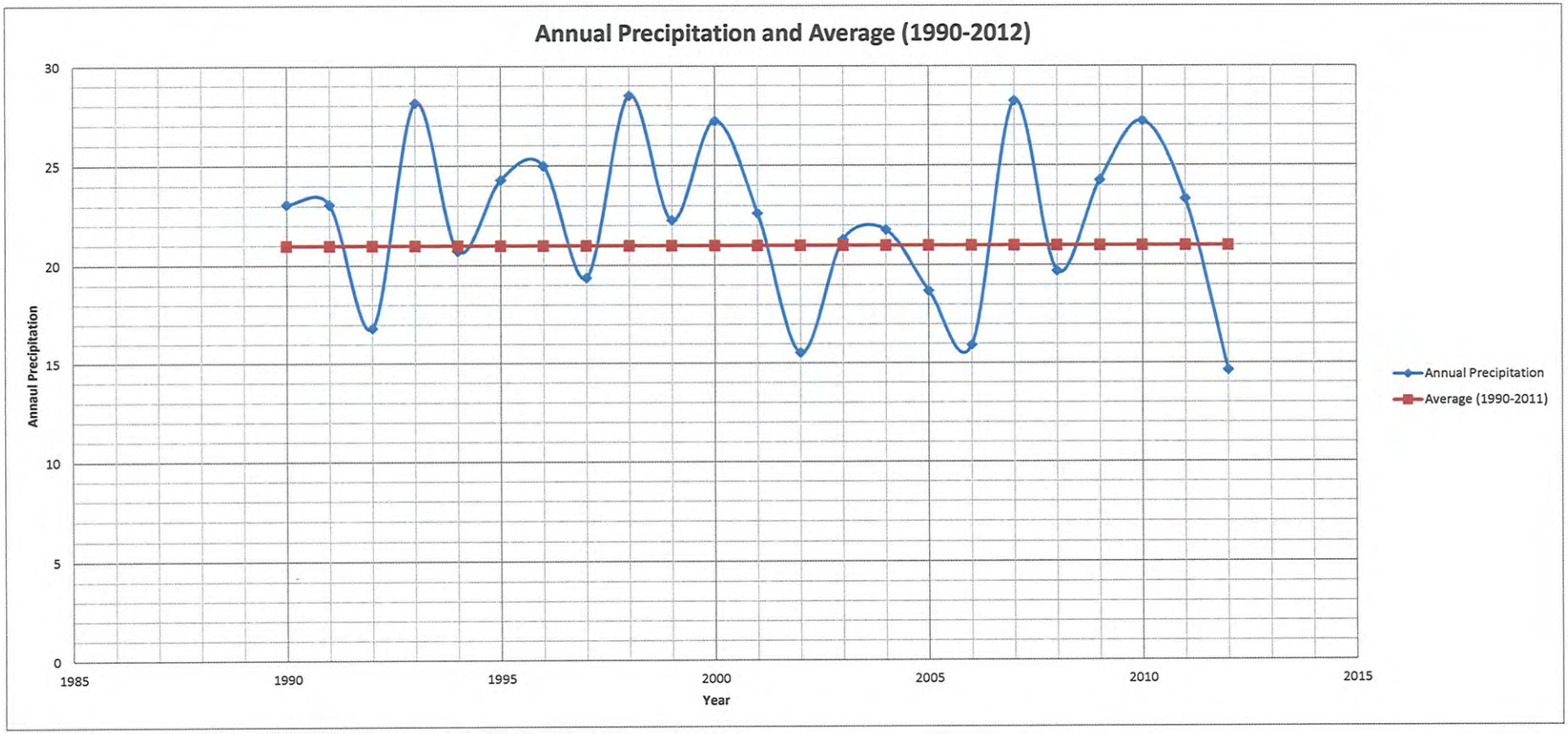
Indicate findings (S, M, U or N) in the appropriate line. Use section D and additional sheets as need to explain findings in a brief narrative when appropriate. The heading marked *Multimedia* may indicate medias such as CAA, RCRA, and TSCA. The heading marked "Other" may be used to note any additional concerns, such as SPCC, BMPs, and concerns that are not covered elsewhere.

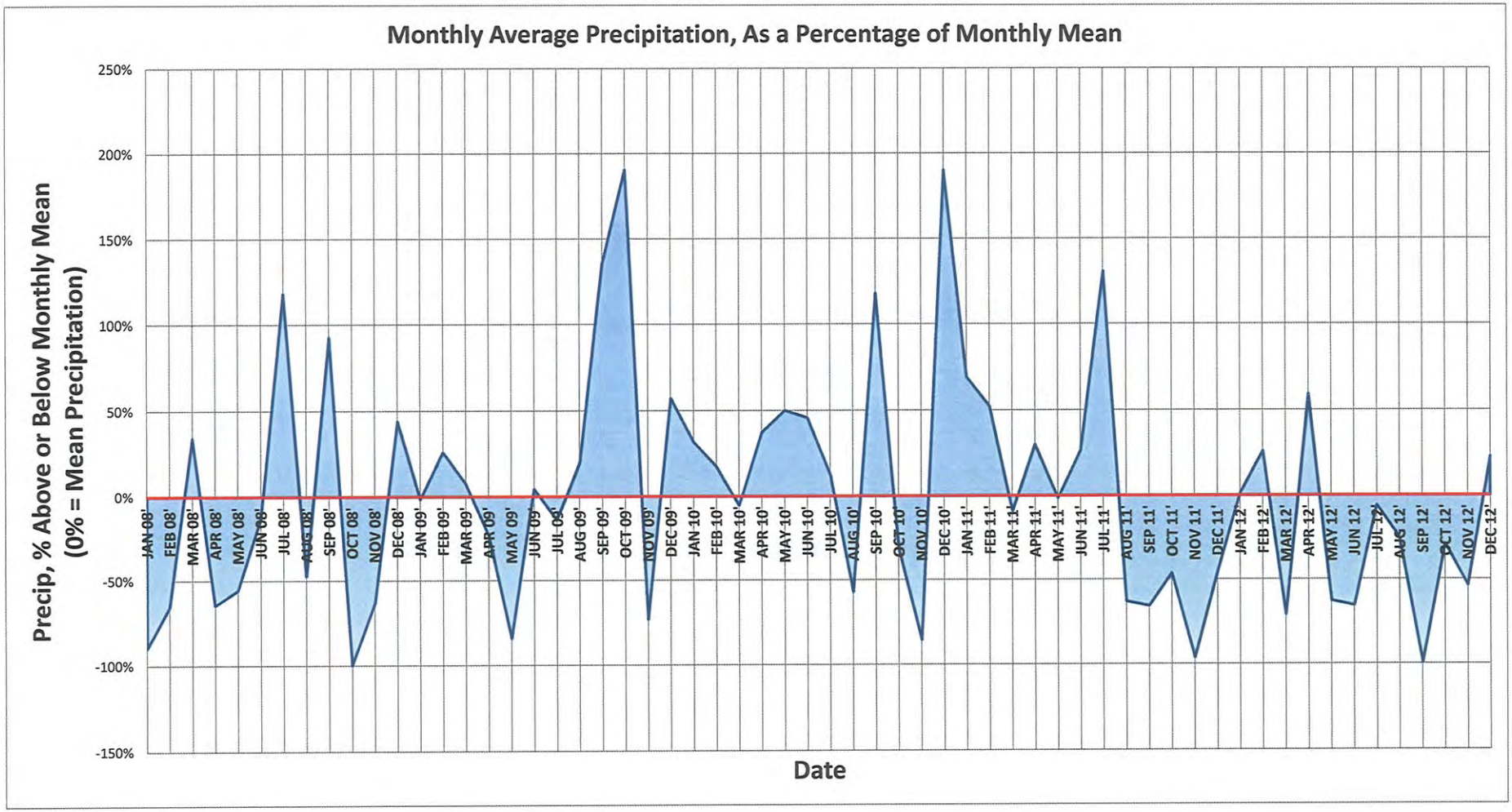
SECTION D: SUMMARY OF FINDINGS/COMMENTS

Briefly summarize the inspection findings along with referencing any attachments such as checklists from NPDES inspection manuals, pretreatment guidance documents and monitoring results.

ATTACHMENT E


Westport Lift Station: Average Monthly GPM
GPM
25.00
20.00
15.00
10.00
6.36
GPM
5.00
0.00
JAN 08'
MAY 08'
SEP 08'
JAN 09'
MAY 09'
SEP 09'
JAN 10'
MAY 10'
SEP 10'
JAN 11'
MAY 11'
SEP 11'
JAN 12'
MAY 12'
SEP 12'
Date
GPM Pumped
Theoretical Average


Annual Precipitation and Average (1990-2012)
Annaul Precipitation
30
25
20
15
10
5
0
1985
1990
1995
2000
2005
2010
2015
Year
Annual Precipitation
Average (1990-2011)


Monthly Average Precipitation, As a Percentage of Monthly Mean
Precip, % Above or Below Monthly Mean
(0% = Mean Precipitation)
250%
200%
150%
100%
50%
0%
-50%
-100%
-150%
JAN 08'
FEB 08'
MAR 08'
APR 08'
MAY 08'
JUN 08'
JUL 08'
AUG 08'
SEP 08'
OCT 08'
NOV 08'
DEC 08'
JAN 09'
FEB 09'
MAR 09'
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MAY 09'
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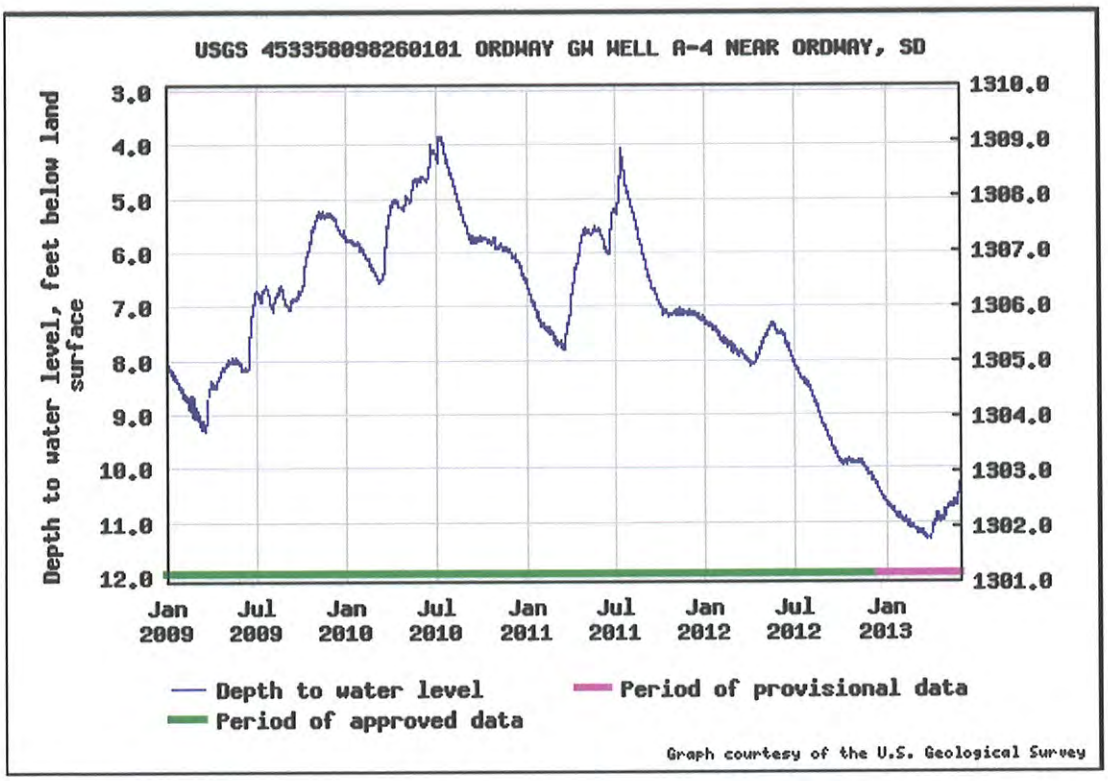
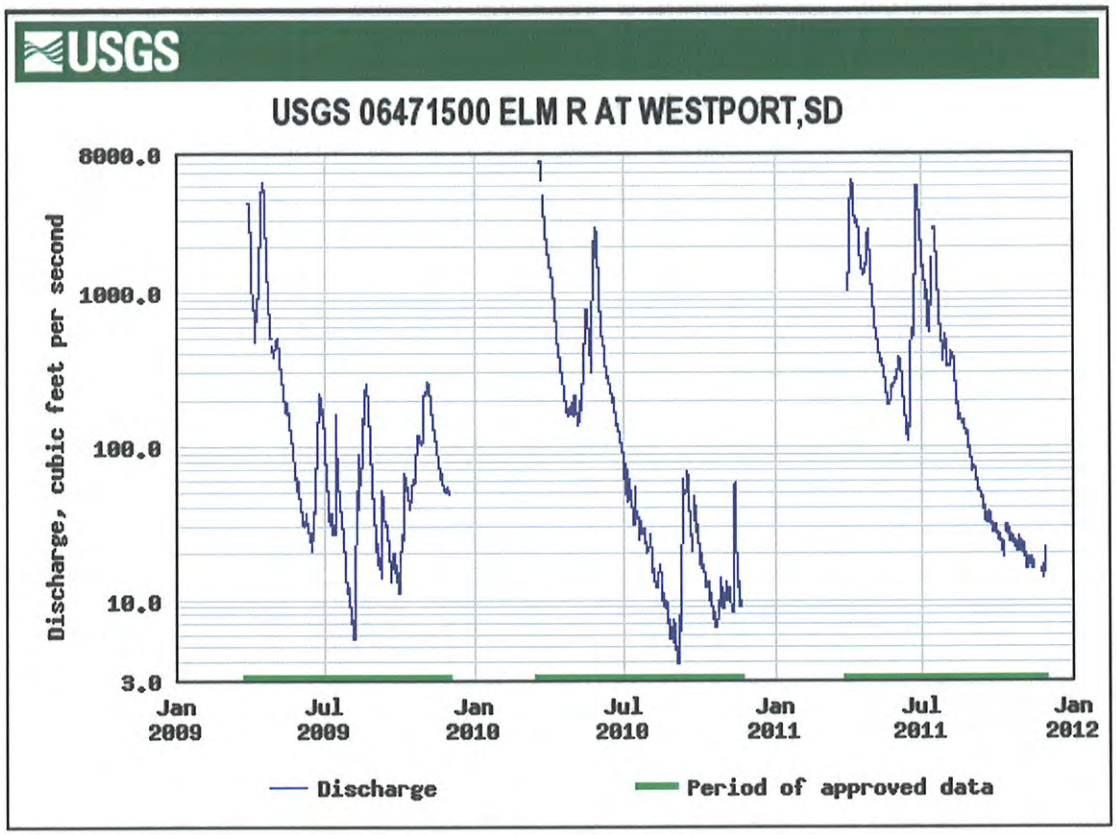
NOV 12'
DEC 12'
Date

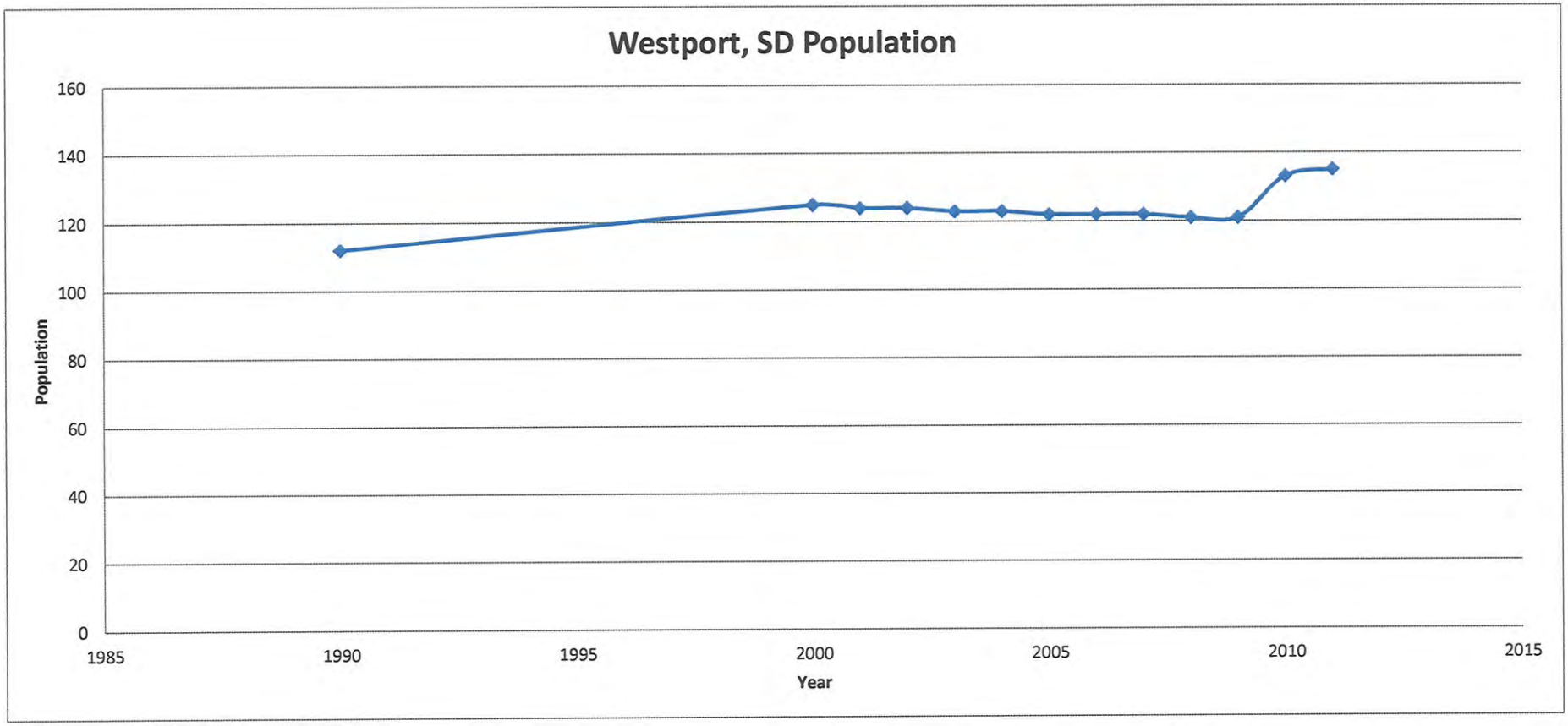
ATTACHMENT F


USGS 453358098260101 ORDWAY GW WELL A-4 NEAR ORDWAY, SD
Depth to water level, feet below land surface
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
1310.0
1309.0
1308.0
1307.0
1306.0
1305.0
1304.0
1303.0
1302.0
1301.0
Jan 2009
Jul 2009
Jan 2010
Jul 2010
Jan 2011
Jul 2011
Jan 2012
Jul 2012
Jan 2013
Depth to water level
Period of provisional data
Period of approved data
Graph courtesy of the U.S. Geological Survey

ATTACHMENT G


USGS
USGS 06471500 ELM R AT WESTPORT,SD
Discharge, cubic feet per second
8000.0
1000.0
100.0
10.0
3.0
Jan 2009
Jul 2009
Jan 2010
Jul 2010
Jan 2011
Jul 2011
Jan 2012
Discharge
Period of approved data

ATTACHMENT H


Westport, SD Population
160
140
120
100
80
60
40
20
0
Population
1985
1990
1995
2000
2005
2010
2015
Year

ATTACHMENT I

CLARK
ENGINEERING CORPORATION

OPINION OF PROBABLE COST

Project: Westport Wastewater Engineering Study
Date: 6/12/13
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for replacing the existing lift station with a duplex submersible liftstation. This estimate also calls for the installation of a new standby generator as well as a new air-release valve.

NO.	ITEM	QUANTITY		UNIT PRICE		TOTAL
1	MOBILIZATION	1	LS	$ 17,600.00	$	17,600.00
2	REMOVE EXISTING STRUCTURE	1	LS	$ 15,000.00	$	15,000.00
3	F&I DUPLEX SUBMERSIBLE LIFTSTATION	1	EA	$ 125,000.00	$	125,000.00
4	REMOVE/REPLACE AIR-RELEASE VALVE	1	EA	$ 1,000.00	$	1,000.00
5	ALTERNATE STANDBY GENERATOR - BID ITEM	1	EA	$ 35,000.00	$	35,000.00

10% CONSTRUCTION CONTINGENCIES	$	19,400.00
SUBTOTAL: PROJECT CONSTRUCTION		$213,000.00
SURVEY & DESIGN ENGINEERING		$15,000.00
CONSTRUCTION ENGINEERING		$15,000.00
TOTAL OPINION OF PROBABLE COSTS		**$243,000.00**

ATTACHMENT J

CLARK
ENGINEERING CORPORATION

OPINION OF PROBABLE COST

Project: Westport Drainage Study
Date: 12/19/2012
Location: Westport, SD
Prepared: Clark Engineering

This construction cost estimate is for proposed storm sewer addition to the city of Westport.

Assumptions:

NO.	ITEM	QUANTITY		UNIT PRICE	TOTAL
1	MOBILIZATION	1	LS	$7,000.00	$7,000.00
2	TOPSOIL & RESTORATION	1.05	AC	$10,000.00	$10,500.00
3	24" HDPE STORM SEWER	1520	LF	$40.00	$60,800.00
4	FLARED END, W/ RODENT GUARD	1	EA	$2,000.00	$2,000.00
5	KNIFE VALVE	1	EA	$2,000.00	$2,000.00
6	MANHOLES/INLETS	3	EA	$4,000.00	$12,000.00
7	RIPRAP	22.5	TON	$40.00	$900.00

15% CONSTRUCTION CONTINGENCIES	$14,280.00
SUBTOTAL: PROJECT CONSTRUCTION	$109,480.00
SURVEY & DESIGN ENGINEERING	$11,000.00
CONSTRUCTION ENGINEERING	$11,000.00
TOTAL OPINION OF PROBABLE COSTS	**$131,480.00**

ATTACHMENT K

CLARK
ENGINEERING CORPORATION

OPINION OF PROBABLE COST

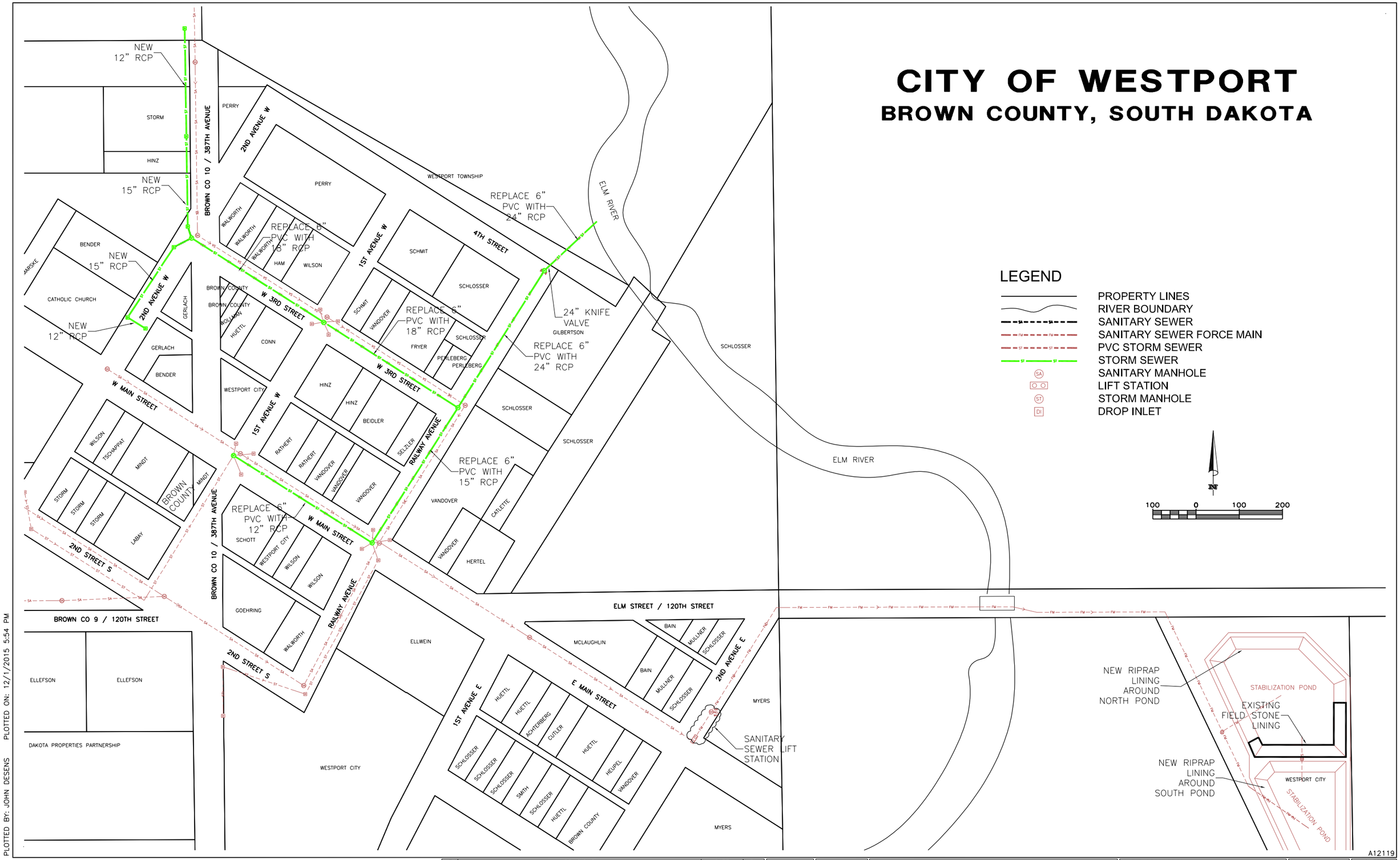
Project: Westport Wastewater Engineering Study
Date: 7/12/13
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for adding an additional 1-acre cell to the wastewater ponds for the city of Westport. The depth of the cell was assumed to be 9' total, with a liquid depth of 7'. Riprap was assumed to be 1.5' in thickness and 5' in width around the perimeter of the cell.

NO.	ITEM	QUANTITY		UNIT PRICE	TOTAL
1	MOBILIZATION	1	LS	$ 27,600.00	$ 27,600.00
2	UNCLASSIFIED EXCAVATION	8000	CY	$ 10.00	$ 80,000.00
3	TOPSOIL PLACEMENT	1	CY	$ 125,000.00	$ 125,000.00
4	SEEDING AND RESTORATION	0.3	AC	$ 1,000.00	$ 300.00
5	RIPRAP	465	TON	$ 40.00	$ 18,600.00
6	FENCING	925	LF	$ 34.00	$ 31,450.00
7	PIPING & VALVES	1	LS	$ 20,000.00	$ 20,000.00

15% CONSTRUCTION CONTINGENCIES	$ 45,600.00
SUBTOTAL: PROJECT CONSTRUCTION	$348,550.00
TOTAL OPINION OF CONSTRUCTION COSTS	**$348,550.00**

CITY OF WESTPORT
BROWN COUNTY, SOUTH DAKOTA



PLOTTED BY: JOHN DESENS PLOTTED ON: 12/1/2015 5:54 PM

A12119

CLARK ENGINEERING
2301 8th Ave. NE, Suite 125
P.O. Box 20
Aberdeen, SD 57401
(605) 225-3494

#	REVISIONS	DATE	BY

DRAWN BY:	CHECKED BY:	PROJECT:	SHEET DESCRIPTION:	DATE:	SHEET
KGH	JWD	STORM SEWER, SANITARY LIFT STATION AND STABILIZATION POND IMPROVEMENTS WESTPORT, SOUTH DAKOTA	PROPOSED LAYOUT	12-1-15	1

Z:\2012 PROJECTS\12119 WESTPORT WASTEWATER TREATMENT FACILITY\DESIGN PRELIMINARY\WESTPORT BASEMAP - STORM REVISIONS 11-23-15.DWG

OPINION OF PROBABLE COST

Project: Westport Wastewater Engineering Study
Date: 12/22/15
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for proposed storm sewer addition to the city of Westport.

NO.	ITEM	QUANTITY		UNIT PRICE	TOTAL
1	MOBILIZATION	1	LS	$ 25,000.00	$ 25,000.00
2	TOPSOIL PLACEMENT	70	CY	$ 5.00	$ 350.00
3	SEEDING AND RESTORATION	0.1	AC	$ 1,000.00	$ 100.00
4	F&I 12" RCP STORM SEWER	675	LF	$ 50.00	$ 33,750.00
5	F&I 15" RCP STORM SEWER	846	LF	$ 60.00	$ 50,760.00
6	F&I 18" RCP STORM SEWER	730	LF	$ 65.00	$ 47,450.00
7	F&I 24" RCP STORM SEWER	540	LF	$ 80.00	$ 43,200.00
8	F&I 24" RCP FLARED END w/ RODENT GUARD	1	LF	$ 2,500.00	$ 2,500.00
9	F&I 24" KNIFE VALVE	1	LF	$ 2,500.00	$ 2,500.00
10	F&I DROP INLET	6	EA	$ 3,500.00	$ 21,000.00
11	F&I STORM MANHOLE	6	EA	$ 4,000.00	$ 24,000.00
12	F&I 8" BASE COURSE (STREET RESTORATION)	850	TN	$ 20.00	$ 17,000.00
13	F&I 3" ASPHALT SURFACING	65	TN	$ 120.00	$ 7,800.00

10% CONSTRUCTION CONTINGENCIES	$	27,500.00
SUBTOTAL: PROJECT CONSTRUCTION	$	302,910.00
SURVEY & DESIGN ENGINEERING	$	30,000.00
CONSTRUCTION ENGINEERING	$	22,000.00
TOTAL OPINION OF CONSTRUCTION COSTS	**$**	**354,910.00**

OPINION OF PROBABLE COST

Project: Westport Wastewater Engineering Study
Date: 12/22/15
Location: Westport, SD
Prepared: Clark Engineering

Narrative: This construction estimate is for replacing the existing lift station with a duplex submersible liftstation. This estimate also calls for the installation of a new standby generator as well as a new air-release valve.

NO.	ITEM	QUANTITY		UNIT PRICE		TOTAL
1	MOBILIZATION	1	LS	$ 17,600.00	$	17,600.00
2	REMOVE EXISTING STRUCTURE	1	LS	$ 15,000.00	$	15,000.00
3	F&I DUPLEX SUBMERSIBLE LIFTSTATION	1	EA	$ 125,000.00	$	125,000.00
4	FURNISH SPARE PUMP FOR LIFTSTATION	1	EA	$ 15,000.00	$	15,000.00
5	REMOVE/REPLACE AIR-RELEASE VALVE	1	EA	$ 2,500.00	$	2,500.00
6	ALTERNATE STANDBY GENERATOR - BID ITEM	1	EA	$ 35,000.00	$	35,000.00

10% CONSTRUCTION CONTINGENCIES	$	21,000.00
SUBTOTAL: PROJECT CONSTRUCTION		$231,100.00
SURVEY & DESIGN ENGINEERING		$16,000.00
CONSTRUCTION ENGINEERING		$14,000.00
TOTAL OPINION OF PROBABLE COSTS		**$261,100.00**

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Pierre

Project Title:	Wastewater Treatment Facility Improvements - 2016
Funding Requested:	$3,821,100
Total Project Cost:	$3,821,100
Project Description:	The project includes improvements to the grit removal system, primary clarifier, air piping to the air lift pump station and aeration basins. This will involve replacing the grit mechanisms and controls, primary clarifier mechanisms and weirs, and rerouting the aeration piping. The proposed project also includes modifications to the disinfection process. This will include replacing the existing chlorine disinfection system with ultraviolet disinfection. The project also involves upgrading the aeration basin compressed air piping system by modifying the supply air piping and upgrading the blowers. The wastewater facility control system will be upgraded to accommodate these changes as well as other miscellaneous updates to enhance plant operations.
Alternatives Evaluated:	Grit Removal Rehabilitation Alternatives: 1. No Action Alternative – The current system equipment is wearing out and in need of replacement. Grit removal provides protection of machinery throughout the treatment process and is considered important in the operation and maintenance of that equipment. This alternative was not selected. 2. Vortex Grit Removal Alternative – This alternative replaces the existing equipment with the same equipment currently in place except stainless steel will be used for better corrosion protection. This is the chosen alternative because of the reduced operation and maintenance costs as well as a longer service life of the equipment. 3. Grit Separator Alternative – This alternative replaces the vortex system with a new technology similar to the vortex system. Installing this grit removal system would require the addition of a lift station and major modifications to the grit chamber so it is not the chosen alternative.

Primary Clarifier Rehabilitation Alternatives:

1. No Action Alternative – The current system equipment is badly corroded and needs to be replaced before it fails. This alternative was not selected.
2. Stainless Steel Mechanisms Alternative – The mechanisms and drives will be replaced with stainless steel under this alternative. This is the chosen alternative because of the reduced operation and maintenance costs as well as a longer service life of the equipment.
3. Carbon Steel Mechanisms Alternative – Replace the mechanisms with carbon steel. This alternative has a lower initial cost but was rejected due to the higher maintenance cost and reduced life span due to corrosion.

Compressed Air Pipeline Replacement Alternatives:

1. No Action Alternative – The existing pipe has developed holes and is no longer efficient. This alternative was not selected.
2. Below Ground Piping Alternative – Replace air piping below grade. The existing pipe has developed holes and is no longer efficient. This is the chosen alternative due to the lower cost.
3. Above Ground Piping Alternative – Replace air piping with new stainless steel pipe above grade. This was not chosen due to the higher cost.

Disinfection Alternatives:

1. No Action Alternative – The current system equipment is inadequate to consistently meet permit required treatment.
2. Replace with New Chlorine System Alternative – This alternative replaces the chlorine based disinfection system equipment with the same process currently in place. This was rejected due to the difficulties with the storage and usage of chlorine gas and it's not the least cost alternative.
3. Ultraviolet Disinfection Alternative – This alternative replaces the current chlorine based system with an ultraviolet process. This is the chosen alternative.
4. Ozone Disinfection Alternative – This alternative replaces chlorine based disinfection with ozone. Ozone generation involves high electrical capabilities since ozone would need to be generated on site. This alternative was rejected due to the high cost of

equipment and operation.

Aeration Basin Air Piping Replacement Alternatives:

1. No Action Alternative – The current piping that provides air to the aeration basins is underground and has developed numerous leaks. The system is operational but not efficient. This alternative was not selected.
2. Replace Piping in place with Underground Piping Alternative – This alternative was rejected due to the difficulties in monitoring and repairing leaks.
3. Replace Piping with Above Ground Piping Alternative – This alternative was chosen because it resolves the maintenance issues.

Control System Improvements Alternatives:

1. No Action Alternative – Parts of the current control system are not operational requiring manual review and control of the system. This is inefficient and causes systems to be out of range for periods of time jeopardizing the treatment. This alternative was not selected.
2. Control System Upgrade Alternative – This alternative was chosen so the system can be efficiently operated.

Implementation Schedule: City of Pierre anticipates bidding the project in April 2016 with a project completion date of December 2017.

Service Population: 13,984

Current Domestic Rate: $40.84 per 5,000 gallons usage

Interest Rate: 3% Term: 20 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Pierre would have to establish a surcharge of approximately $3.60. When added to current rate of $40.84/5,000 gallons residents would be paying $44.44/5,000 gallons.

25% Funding Subsidy:	$955,250 subsidy with a loan of $2,865,750.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $2,865,750 would have to establish a surcharge of approximately $2.70 thereby paying a rate $43.54/5,000 gallons.

50% Funding Subsidy:	$1,910,500 subsidy with a loan of $1,910,500.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $1,910,500 Pierre would have to establish a surcharge of approximately $1.80 thereby paying a rate $42.64/5,000 gallons.

75% Funding Subsidy:	$2,865,740 subsidy with a loan of $955,250.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $955,250 Pierre would have to establish a surcharge of approximately $0.90 thereby paying a rate $41.74/5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: ERIC MEINTSMA

FINANCIAL REVIEW COMPLETED BY: DAVID RUHNKE

RECEIVED
MAR 09 2016
Division of Financial
& Technical Assistance

SD EForm - 2127LD V3

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Pierre, South Dakota	Proposed Funding Package
Address: 222 East Dakota PO Box 1253 Pierre, SD 57501	Requested Funding $3,821,100 Local Cash _____
Subapplicant:	Other: _____ _____ Other: _____ _____
DUNS Number: 070745583	Other: _____ _____ TOTAL $3,821,100

Project Title: Pierre WWTF Improvements - 2016

Description:

The improvements planned for this project include improvements for grit removal, primary clarification, air piping to the air lift pump station and aeration basins, as well as modifications to the City's disinfection process. Grit removal improvements include replacement of the vortex grit removal mechanism, grit classifier, and controls. Primary Clarifier improvements include removal and replacement of both primary clarifier mechanisms, baffles, and weirs. Air piping for the air lift pump station will be replaced and rerouted. Air piping to the aeration basins will also be replaced and rerouted. The existing chlorination/dechlorination system and existing chlorine contact tank will be replaced with a new ultraviolet disinfection facility. Other ancillary improvements to the structures and replacement of isolation valves for the influent pumping system are included in the 2016 Amendment to the WWTF Facility Planning document.

The City's plan will be to complete the work in two projects both bid in 2016.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Leon Schochenmaier, City Administrator	Darla Aegert	March 09, 2016
Name & Title of Authorized Signatory (Typed)	Signature For Leon Schochenmaier	Date

Professional Consultants

Application Prepared By: Bradley Palmer

Contact Person: Bradley Palmer

Mailing Address: 222 E. Dakota Ave

City, State, and Zip: Pierre, SD 57501

Telephone Number: 605-773-3067 Fax: 605-773-7406

Email address: Brad.Palmer@ci.pierre.sd.us

Consulting Engineering Firm: Banner Associates, Inc.

Contact Person: Jim Housiaux, PE

Mailing Address: 409 22nd Avenue S. P.O. Box 298

City, State, and Zip: Brookings, South Dakota 57006

Telephone Number: 605-692-6342 Fax: 605-692-5714

Email address: jimh@bannerassociates.com

Legal Counsel's Firm: Riter, Rogers, Wattier & Northrup, LLP

Contact Person: Lindsey Riter-Rapp

Mailing Address: 319 S. Couteau

City, State, and Zip: Pierre, SD 57501

Telephone Number: 605-224-5825 Fax:

Email address: lindsey@riterlaw.com

Bond Counsel's Firm: Meierhenry Sargent LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Ave

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: 605-336-3075 Fax: 605-336-2593

Email address: todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$64,300					$64,300
D. Other						
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$249,400					$249,400
B. Project Inspection Fees	$257,400					$257,400
C. Other						
4. Construction & Improvements	$1,211,100					$1,211,100
5. Equipment	$1,574,200					$1,574,200
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$3,356,400					$3,356,400
10. Contingencies	$464,700					$464,700
11. Total (Lines 9 and 10)	$3,821,100					$3,821,100
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) Clean Water SRF		$3,821,100	
Other (Explain)			
Other (Explain)			
Total		$3,821,100	$3,821,100

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 13,984 2010 13,681 2000 13,883

Top three employers within 30 miles	Number of Employees	Type of Business
SD State Government	2140	State Government
Avera St. Mary's	485	Healthcare
Pierre School District	350	Education

Repayment Information

Interest rate you are applying for: 3% Term: 20

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2010	2015				
Purpose	Plant improvements	Sewer Pipe Lining & Lift Station Impr				
Security Pledged	General Wastewater Revenues	Sales Tax				
Amount	$5,470,000	$986,512				
Maturity Date (mmm/yyyy)	01/2021	12/2025				
Debt Holder	First National Bank in Sioux Falls	Bankwest				
Debt Coverage Requirement	110%					
Avg. Annual Required Payment	$700,000	$73,382				
Outstanding Balance	$3,860,000	$986,512				

Comments:

Bankwest loan was secured for the Menards Development site. Surplus loan funds was allowed for planned/budgeted 2015 Sanitary Improvements that would have been financed with a separate loan. It was more advantageous for the City to utilize the existing financing rather than seeking separate financing. Even though this is secured with sales tax, the portion of funds used for the Wastewater Fund will be paid back by the Wastewater Fund. 18% of the loan total is related to Wastewater. Only Wastewater portion is shown here.

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$2,271,838	$2,269,101	$3,116,015	$2,807,864	$3,004,414	$3,169,532
Surcharge Fees	$369,024	$362,705				$255,500
Other (Explain)	$60,015	$55,777	$1,286,365	$2,292,660	$1,528,440	
Operating Expenses						
Personal Services	($465,846)	($463,411)	($458,498)	($514,462)	($535,041)	($556,442)
Chemical, Material & Supplies	($355,978)	($462,010)	($567,547)	($391,500)	($403,245)	($415,342)
Electric & Other Utilities	($276,000)	($273,990)	($278,309)	($282,250)	($285,855)	($291,572)
Other (Explain)	($1,166,958)	($302,665)	($689,953)	($556,456)	($569,625)	($581,017)
Operating Net Cash	$436,095	$1,185,507	$2,408,073	$3,355,856	$2,739,088	$1,580,659
Nonoperating Cash Flow						
Interest Revenue	$2,247	$1,239	$1,984		$100	$100
Transfers In (Explain)						
Fixed Asset Purchases	($499,701)	($302,526)	($1,219,652)	($330,000)	($402,712)	($468,551)
Transfers Out (Explain)		($15,967)	0	($9,721)	0	0
Principal Debt Payments	($600,000)	($610,000)	($625,000)	($676,048)	($692,414)	($834,294)
Interest Debt Payments	($119,525)	($113,425)	($101,075)	($120,809)	($106,268)	($219,845)
Other (Explain)	$333,104	$35,642	($116,996)	($2,292,660)	($1,528,440)	0
Nonoperating Net Cash	($883,875)	($1,005,037)	($2,060,739)	($3,429,238)	($2,729,734)	($1,522,589)
Increase (Decrease) Cash	($447,780)	$180,470	$347,334	($73,382)	$9,354	$58,070
Beginning Cash Balance	$1,104,208	$656,428	$836,898	$1,184,232	$1,110,850	$1,120,204
Ending Cash Balance	$656,428	$836,898	$1,184,232	$1,110,850	$1,120,204	$1,178,274
Restricted Balance	$554,457	$554,457	$554,457	$554,457	$554,457	$554,457
Unrestricted Balance	$101,971	$282,441	$629,777	$556,393	$565,747	$623,817

Additional Comments (Explanations)

2013 Other Nonoperating Cash Flow includes accrual adjustments of $63,636, grants of $265,000 and rents of $4,468. 2014 & 2015 "other" revenues and expenses include adjustments to convert from accrual to cash. 2016 & 2017 bond proceeds and project expenses are listed under other operating revenue and other non operation cash flow, respectively. 60% of the project is estimated in 2016 and 40% in 2017.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber
$554,457	0	Debt Service Reserve Fund

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$39.25	$40.84	4,110	530 Cubic Feet
Business	$39.25	$40.84	790	580 Cubic Feet
Other:				
Other: Apartments	$37.99	$39.34	1,600	

Are fees based on usage or flat rate? Usage

When is proposed fee scheduled to take effect? January 1, 2016

When did the current fee take effect? January 1, 2015

What was the fee prior to the current rate? $11.80 Customer Charge, $3.17 Consumption

Storm Sewer Projects Only: Does applicant have a separate storm water fee? yes

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Dept. of Corrections	Corrections	1.69%
Ramkota	Hotel & Convention Center	1.11%

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. ☐
- A public hearing held discussing the project and the use of an SRF loan to finance the project. ☐
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. ☐
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. ☐
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. ☐
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. ☐

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	$3,821,100
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$3,821,100

Leon Schochenmaier, City Administrator

Name & Title of Authorized Representative

Durla Hight For Leon Schochenmaier 03/09/2016

Signature of Authorized Representative Date

Certification of Nonpoint Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
VII A	NPS pollution - agricultural activities. Plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. Example BMPs include conservation tillage, nutrient management, and irrigation water management.	_____
VII B	NPS pollution - animal production. Confined animal facilities and grazing. Example BMPs include animal waste storage, animal waste nutrient management, composting, and planned grazing.	_____
VII C	NPS pollution - forestry. Removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for the planting of trees. Example BMPs include pre-harvest planting, streamside buffers, road management, and revegetation of disturbed areas.	_____
VII D	NPS pollution - new or existing development in urban or rural setting. Erosion, sedimentation, and discharge of pollutants (e.g. inadequately treated wastewater, oil grease, road salts, and toxic chemicals) into water resources from construction sites, roads, bridges, parking lots, and buildings. Example BMPs include wet ponds, construction site erosion and sedimentation controls, sand filters, and detention basin retrofit. This category includes only runoff projects in communities without Phase I or Phase II storm water permits.	_____
VII E	NPS pollution - ground water protection. Wellhead and recharge protection areas. Activities attributed to specific causes are included in a later, more specific category.	_____
VII F	NPS pollution - boating and marinas. Poorly flushed waterways, boat maintenance activities, discharge of sewage from boats, and physical alteration of shoreline, wetlands, and aquatic habitat during operation or construction of a marina. Example BMPs include pump out systems and oil containment booms.	_____

Category	Definition	Loan Amount
VII G	NPS pollution - mining and quarrying activities. Example BMPs detention berms and seeding or revegetation.	_____
VII H	NPS pollution - abandoned, idle, and under used industrial sites. All pollution control activities at these sites regardless of activity. Example BMPs include ground water monitoring wells, in situ treatment of contaminated soils and ground water, capping to prevent storm water infiltration, and storage tank activities at brownfields.	_____
VII I	NPS pollution - tanks designed to hold chemicals, gasoline, or petroleum products. Tanks may be located either above or below ground. Example BMPs include spill containment, in situ treatment of contaminated soils and ground water, and upgrade, rehabilitation, or removal of petroleum/chemical storage tanks.	_____
VII J	NPS pollution - sanitary landfills. Example BMPs include leachate collection or on-site treatment, gas collections and control, and capping and closure.	_____
VII K	NPS pollution - channel modification, dams, streambank and shoreline erosion, and wetland or riparian area protection or restoration. Example BMPs include conservation easements, swales or filter strips, shore erosion control, wetland development and restoration, and bank and channel stabilization.	_____
VII L	NPS pollution - rehabilitation or replacement of individual or community sewerage disposal system. Construction of collector sewers to transport wastes to a cluster septic tank or other decentralized facilities. Collection sewers and expansion of existing or construction of new centralized treatment facilities that replace individual or community sewerage disposal system are included on Point Source Category table.	
	TOTAL:	_____

Leon Schochenmaier, City Administrator

Name & Title of Authorized Representative

Carla Height FOR Leon Schochenmaier 03/09/2016

Signature of Authorized Representative

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Leon Schochenmaier, City Administrator

Name & Title of Authorized Representative

Carla Zight For Leon Schochenmaier 03/09/2016

Signature of Authorized Representative Date

☐ I am unable to certify to the above statements. Attached is my explanation

FACILITY PLAN

Pierre Wastewater Treatment Plant
Specific Equipment Replacement Facility Plan

(ATAD's, Aeration Basin Piping, Controls)

Pierre, SD

November 2015

City of PIERRE
on the river • on the move

Submitted by

Banner Associates, Inc.
www.bannerassociates.com

BAI 21693.00.00

BANNER
Engineering | Architecture | Surveying

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SECTION 1: INTRODUCTION, AUTHORIZATION, PURPOSE, AND REPORT ORGANIZATION

1.1. INTRODUCTION, AUTHORIZATION, AND PURPOSE

After the completion of the 2014 Wastewater Treatment Plant System Analysis by Banner Associates, the City of Pierre requested a proposal and agreement for the preparation of a Wastewater Facilities Plan which would address the items identified to be in need of immediate replacement. This Wastewater Facilities Plan is in response to deteriorated pieces of equipment at the Pierre Wastewater Treatment Plant and includes the Autothermal Thermophilic Aerobic Digestion process, leaking compressed air line to the aeration basins and control system modifications. The facilities evaluation will examine alternatives to effectively and reliably replace the equipment to continue to treat the current and projected future flows and loads.

The Wastewater System Facilities Plan will serve as a guide for preparation of capital improvements plans for the wastewater treatment plant for the next several years. The scope of this report will address the following:

- Review of the current Pierre Surface Water Discharge (SWD) and Biosolids Management Permits;
- Preparation of an Environmental Information Document;
- Evaluation of the present conditions and future needs;
- Evaluation and alternative selection for the ATAD equipment, compressed air pipeline serving the aeration basins, and control system modifications; and
- Preparation of a plan for improvements including cost estimates, implementation schedule, and probable impacts on sewer rates.

1.2. ORGANIZATION OF THE REPORT

This report is organized into a total of six sections. The topics covered in each of the sections are summarized as follows:

Section 1	Introduction, Authorization, Purpose, and Report Organization
Section 2	Permit Conditions and Requirements
Section 3	Environmental Information Document
Section 4	Evaluation of Present Conditions and Future Needs
Section 5	Wastewater Treatment Alternatives
Section 6	Recommendations and Capital Improvements Plan

1.3. ABBREVIATIONS

ARSD	Administrative Rules of South Dakota
ATAD	autothermal thermophilic aerobic digestion
BOD_5	Biochemical Oxygen Demand (5-day)
fps	feet per second
gpcd	gallons per capita per day
gpm	gallons per minute
I/I	infiltration and inflow
MGD	million gallons per day
NWI	National Wetlands Inventory
SDDENR	South Dakota Department of Environment & Natural Resources
SWD	surface water discharge
TSS	Total Suspended Solids
VAR	vector attraction reduction
WET	whole effluent toxicity
WWTP	wastewater treatment plant

END OF SECTION 1

SECTION 2: PERMIT CONDITIONS AND REQUIREMENTS

The City of Pierre possesses two permits that are reviewed in this section. They include a Surface Water Discharge (SWD) Permit issued by the State of South Dakota and a Biosolids Management Permit that provides authorization to landfill dispose sludge generated at the Pierre wastewater treatment plant (WWTP).

2.1 SURFACE WATER DISCHARGE PERMIT

The City of Pierre currently possesses a Surface Water Discharge (SWD) Permit from the South Dakota Department of Environmental and Natural Resources (SDDENR) permit number SD0020176. The current discharge permit became effective July 01, 2007 and is in effect until a new one is generated by the SDDENR. This permit was scheduled to expire on December 31, 2011 but was administratively extended by the SDDENR. The current SWD permit authorizes the discharge of wastewater effluent from the Pierre WWTP to Lake Sharpe of the Missouri River (Outfall 001). The current SDDENR SWD permit and associated Statement of Basis for the City of Pierre are presented in Appendix A.

2.1.1 Effluent limits: The City's current permit allows discharges of treated WWTP effluent via pipeline to Lake Sharpe of the Missouri River. The permit requires that the City's WWTP operations personnel perform routine monitoring to verify compliance with various parameters regulated under the permit. The wastewater quality parameters regulated by the permit include biochemical oxygen demand (BOD_5), total suspended solids (TSS), oil and grease, fecal coliforms, total coliforms, total residual chlorine, pH, and acute whole effluent toxicity (WET). The specific permit limits in effect at this time are presented in Table 2-1: Effluent Limitations at the Pierre WWTP.

Table 2-1: Effluent Limitations at the Pierre WWTP

Effluent Characteristic	Effluent Limit		
	30-Day Average [1]	7-Day Average	Daily Maximum
BOD_5, mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
E. coli, no./100 mL [2] (May - September 30)	126	N/A	235
Total Coliforms, no./100mL [3]	5,000	N/A	20,000
Oil and Grease, mg/L	N/A	N/A	1.0
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	N/A	N/A	0.019
Peracetic Acid (PAA), mg/L	N/A	N/A	1.0
The pH of the discharge shall not be less than 6.6 nor greater than 8.3 in any sample.			
There shall be no Acute Whole Effluent Toxicity in the discharge, as measured by the WET test.			
Percentage Removal Requirements (TSS and BOD_5 Limit): In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of thirty (30) consecutive days shall not exceed fifteen (15) percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).			

[1] See Definitions

[2] Escherichia coli organisms from May 1 to September 30 shall not exceed a concentration of 126 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 235 per 100 milliliters in any one sample from May 1 to September 30.

[3] Total Coliform organisms shall not be exceed a MPN of MF of 5,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 20,000 per 100 milliliters in any one sample.

2.1.2 Self-Monitoring Requirements: In addition to the parameters regulated in Table 2-1, the City of Pierre's SWD permit also requires the monitoring and reporting of rate of discharge, influent BOD_5, influent TSS, ammonia-nitrogen, dissolved oxygen, temperature, molybdenum, and the parameters listed in the Administrative Rules of South Dakota (ARSD), Section 74:52:02:42. All

wastewater characteristics that must be monitored and reported under the SWD permit are listed in Table 2-2, as well as their required testing frequency, reporting values, and sample type. These characteristics must be monitored for all discharges, unauthorized releases, and sanitary sewer overflows.

Table 2-2: SWD Permit Self-Monitoring Requirements at the Pierre WWTP

Effluent Characteristic	Frequency	Reporting Values [1]	Sample Type [1]
Rate of Discharge, MGD	Continuous	Daily Maximum; 30-day Average	Instantaneous
pH, Standard Units	Daily	Daily Minimum; Daily Maximum	Instantaneous [2]
Oil and Grease, mg/L [3]	Daily	Presence or absence of sheen; Daily Maximum	Visual/Grab
BOD_5, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
BOD_5, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Total Suspended Solids, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
Total Suspended Solids, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Fecal Coliform, no./100 mL (May 1 - September 30)	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Total Coliform, no./100 mL	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Ammonia-Nitrogen, mg/L (as N) [6]	Weekly	Daily Maximum; 30-day Average	Grab
Total Residual Chlorine, mg/L (Required only if effluent is chlorinated)	Daily	Daily Maximum [7]	Grab
Dissolved Oxygen, mg/L	Weekly	Daily Minimum	Grab
Water Temperature, °C	Weekly	Daily Maximum; 30-day Average	Instantaneous [8]
Percent Removal (TSS and BOD_5)	Monthly	30-day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [9]	Pass/Fail	Grab
Parameters listed in ARSD, Section 74:52:02:42 and Molybdenum	Annually	Actual Results	As Required [10]

[1] See Definitions

[2] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[3] Oil and grease shall be visually monitored during discharge. In the event that an oil sheen or floating oil is observed during discharge, grab samples shall be taken immediately, analyzed and reported.

[4] The percent removal between the influent and effluent values for this parameter shall also be reported.

[5] For total coliforms, if a minimum of five samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. *This sampling protocol for fecal coliforms, only applies if the discharge occurs between May 1 and September 30.*

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[7] EPA considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "0" shall be used for reporting and averaging purposes.

[8] The water temperature of the effluent shall be taken as a field measurement at the time of sampling. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[9] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[10] See Section 2.1 for sampling requirements.

The SWD permit outlines the testing procedure required for the whole effluent toxicity (WET) test for acute toxicity. The City of Pierre is required to conduct this test at least once per calendar quarter, with samples collected on a two day

progression (i.e., if the first quarterly sample is collected on a Wednesday, during the next quarter sampling shall be on a Friday, etc.). The WET test for acute toxicity shall follow the procedure from the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, October 2002, EPA-821-R-02-012, and the "Region VIII EPA NPDES Acute Test Conditions – Static Renewal Whole Effluent Toxicity Test." If conflicts arise, the Region VIII document should be used. The City needs to conduct an acute 96-hour static toxicity test using *Pimephales promelas* (fathead minnows) and an acute 48-hour static toxicity test using *Ceriodaphnia dubia* (daphia). The WWTP effluent is considered to be toxic if 50 percent or more mortality is observed at any effluent concentration for either species. If more than 10 percent mortality occurs in the control group, the test needs to be repeated until satisfactory survival is achieved in the control group. See Section 1.5 of the City of Pierre's SWD permit for a detailed discussion on the procedures to be followed if toxicity occurs during a WET test.

2.2 BIOSOLIDS MANAGEMENT PERMIT

The City of Pierre currently possesses a Biosolids Management permit from the SDDENR, permit number SDL020176. The permit became effective April 01, 2013 and is in effect until March 31, 2018. The current Biosolids Management permit authorizes the landiflling of biosolids from the Pierre WWTP (Outfall 201). The current SDDENR Biosolids Management permit and associated Statement of Basis for the City of Pierre are presented in Appendix B.

2.2.1 Biosolids Limits: Biosolids produced at the City of Pierre's WWTP are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered with a belt filter press, and finally disposed of at the City's municipal landfill. All

biosolids produced and disposed of at an appropriate permitted landfill shall meet the following requirements:

2.2.1.1 Chemical: Biosolids are required to pass the paint filter and Toxicity Characterization Leaching Procedure (TCLP) tests as well as any other tests required by the landfill.

2.2.1.2 Vector Attraction Reduction (VAR): The potential for attracting vectors, such as mosquitoes, must be reduced by the City of Pierre. To do this, the biosolids that are disposed of at a landfill need to be covered by soil or other material at the end of each operating day.

2.2.2 Self-Monitoring Requirements: In addition to the chemical and VAR requirements listed in Section 2.2.1, the City of Pierre's Biosolids Management permit also requires the monitoring and reporting of total solids and the total amount of biosolids disposed of in landfills. All biosolids characteristics that must be monitored and reported under the Biosolids Management permit are listed in Table 2-3, as well as their required testing frequency, reporting values, and sample type.

Table 2-3: Biosolids Self-Monitoring Requirements at the Pierre WWTP

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test [1]	Annually or prior to disposal at landfill	Pass or Fail	Grab
Toxicity Characterization Leaching Procedure (TCLP) [1]	Once every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric	Annually	Actual Value	Calculate

tons			

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

END OF SECTION 2

SECTION 3: ENVIRONMENTAL INFORMATION DOCUMENT

3.1 PROJECT AREA ENVIRONMENT

3.1.1 General Description of Project Area: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. The topography of the Pierre area ranges from rolling hills in the immediate vicinity of the river to relatively flat in areas at a distance of a mile or more from the river. The proposed treatment plant improvements associated with this Report will replace existing equipment that was found to be in poor condition during the 2014 Wastewater Treatment Plant System Analysis completed by Banner Associates, Inc. Expansion to increase the capacity of the treatment plant is not considered at this time since the current loadings are below the design capacity of the treatment plant as discussed in Subsection 4.2 of this report.

The existing WWTP includes screening, raw wastewater pumping, comminutors, grit removal, primary clarification, a trickling filter, activated sludge, final clarification, chlorine disinfection, sulfur dioxide dechlorination, aerobic digestion, and a belt filter press for dewatering of the biosolids before disposal. More details of the treatment processes can be found in Section 4 of this report. Effluent from the Pierre WWTP is continually discharged into the portion of the Missouri River known as Lake Sharpe. This discharge is authorized by the City's Surface Water Discharge (SWD) permit. The City of Pierre also possesses a Biosolids Management Permit which authorizes the disposal of treated biosolids. Both the SWD permit and the Biosolids Management permit are discussed in Section 2 of this report.

3.1.2 Historical, Cultural, and Archeological: The City of Pierre is located in the central region of South Dakota on the east bank of the Missouri River downstream of the Oahe Dam. Pierre is the Capitol of South Dakota and the county seat of Hughes County.

The City's transportation facilities include bus lines, the Rapid City, Pierre and Eastern (RCPE) Railroad, U.S. Highway No. 14 and No. 83, and S.D Highway No. 34. Airline service at the Pierre Regional Airport is provided by Great Lakes Airlines and multiple small commuter airlines.

The City of Pierre has established a strong economic base of agricultural trade, agricultural related industry, tourism, and retail business. Significant industrial, commercial and institutional establishments in the City of Pierre include the following:

- State Government
- Tourism, especially that related to hunting, fishing, and other outdoor recreation opportunities abundant in the area.
- Regional center for medical care services
- Regional center for shopping and commercial business
- Conventions

The development of the project will not adversely affect any sites listed in the register of National Historic Places. According to information available from the U.S. National Park Service, there are 28 registered historic places within the immediate vicinity of Pierre. The closest registered historic place to the existing WWTP is approximately 0.8 miles. Verification of historic sites may be requested from the South Dakota State Office of Cultural Preservation.

The land in the study area was originally rich in wild game and fur bearing animals. Prior to settlement, the area was frequented by nomadic Indians, fur trappers and traders. An archaeological review or inspection of the site will not be completed prior to initiation of construction since the proposed improvements will replace existing equipment only. No previously undisturbed soils will need to be disturbed during the construction phase of this project.

3.1.3 Floodplains, Wetlands, and Aquifers

3.1.3.1 Floodplains: The original wastewater treatment equipment that is proposed to be replaced was constructed above the 100 year flood elevation. The U.S. Army Corps of Engineers' "Flood Hazard Report - Missouri River" dated May, 1988 shows that the 100 year flood elevation for Lake Sharpe near La Framboise Island is approximately 1427.5. The "ice-affected" 100 year flood elevation is reported to be approximately 1428.5. These elevations are based on the datum used by the Corps of Engineers. The Pierre WWTP elevations are based on the City of Pierre elevation datum which is 2.56 ft. higher than the Corps of Engineer's datum. This means the 100 year "ice-affected" flood elevation at the wastewater treatment facility is 1431.06 on City of Pierre datum. Since this project involves replacing the internal primary clarifier and grit removal components, the elevations of the existing concrete tank structures will not be changed in any way. The water surface elevations within the treatment process are high enough to permit unobstructed discharge during high water conditions.

3.1.3.2 Wetlands: It is anticipated that construction of the proposed wastewater treatment plant improvements will not impact any area considered as

natural wetlands, as defined by the National Wetlands Inventory (NWI). All construction activity will take place within the extents of the existing facility.

3.1.3.3 Aquifers: The existing wastewater treatment plant is located over the Missouri River outwash aquifer. The aquifer is a shallow groundwater source for the City of Pierre as well as a number of irrigation systems in the area. The soil materials in the aquifer consist of fine-grained to coarse-grained glacial deposits of outwash. The aquifer thickness varies from less than 10 feet to more than 65 feet. The overburden soils consist of fine grained topsoil and lean clay materials. The aquifer is recharged primarily by movement of water from the Missouri River into the sand and gravel deposits.

3.1.4 Agricultural Lands: The proposed construction area will not affect agricultural lands. The land to be used for the proposed improvements is within the extents of the original wastewater treatment plant. The project will not have long term adverse impacts on agricultural land.

3.1.5 Wild and Scenic Rivers: The reach of the Missouri River near the existing treatment plant is controlled downstream by the Big Bend Dam at Fort Thompson and upstream by the Oahe Dam. The Missouri River at Pierre is a part of the mainstem reservoir system and is not a free flowing river. The area is heavily used as a recreational area for fishing, hunting, camping, boating, and other outdoor recreational activities. The construction of the improvements at the wastewater treatment plant is not expected to cause any permanent changes to the recreational use of the resources. The wastewater treatment

plant is screened from view from the river by trees standing between the treatment facility and the Missouri River.

3.1.6 Fish and Wildlife Resources: Fish and wildlife are abundant in the Pierre area and the tourism related to the fish and wildlife resources are a significant factor in the local economy. The impoundment of the Missouri River and the public lands in the area provide many opportunities for fishing, hunting, and other related activities.

3.1.6.1 Fish: Fish populations in the Missouri River impoundments are an important resource for the area and state. The species of fish found in the Missouri River impoundments and tributary creeks include walleye, lake trout, northern pike, perch, minnows, pan fish, sturgeon, paddlefish, catfish, bullheads, and assorted rough fish. The Missouri River is used for fishing throughout the year.

3.1.6.2 Wildlife

3.1.6.2.1 Aquatic and Semiaquatic Species: Hughes County and the study area lie within the central flyway of the north central United States which serves as a major migratory route for waterfowl. Commercial waterfowl hunting is widespread in the area and is an important source of income for numerous individuals in the Pierre area. The flyway is also known to be used by the whooping crane, an endangered species. The construction and operation of the WWTP improvements is not expected to have an impact on the migratory patterns of the waterfowl.

3.1.6.2.2 Terrestrial Species: Most species of wildlife which occur in eastern South Dakota are found in the proposed project area. Big game species are hunted with both gun and bow and include turkey, white-tailed deer, and mule deer. Furbearers in the area include fox, coyote, weasels, skunks, badgers, raccoons, squirrels, rabbits, and other wildlife during all seasons with moderate trapping taking place during the prime season.

Many bird species have been recorded by local bird clubs both during migration and also during nesting season. The pheasant population fluctuates but is generally above average compared to the rest of the state. They are heavily hunted each fall. Occasional coveys of partridge are also found.

3.1.6.3 Endangered Species: According to the U.S. Fish and Wildlife Service, endangered species known to occur within Hughes County include the whooping crane, bald, eagle, piping plover, least tern, and pallid sturgeon. The construction activities may limit the use of the trees by birds in the immediate vicinity of the construction site while construction activities are underway. No long term change to the area or impact on endangered species is expected as a result of the project.

3.1.7 Air Quality: The proposed project area and Hughes County in general have no major air quality problems. Local air quality problems occur due to odors from different sources such as wastewater treatment facilities, livestock feeding operations, manure pits, and numerous other sources. Dust storms also occur on occasion; particularly in dry years when inadequate soil cover has been

allowed to remain on the land surface. The proposed project is not expected to have any long term adverse impact on air quality on the area. The treatment plant improvements will not alter the present conditions regarding odors. There will be short-term impacts during construction due to fugitive dust and heavy equipment operation.

3.1.8 Water Quality and Quantity

3.1.8.1 Surface Water: The major surface water body near the existing WWTP and proposed improvements is the Lake Sharpe impoundment of the Missouri River. According to the 2014 South Dakota Integrated Report for Surface Water Quality Assessment, the beneficial use categories of Lake Sharpe of the Missouri River are as follows:

- (1) Domestic water supply
- (2) Coldwater permanent fish life propagation waters
- (7) Immersion recreation waters
- (8) Limited-contact recreation waters
- (9) Fish and wildlife propagation, recreation, and stock watering waters
- (10) Irrigation waters
- (11) Commerce and industry waters

The water quality requirements for the designated beneficial use categories are summarized in Table 3-1. The most restrictive beneficial use category is applied when determining water quality requirements for a discharge from a wastewater treatment facility.

Table 3-1: Beneficial Use Categories

Parameter	(1) Domestic Water Supply	(2) Coldwater Permanent Fish Life Propagation	(7) Immersion Contact Recreation	(8) Limited-Contact Recreation	(9) Fish & Wildlife Propagation, Stock Watering	(10) Irrigation	(11) Commerce and Industry
TDS, mg/L	1000				2,500		2,000
NO_3, mg/L as N	10.0				50		
pH, units	6.5 to 9.0	6.5 to 9.0			6.0 to 9.5		6.0 to 9.5
Coliform, total (per 100 mL)	5,000 (mean); 20,000 (single sample)						
Coliform, fecal (per 100 mL)			200 (mean); 400 (single sample)	1,000 (mean); 2,000 (single sample)			
Escherichia coli (per 100 mL)			126 (mean); 235 (single sample)	630 (mean); 1,178 (single sample)			
Barium, mg/L	1.0						
Chloride, mg/L	250	100					
Fluoride, mg/L	4.0						
Sulfate, mg/L	500						
Total Chlorine Res., mg/L		0.019 (acute) 0.011(chronic)			0.019 (acute) 0.011 (chronic)		
Nitrogen, Total Ammonia, mg/L as N		Equation-based standard					
Dissolved Oxygen, mg/L		≥6.0	≥5.0	≥5.0			
Undissoc. H_2S, mg/L		0.002					
TSS, mg/L		30					
Temp., °F		65					
Alkalinity, mg/L as $CaCO_3$					750		
Conductivity, mmhos/cm					4,000	2,500	
Sodium Adsorption Ratio						10	
Total Petrolium Hydrocarbons	≤ 1.0				≤ 10		
Oil and Grease					≤ 10		

3.1.9 Recreational Facilities: The Pierre wastewater treatment plant is located immediately adjacent to the softball complex used by the recreational leagues in the City of Pierre. Since this project will not consist of an expansion but rather an upgrade of select existing equipment, it is not anticipated that this project will interfere with the use of the softball complex.

3.2 PROJECT PURPOSE AND NEED

The proposed improvements will replace existing equipment at the Pierre WWTP that has reached the end of its useful life. The existing equipment proposed to be replaced is in bad condition and has the potential to fail which would cause multiple operational difficulties and potential problems with meeting the City of Pierre's SWD permit. The existing wastewater treatment plant is described in Section 4 of this report. The alternatives for upgrading the treatment plant are described in Section 5.

The proposed improvements will provide a treatment system with the reliability needed to handle the present and future flows and loads while meeting the requirements of the SWD permit as discussed in Subsection 2.1. The need for the project is demonstrated by the poor condition of the primary clarifier mechanisms and drives, grit removal equipment, and the leak that exists in the compressed air pipe between the blower building and the air lift pump station.

3.3 PROJECT IMPACT

3.3.1 Direct and Indirect Impacts on Environment: Previous portions of this section have addressed the impact of the proposed project on water quality, fish and wildlife, historical and archaeological sites and air quality. The remainder of this

section addresses other impacts of the proposed project and mitigation measures that may be necessary to limit adverse impacts.

3.3.1.1 Land Resources: Construction of the proposed improvements will require removal of existing primary clarifier and grit removal equipment, rehabilitation of the existing concrete tanks, and installation of new primary clarifier and grit removal equipment. Excavation and stock piling of excavated materials and site grading work may also be required, depending on whether or not the new air piping from the blower building to the air lift station is installed above or below ground. Potential adverse environmental impacts during construction include short term localized erosion and airborne dust from the construction site through wind action and heavy equipment use. Erosion and sediment control practices include both temporary measures such as temporary fencing, erosion control barriers, and seeding and grading of properly sloped drainage ways.

3.3.1.2 Air Resources: Air quality may be degraded by increased particulate levels during excavation and construction work associated with the proposed improvements. Temporary increases in construction equipment emissions are not expected to be significant to the general impacted area. Measures that can be taken during construction to control excessive airborne dust are listed below.

- Watering and/or the use of dust retardants before and during construction,
- Stabilizing temporary and permanent access roads to prevent erosion,

- Proper placement and compaction of stockpiled soil and excavated material to reduce particulates,
- Regrading, resurfacing, and/or reseeding dust-prone areas and disturbed terrain immediately, and
- Limiting construction activities during periods of high winds.

3.3.1.3 Wildlife Resources: The proposed project will result in construction activities within the extents of the existing WWTP. Wildlife will be deterred from occupying the area immediately adjacent to the site due to construction activities. No long term effects on wildlife are expected as a result of this project. It is doubtful that there will be a threat to any endangered species of animals or plants.

3.3.1.4 Cultural Resources: The construction and operation of the wastewater treatment plant improvements is not expected to have any significant adverse short or long-term impact on cultural resources of the area. All work covered in this project will take place within existing structures or within previously excavated trenches. In the event that archaeological or historic resources are unearthed during construction excavation, the immediate stoppage of work is dictated by a required condition in the contract specifications.

Construction should bring a slight economic boost to the area through the hiring of local labor, retail trade by construction employees, and purchase of miscellaneous building supplies and fuel.

3.3.2 Impact on the Environment with no Improvement Action Taken: If no action is taken to improve the existing wastewater treatment facility components

outlined in this report, there is a potential for the components to fail. The primary clarifier mechanisms and drives as well as the grit removal equipment should be replaced with new equipment to increase reliability. The leaking compressed air pipeline that supplies the air lift pump station should be replaced to save energy and maintenance costs with regard to the blowers. No action will result in continued and prolonged wasting of energy from the leaking compressed air pipe. No action will also increase the possibility of the grit removal and primary clarifier systems failing. If the grit removal system fails, it would result in damaged pumps and increased maintenance costs downstream of the grit chamber. If the primary clarifier mechanisms were to fail, the biological treatment systems could potentially be overloaded with solids and organics which could result in SWD permit violations. In summary, the WWTP should be upgraded to provide a long term safe means of handling wastewater.

END OF SECTION 3

SECTION 4: EVALUATION OF PRESENT CONDITIONS AND FUTURE NEEDS

4.1 PROJECT NEED AND PLANNING AREA IDENTIFICATION

Select improvements to the Pierre WWTP are necessary to ensure continued good performance of the treatment plant. In the 2014 Wastewater Treatment Plant System Analysis, multiple treatment components were identified to be in poor condition and were recommended for immediate replacement. The project improvement area is defined as the area within the city limits of the City of Pierre. This section will determine the present flows and loads and analyze the capacity and effectiveness of the existing WWTP treatment components to treat the present and future flows and loadings.

4.2 EXISTING FACILITIES DESCRIPTION

4.2.1 Existing Wastewater Treatment Plant: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River. Wastewater is conveyed to the treatment plant through nine (9) lift stations located in and around the City of Pierre. The wastewater treatment plant provides both primary and secondary treatment of the influent wastewater.

The pretreatment facility consists of screening, pumping, comminution, grit removal, and flow measurement. Primary treatment is provided by two (2) primary clarifiers with provisions for a third future primary clarifier. The primary clarifier mechanisms will be replaced as part of an on-going project. Primary effluent is pumped to secondary or biological treatment processes.

The biological treatment processes available at the Pierre WWTF include (1) trickling filter unit followed by a complete mix activated sludge system. An air lift pump station is provided between the trickling filter and complete mix activated sludge basins in order to raise the hydraulic grade line to the necessary

level for the activated sludge and final clarification units. At this time the trickling filter has been bypassed. This bypass was completed primarily to assist with deficiencies in the activated sludge process. The trickling filter remains available to put back into service if needed. Air is provided to the aeration basins from a blower building housing a series of blowers forcing compressed air through a piping system to an air distribution system in each aeration basin tank. Secondary clarification is achieved with two (2) final clarifiers with provisions for a third future final clarifier. Return activated sludge (RAS) is recycled to the air lift pump station and waste activated sludge (WAS) is thickened using a dissolved air flotation (DAF) unit.

The Pierre WWTF maintains the ability to provide wastewater effluent is disinfected subsequent to secondary clarification using chlorine injection. If chlorine is utilized for disinfection, sulfur dioxide is used to neutralize any residual chlorine. At this time, the facility is using paracetic acid (PAA) for disinfection in accordance with a pilot study approved by the South Dakota Department of Environment and Natural Resources. The facility does have a disinfection contact tank available that has been used with both chlorine and PAA disinfection. At this time, the contact tank is being bypassed to minimize issues with iron oxidation and precipitation in the contact tank due to PAA disinfection. Finally, disinfected effluent from the plant flows by gravity to Lake Sharpe of the Missouri River. Figure 4.1 shows the location of the existing WWTP.

Figure 4-1: Wastewater Treatment Plant Location

4.2.2 Existing Wastewater Flows and Loads: The City of Pierre keeps and maintains flow and loading records for the WWTP. Flow at the Pierre WWTP is measured at two different locations with parshall flumes. The influent parshall flume has a 9-inch throat width and is located immediately downstream of the grit removal process. The effluent parshall flume has a throat width of 18 inches and is located downstream of the final clarifiers. Both flumes use ultrasonic level detectors to monitor height of water in the flumes and calculate corresponding flow rate. The operations personnel track daily flow volumes and the peak flow records. For a complete list of the wastewater parameters that must be tracked and reported under the City's SWD permit, see Section 2.1 of this report.

Daily flow records and routine solids and organic loading data for the year 2014 through September 2015 were used to determine the existing loads to the facility. This data was used to calculate the existing loads to the facility are provided in Appendix C. Data from range was chosen for these calculations because of the adverse impacts the 2011 flood had on the data from 2011 through 2013. Although the flood had receded in 2011, the cleaning of sewers throughout the city in 2012 and 2013 resulted in unusually high solids and organics content in the raw wastewater. Using the data from 2011 through 2014 would give an unrealistic representation of the quality of the wastewater and result in WWTP components being designed for conditions that are unlikely to occur again in the future. Based on the data presented in Appendix C, the results of the analysis of the influent records are presented in Table 4-1.

Table 4-1: Present Conditions of Influent Flows and Loadings

Condition	Flow, MGD	BOD_5, mg/L	BOD_5, lb/d	TSS, mg/L	TSS, lb/d
Average Day	1.53	292	3,330	351	3,992
Peak Month	1.89	453	5,128	761	7,942
Peak Day	2.51	1104	10,772	1,565	15,945

According to the US Census Bureau, the estimated population for the time frame represented by the records shown in Table 4-1 is 13,984. This population yields an average daily flow rate of 108 gallons per capita per day (gpcd). If the average daily flow rate is greater than 125 gpcd, the cost of correction of inflow/infiltration (I/I) must be considered when developing treatment alternatives. Since the current average daily flow rate is less than 125 gpcd, inflow and infiltration mitigation is not discussed in this report.

the discharge-transfer-feed cycle is carried out every day. Once the sludge is digested, it is pumped to the Post-ATAD storage tanks to cool. Once the sludge has cooled, it is dewatered using a belt filter press. Off-gas from the ATAD system is routed through a water/chemical scrubber system. Figures 4.2 through 4.4 show a variety pictures in and around the ATAD process.

Figure 4.1: Aerial View of ATAD Complex

Figure 4.3: ATAD Complex and interior equipment and piping

Figure 4.4: ATAD Spiral Aerator Arrangement

As designed and constructed, the previous description of the ATAD process was all initially available. Through the years, the existing process has experienced difficulties keeping all of the equipment for all three ATADs and the pre ATAD fully operable. The experience of the City of Pierre is similar to other first generation ATAD systems constructed at this time in the area (primarily in Minnesota). The City of Pierre, through ownership of this process, has noted higher than expected failure of mechanical equipment with the ATADs. This process was foreign made and virtually all of the mechanical equipment is also foreign made. The City has regularly experienced difficulties with both the cost and the extensive delays in obtaining replacement parts. As a result, operable equipment from one ATAD has been utilized (moved) to another ATAD to keep a fully functioning system available for treatment of the biosolids. The City of Pierre has been able maintain compliance with biosolids treatment and solids handling in general throughout the time this process has been in place.

4.3.2 Aeration Basin Air Piping: underground air pipeline between the blower building and the aeration basins supplies compressed air from the aeration basin blowers to the air distribution system in each aeration basin. The aeration basins are a complete mix activated sludge system and serves as Pierre's secondary wastewater treatment process. The complete mix activated sludge system for the City of Pierre consists of two (2) aeration basins and two (2) final clarification units. The aeration and final clarification unit processes work hand in hand in the activated sludge process. In the aeration basin, active microorganisms feed on the organic matter present in the wastewater. The microorganisms need oxygen to survive, and this is supplied through the aeration system. Once the wastewater has been in the aeration basins for a certain detention time (hydraulic retention time, or HRT), the wastewater is routed to the final clarifiers

where the microorganisms that were feeding on the organic matter present in the wastewater will settle. The supernatant from the clarifiers is the treated wastewater and will proceed to downstream processes. The settled mixture of microorganisms and organics will be either returned to the activated sludge unit (return activated sludge, or RAS) or wasted to the dissolved air flotation sludge thickener (waste activated sludge, or WAS). The return activated sludge contains microorganisms that will be returned to the aeration basin, thus the returned microorganisms will be allowed a longer detention time (solids retention time, or SRT) in the aeration basin. The difference between the hydraulic retention time and the solids retention time is that the HRT is the amount of time the wastewater liquid is in contact with the microorganisms and the SRT is the amount of time that the microorganisms are in the aeration basin. The aeration system consists of three multistage centrifugal blowers located in the Blower Building. The air is distributed to the two aeration basins by two 12 inch diameter header pipes located below the ground surface. The City of Pierre has verified that this piping, similar to the piping for the air lift station, is leaking. The location of the Aeration Basins, Blower Building, and pipe route are resented in Figure 4.5. A picture of the interior of the blower building showing the air header pipe and drops through floor are presented in Figure 4.6.

Figure 4.5: Aeration Basins/Blower Building/Air Feed Pipes

Figure 4.6: Blower Building Header Pipe

4.3.3 Control System Improvements: The original control system for the blowers providing air to the aeration system included providing a dissolved oxygen (DO)

meter located in each basin. The DO meter would provide information on the DO concentration on a continuous basis and transmit a signal for control of air flow and for display at the Blower Building RTU, located in the Blower Building. The aeration basins had an override provision that prevents the aeration rate from being reduced to a point where either mixing is inadequate or the centrifugal blowers are in danger of entering a surge condition. Much of the existing control equipment is no longer operable. DO probes have been recently replaced, however, they currently provide information only and are not utilized to control air flow. Blowers are essentially run manually. As a result it is difficult for operators to match air flow to loading conditions. It is common to observe high DO concentrations in the morning after night time flows have been low and then high DO concentrations in the late afternoon as the aeration basins have taken on the higher daily loadings.

4.4 SUMMARY

The components listed in this section for replacement have been identified through monitoring of the wastewater treatment facility. The City of Pierre, through a previous planning document, has already initiated the replacement of the primary clarifier mechanisms and drives, grit removal and grit washing equipment, underground compressed air pipeline between the blower building and air lift pump station. Design of these improvements in nearing completion and is expected to bid early next year. Along with the components that are currently recommended for replacement, the previous report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. These items will continue to be closely monitored for any abrupt detrimental change in condition and should be

included within a subsequent planning document. The City of Pierre is planning to initiate an overall facility planning document to address the long term wastewater treatment issues for the facility.

END OF SECTION 4

SECTION 5: WASTEWATER TREATMENT ALTERNATIVES

5.1 GENERAL REQUIREMENTS AND CONDITIONS

The purpose of this section of the report is to review alternatives to provide reliable treatment to meet existing and future planned hydraulic and organic loading conditions. Section 4 of this report includes a discussion of the existing wastewater treatment plant and loading conditions as well as an estimate of the future anticipated loading conditions.

5.1.1 Site Conditions: The proposed site for the improvements lies within the extents of the existing wastewater treatment plant. The existing WWTP is located on the southeast side of Pierre in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. As mentioned in Section 4 of this report, three (3) items were identified for immediate replacement in the 2014 Wastewater Treatment Plant System Analysis: primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the compressed air pipeline between the blower building and air lift pump station. Those items have been addressed in a previous planning document and are under design. The City of Pierre continues to address many of the initial issues brought up in the previous reports. They have made improvements for settlement issues around the laboratory, they have purchased new instrumentation for the aeration basins, and they have continued to look for other issues around the facility. The items included in this facility plan address those additional items. Continued frustration with finding a reliable and cost effective means to keep the ATAD system fully functional is the main driving force for this document. The air piping item and the control system item are included as they should be completed and are expected to remain in the long term use of the facility

5.2 DESCRIPTION OF ALTERNATIVES

The alternatives considered for the equipment replacement are as follows.

ATAD Rehabilitation Alternatives:

- Replacement with Same Process
- Replacement with Alternative Process
- "No Action" Alternative

Aeration Basin Air Piping Alternatives:

- Compressed Air Pipeline Replacement Alternative 1: Below Ground Pipe
- Compressed Air Pipeline Replacement Alternative 2: Above Ground Pipe
- "No Action" Alternative

Control System Improvements:

- Schedule of Improvements
- "No Action" Alternative

5.3 EVALUATION OF ALTERNATIVES

5.3.1 ATAD Rehabilitation Alternatives

5.3.1.1 ATAD Rehabilitation Alternative 1: Similar Equipment

The existing ATAD process is essentially part of the first generation ATAD's. As discussed in Section 4 of this report, the process provides digestion of the solids generated at the Pierre WWTF in an Autothermal Thermophilic Aerobic Digestion system. The experience of the City of Pierre is similar to other first generation ATAD systems constructed at this time in the area (primarily in Minnesota). The City of Pierre, through ownership of this process, has noted higher than expected failure of mechanical equipment with the ATADs. This process was foreign made and virtually all of the

mechanical equipment is also foreign made. The City has regularly experienced difficulties with both the cost and the extensive delays in obtaining replacement parts. As a result, operable equipment from one ATAD has been utilized (moved) to another ATAD to keep a fully functioning system available for treatment of the biosolids. The City of Pierre has been able maintain compliance with biosolids treatment and solids handling in general throughout the time this process has been in place.

The City of Pierre does like the ATAD concept for treatment of the biosolids. The first generation system has much of the moving parts, high speed spiral aerators and foam cutters, etc. located inside the tanks. As a result, the city has experienced on-going difficulties with keeping the equipment operational. Frequent failure of the equipment combined with difficulty in obtaining replacement parts has resulted in the city requesting that this process no longer be considered.

5.3.1.2 ATAD Rehabilitation Alternative 2: Alternate ATAD Process

An alternate to the existing ATAD process is another ATAD process manufactured by Thermal Process Systems. This process, the ThermAer bosolids reduction system is the second generation in ATAD technology. As such, the overall concept of the ATAD process stays the same in terms of the needs of the system with respect to air, mixing, foam cutting, etc. The ThermAer process will utilize an end suction centrifugal pump located in the pump room of the existing support building to draw liquid from the digester and return it back to digester through a jet mix arrangement. A positive displacement blower is used to supply air, through the jet mix assembly in the tank, to the process. Foam cutting is provided by

separating a portion of the flow from the mixing pump to spray system at the top of the tank to control the foam. The primary treatment for the ThermAer process can be completed in one existing ATAD tank. This is true for the existing ATAD as well (Pierre has been able to meet the biosolids treatment needs utilizing one ATAD).

Figure 5.1: Typical Mixing Pumps

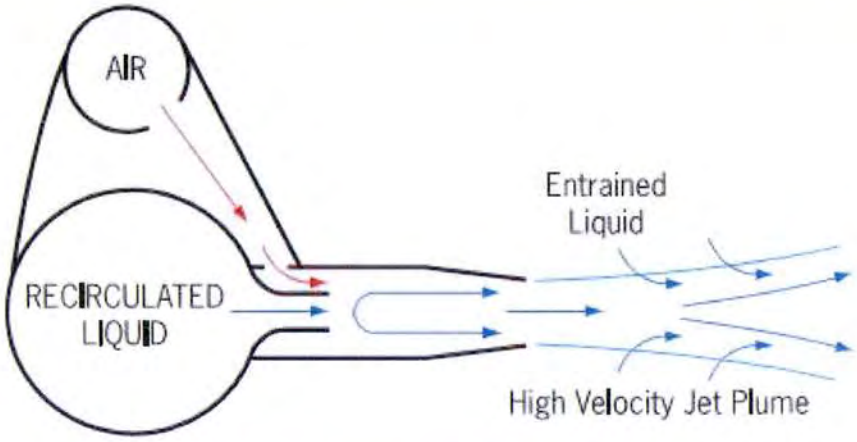

Figure 5.2: Air/Jet Mix Nozzle System

Figure 5.3: Typical PD Blower Arrangement

This second generation equipment will work inside the existing ATAD tanks. An existing ATAD tank will be fitted with a concrete dividing wall and can be operated as a two cell ATAD process. The ability for this type of retrofit to work in the existing tanks means that construction of new tankage for the alternate ATAD process will not be required.

A second tank will be utilized for the Storage Nitrification Denitrification Reactor (SNDR). The SNDR is used to provide optimum temperature, pH, alkalinity and aeration conditions for nitrification and denitrification of digested biosolids. The SNDR will improve the dewaterability and cake quality of the treated ATAD sludge. Supernatant from the digester returned to the head of the plant will be lower in nitrogen as well. Literature on the SNDR process indicates: Reduction in soluble COD, ammonium , and VFAs in the SNDER significantly reduces the chemical demand for dewatering operations; nitrification and denitrification in the SNDR greatly reduce the ammonium concentration in the recycle streams; CO2 released during the digestion generates carbonate and bi-carbonatae alkalinity which is then available for nitrification; the contral strategy is based on ORP, temperature and pH; and automation includes automatic waste, feed, aeration, nitrification and denitrification allowing operation with minimal operator assistance.

The basis of the cost estimate provide below also includes a biofilter type odor control system. The odor control system includes the fans, air distribution plenum, inorganic and organic media, cover and instrumentation for the system.

5.3.1.3 "No Action" Alternative

If no action were taken on the ATAD system, it is likely that the performance of the biosolids digestion process will be compromised at some point in the future. A well-functioning sludge digestion system is an important part of the overall treatment process because it prepares the biosolids for ultimate disposal as required by the City's permit.

5.3.1.4 Probable Costs

The replacement of the existing ATAD process with the ThermAer process with new components including the new equipment discussed above, structure additions, concrete repair and other ancillary work is estimated to be $1,770,000. No additional costs were estimated for the replacement of the existing ATAD process.

5.3.2 Aeration Basin Air Piping Alternatives

5.3.2.1 Aeration Basin Air Piping Alternative 1: Underground Piping

This alternative would involve excavation to remove and replace the existing compressed air pipe that serves the air lift pump station from the blower building. The new pipe would be constructed of 10-inch mechanical joint ductile iron pipe with heat resistant gaskets. Advantages of this option include a lower price and the below ground pipe will not obstruct travel in the area.

5.3.2.2 Aeration Basin Air Piping Alternative 2: Above Ground Replacement

This alternative would involve abandoning the existing underground portion of the compressed air pipe that serves the aeration basins from the blower building and installing a new pipeline above ground. This new pipeline would be constructed of 12-inch unlined ductile pipe and fittings and installed at an elevation to match the existing air headers running along the walkway between the two aeration basins. Horizontal alignment of pipe will be directly above the existing underground alignment. Advantages of this alternative over the below ground alternative would be that leaks in the piping would be easier to detect and that any leak found would be easier to repair.

5.3.2.3 "No Action" Alternative

If no action were taken on the compressed air pipe between the blower building and aeration basins, air would continue to leak from the pipe and energy would continue to be wasted in the form of electricity used to power the air lift blowers. It will also make it difficult to know how much air is actually getting to the aeration process. If the existing compressed air pipe were to completely collapse, air could no longer be supplied to the aeration basins which would disrupt the treatment of wastewater and can result in under treated wastewater and possible permit violations.

5.3.2.4 Probable Costs

The replacement of the underground air piping with similar underground construction has an opinion of probable cost of $75,000. The replacement of the same airline with an above ground air piping system has a similar opinion of probable cost near $75,000.

5.3.3 Control System Alternatives:

5.3.3.1 Provide Schedule of Improvements

This alternative will include a number of improvements for upgrading the controls operating equipment for the activated sludge process. The work includes the addition of variable frequency drives (VFD) for the aeration system blowers, integration of new DO probes to control the aeration process, and new operator interface modules at various locations throughout the WWTF. The new improvements will allow the operating staff regain and improve control of the aeration system as well as the air lift system at the facility. Air can be supplied on an "as needed" by the system to match the loading conditions at the aeration basins. There will be an additional benefit of lower energy consumption by raising and lowering the energy needed for blower operation to match the demand.

5.3.3.2 "No Action" Alternative

If no action were taken on the controls the facility operators will not be able to operate the facility at optimum performance. The aeration basins will continue to run at high DO levels during lower loads (potentially wasting energy) and may not be providing sufficient air under higher loading conditions. Under more severe conditions, providing insufficient air can lead to process upset and/or permit violations. The control system improvements will serve to optimize the performance of the facility.

5.3.3.3 Probable Costs

The replacement of the underground air piping with similar underground construction has an opinion of probable cost of $150,000. The

replacement of the same airline with an above ground air piping system has an opinion of probable cost near $150,000.

5.4 SUMMARY AND RECOMMENDATIONS

Based on on-going monitoring of the wastewater treatment facility, operations staff has noted new items that are deficient and in need of improvement. These items include the ATAD process, controls related to the operation of the aeration basins and other operator interface controls, and the compressed air pipe between the blower building and aeration basins. This section described two (2) possible alternatives other than "No Action" for each of the items, except controls, in need of replacement which would ensure the reliable operation of the ATAD biosolids digestion process, aeration basin control, and the compressed air feed pipe to the air lift pump station.

Banner Associates recommends Alternative 2 for the ATAD process modifications. The original ATAD process can be greatly improved by moving to the second generation ATAD system. All major equipment is moved out of the active digestion tank and should significantly decrease the issues with equipment failures due exposure in the treatment vessel. The second generation ATAD process is able to be retrofitted into the existing tanks available for the existing process. The improvements with this process will have additional impacts due expected improvements of treated sludge quality sent to the belt filter press for final dewatering before disposal. It will also have the ability to improve the water quality of the water that is routed back through the head of the plant for treatment.

Banner Associates recommends Alternative 2 for the compressed air piping replacement. The above ground compressed air pipe is recommended because of the advantages listed for having an exposed pipe to verify if future leaking takes place and it will be easier to repair future issues as they occur. The cost will be similar to the below

grade repair. Unlike the pipe replacement recommended for compressed air line to the air lift pump station, this area does not experience the need for truck traffic over (or under) the air pipe. A properly installed above ground pipeline will have a long service life and will be easier to maintain of problems occur in the future. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

Banner Associates recommends Alternative 1 for control system upgrade. The work includes the addition of variable frequency drives (VFD) for the aeration system blowers, integration of new DO probes to control the aeration process, and new operator interface modules at various locations throughout the WWTF. The new improvements will allow the operating staff regain and improve control of the aeration system as well as the air lift system at the facility. Air can be supplied on an "as needed" by the system to match the loading conditions at the aeration basins. There will be an additional benefit of lower energy consumption by raising and lowering the energy needed for blower operation to match the demand.

In addition to the three (3) components discussed in this report, it is further recommended that the City of Pierre consider preparation of an overall master facility plan to consider all aspects of the wastewater treatment facility. This planning document will also be useful in identifying phases for improvements. This will allow the facility to consider both short term and long term improvements that may be necessary through the next twenty years.

END OF SECTION 5

SECTION 6: RECOMMENDATIONS AND CAPITAL IMPROVEMENT PLAN

6.1 GENERAL

Alternatives were presented and investigated in Section 5 of this report. Selection of the recommended alternatives was based on the current condition of the equipment in question and costs associated with replacing the equipment.

6.2 DESCRIPTION OF SELECTED IMPROVEMENTS

6.2.1 ATAD Process Improvements: Of the alternatives for the ATAD system rehabilitation, Banner Associates recommends Alternative 2: ThermAer ATAD process. The ThermAer bosolids reduction system is the second generation in ATAD technology. As such, the overall concept of the ATAD process stays the same in terms of the needs of the system with respect to air, mixing, foam cutting, etc. The ThermAer process will utilize an end suction centrifugal pump located in the pump room of the existing support building to draw liquid from the digester and return it back to digester through a jet mix arrangement. A positive displacement blower is used to supply air, through the jet mix assembly in the tank, to the process. Foam cutting is provided by separating a portion of the flow from the mixing pump to spray system at the top of the tank to control the foam. The primary treatment for the ThermAer process can be completed in one existing ATAD tank. This is true for the existing ATAD as well (Pierre has been able to meet the biosolids treatment needs utilizing one ATAD).

This second generation equipment will work inside the existing ATAD tanks. An existing ATAD tank will be fitted with a concrete dividing wall and can be operated as a two cell ATAD process. The ability for this type of retrofit to work in the existing tanks means that construction of new tankage for the alternate ATAD process will not be required.

A second tank will be utilized for the Storage Nitrification Denitrification Reactor (SNDR). The SNDR is used to provide optimum temperature, pH, alkalinity and aeration conditions for nitrification and denitrification of digested biosolids. The SNDR will improve the dewaterability and cake quality of the treated ATAD sludge. Supernatant from the digester returned to the head of the plant will be lower in nitrogen as well. Literature on the SNDR process indicates: Reduction in soluble COD, ammonium , and VFAs in the SNDER significantly reduces the chemical demand for dewatering operations; nitrification and denitrification in the SNDR greatly reduce the ammonium concentration in the recycle streams; CO2 released during the digestion generates carbonate and bi-carbonatae alkalinity which is then available for nitrification; the contral strategy is based on ORP, temperature and pH; and automation includes automatic waste, feed, aeration, nitrification and denitrification allowing operation with minimal operator assistance.

The original ATAD process can be greatly improved by moving to the second generation ATAD system. All major equipment is moved out of the active digestion tank and should significantly decrease the issues with equipment failures due exposure in the treatment vessel. The second generation ATAD process is able to be retrofitted into the existing tanks available for the existing process. The improvements with this process will have additional impacts due expected improvements of treated sludge quality sent to the belt filter press for final dewatering before disposal. It will also have the ability to improve the water quality of the water that is routed back through the head of the plant.

6.2.2 Air Piping Replacement: From the alternatives to rehabilitate the primary clarifiers, Banner Associates recommends Alternative 2: above ground air pipe replacement. The above ground compressed air pipe is recommended because

of the advantages listed for having an exposed pipe to verify if future leaking takes place and it will be easier to repair future issues as they occur. The cost will be similar to the below grade repair. Unlike the pipe replacement recommended for compressed air line to the air lift pump station, this area does not experience the need for truck traffic over (or under) the air pipe. A properly installed above ground pipeline will have a long service life and will be easier to maintain of problems occur in the future. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

6.2.3 Control System Improvements: Banner Associates recommends providing the control system improvements identified in Section 5. The work includes the addition of variable frequency drives (VFD) for the aeration system blowers, integration of new DO probes to control the aeration process, and new operator interface modules at various locations throughout the WWTF. The new improvements will allow the operating staff regain and improve control of the aeration system as well as the air lift system at the facility. Air can be supplied on an "as needed" by the system to match the loading conditions at the aeration basins. There will be an additional benefit of lower energy consumption by raising and lowering the energy needed for blower operation to match the demand.

6.3 SUMMARY AND ESTIMATE OF PROBALBE COSTS

Costs associated with the recommended improvements summarized above are included in Table 6-1.

Table 6-1: Opinion of Total Project Cost

DESCRIPTION OF WORK AND MATERIALS		COST
ATAD Improvments	$	1,770,000
Air Pipeline Replacement (Blower Building to Air Lift Station)	$	75,000
Air Pipeline Replacement (Blower Building to Aeration Basins)	$	150,000
Sub-Total:	$	1,995,000
Contingencies (20% Construction Costs, 2015)	$	399,000
Opinion of Probable Construction Costs (2015 Construction)	$	2,394,000
Engineering, Surveying, and Construction Services	$	325,000
Administration and Legal	$	48,000
Opinion of Total Project Costs (2015)	**$**	**2,767,000**

*Note: Opinion of Total Project Costs projected to 2015 construction year (assuming 4% Inflation/year)

6.4 MONETARY IMPACT EVALUATION

6.4.1 Operation and Maintenance Costs: The recommended alternatives will result in minor changes to the anticipated operation and maintenance costs for this facility. The improvements indicate that water quality should result in reduced power consumption and reduced chemical feed for dewatering solids. This is not yet verified so, at this time, no credit is taken for these reductions. The improvements represent replacement of existing equipment and will have similar operation and maintenance needs as the previous equipment when it was installed.

6.4.2 User Rate Impact Evaluation: The City of Pierre recently completed a comprehensive Wastewater Rate Study conducted by Missouri River Energy Services. This study considers many factors outside the scope of this facility planning document. While the study takes into account this project it also considers prior recommendations to hire additional staff at the wastewater treatment plant as well additional improvements to the collection system and a more defined reserve account. For short term recommendations, the Missouri River Energy Services study recommends an 18% user fee increase for 2015 and 4% increases each year from 2016 through 2018. These rate increases also account for potential future modifications of the rate structure based on retirement of old debt while considering potential new debt. This report is available upon request of the City of Pierre.

As to this planning document, the opinion of probable project cost is $2,767,000. The City of Pierre would be eligible to seek project funding through the State of South Dakota's State Revolving Grant and Loan Funds, funding through local resources, and other options. Current rates for loans from the State Revolving Loan fund include 3% for 11 to 20 years. Based on a 20 year loan at 3 percent financing (and including a requirement to charge 110 percent of the annual debt retirement cost) the anticipated annual debt retirement for this project would be approximately $204,600 per year. Pierre currently has 6,540 sewer user connections. Assuming the each user connection participates equally in debt retirement and the debt retirement is put into the base fee portion the user fee, the anticipated monthly impact to the user fee is $2.61 per account for this project.

6.5 IMPLEMENTATION PLAN AND SCHEDULE

A common implementation schedule for the recommended improvements is presented in Table 6-2. This schedule recognizes the City's desire for an aggressive schedule to design, bid and construct the project. It should be noted that several of the tasks listed in the schedule are sequential in nature. Failure to maintain the deadline dates for any task may result in delay of later task completion dates.

Table 6-2: Implementation Schedule

Task	Recommended Dates
Acceptance of the Wastewater Facility Plan	January, 2015
State Water Plan Application	Previously Done
Notice To Proceed On Design	February, 2016
Placement on the State Water Plan	Previously Done
Prepare Funding Applications	January, 20165
Submit Plans and Specifications for Review	June, 2016
DENR Approval for Funding Package	July, 2016
Open Bids for Improvements	August, 2016
Start Construction of Improvements	September, 2016
Substantial Completion of Improvements	June, 2017
Final Completion of Improvements	July, 2017
Complete One Year Warranty Period	July, 2018

END OF SECTION 6

APPENDIX A

SDDENR SWD PERMIT AND STATEMENT OF BASIS

APPENDIX B

SDDENR BIOSOLIDS MANAGEMENT PERMIT AND STATEMENT OF BASIS

FACILITY PLAN

Pierre Wastewater Treatment Plant
Specific Equipment Replacement Facility Plan

(Primary Clarifier, Grit Removal, Airlift Pump Feed Pipe)

Amendment - Disinfection and Ancillary Equipment

Pierre, SD

City of PIERRE
on the river • on the move

February 2015

Amended Facility Plan March 2016

Submitted by

Banner Associates, Inc.
www.bannerassociates.com

BAI 21693.00.00

BANNER
Engineering | Architecture | Surveying

FACILITY PLAN

Pierre Wastewater Treatment Plant
Specific Equipment Replacement Facility Plan

(Primary Clarifier, Grit Removal, Airlift Pump Feed Pipe)

Amendment - Disinfection and Ancillary Equipment

Pierre, SD

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
JAMES P.
HOUSIAUX
03-08-16
SOUTH DAKOTA

February 2015

Amended Facility Plan March 2016

Submitted by

Banner Associates, Inc.
www.bannerassociates.com

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BANNER
Engineering | Architecture | Surveying

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SECTION 1: INTRODUCTION, AUTHORIZATION, PURPOSE, AND REPORT ORGANIZATION

1.1. INTRODUCTION, AUTHORIZATION, AND PURPOSE

After the completion of the 2014 Wastewater Treatment Plant System Analysis by Banner Associates, the City of Pierre requested a proposal and agreement for the preparation of a Wastewater Facilities Plan which would address the items identified to be in need of immediate replacement. This Wastewater Facilities Plan is in response to deteriorated pieces of equipment at the Pierre Wastewater Treatment Plant. The facilities evaluation will examine alternatives to effectively and reliably replace the equipment to continue to treat the current and projected future flows and loads.

Preparation of the wastewater system facilities plan was authorized by the City of Pierre in an Employment Agreement for Engineering Services dated November 7, 2014 with Banner Associates, Inc.

Amendment: This report has been updated throughout. The main areas of change include Section 1, Section 2, Section 5 and Section 6. The amendment includes additional items addressing disinfection of the wastewater and some ancillary improvements to the facility. The amendment addresses a requirement in a recent consent decree between the City of Pierre and the South Dakota Department of Environment and Natural Resources (SDDENR). The settlement addressed in the consent decree was due in large part to a significant number of violations related to the chlorine residual and coliform levels measured at the facility. The City of Pierre has agreed to consider improvements to the wastewater treatment facility as a part of the settlement. The initial information previously presented in the original planning document as well as the original organization of the report remain unchanged. Additional sub-sections were added to accommodate the amended items.

The Wastewater System Facilities Plan will serve as a guide for preparation of capital improvements plans for the wastewater treatment plant for the next several years. The scope of this report will address the following:

- Review of the current Pierre Surface Water Discharge (SWD) and Biosolids Management Permits;
- Preparation of an Environmental Information Document;
- Evaluation of the present conditions and future needs;
- Evaluation and alternative selection for the grit removal system, primary clarifiers, and compressed air pipeline; and
- Preparation of a plan for improvements including cost estimates, implementation schedule, and probable impacts on sewer rates.

1.2. ORGANIZATION OF THE REPORT

This report is organized into a total of six sections. The topics covered in each of the sections are summarized as follows:

Section 1	Introduction, Authorization, Purpose, and Report Organization
Section 2	Permit Conditions and Requirements
Section 3	Environmental Information Document
Section 4	Evaluation of Present Conditions and Future Needs
Section 5	Wastewater Treatment Alternatives
Section 6	Recommendations and Capital Improvements Plan

1.3. ABBREVIATIONS

ARSD	Administrative Rules of South Dakota
ATAD	autothermal thermophilic aerobic digestion
BOD_5	Biochemical Oxygen Demand (5-day)
fps	feet per second
gpcd	gallons per capita per day

gpm	gallons per minute
I/I	infiltration and inflow
MGD	million gallons per day
$mW/cm^2/s$	microwatt/centimeter^2/second
NWI	National Wetlands Inventory
SDDENR	South Dakota Department of Environment & Natural Resources
SWD	surface water discharge
TSS	Total Suspended Solids
VAR	vector attraction reduction
WET	whole effluent toxicity
WWTP	wastewater treatment plant

END OF SECTION 1

SECTION 2: PERMIT CONDITIONS AND REQUIREMENTS

The City of Pierre possesses two permits that are reviewed in this section. They include a Surface Water Discharge (SWD) Permit issued by the State of South Dakota and a Biosolids Management Permit that provides authorization to landfill dispose sludge generated at the Pierre wastewater treatment plant (WWTP).

2.1 SURFACE WATER DISCHARGE PERMIT

The City of Pierre currently possesses a Surface Water Discharge (SWD) Permit from the South Dakota Department of Environmental and Natural Resources (SDDENR) permit number SD0020176. The current discharge permit became effective July 01, 2007 and is in effect until a new one is generated by the SDDENR. This permit was scheduled to expire on December 31, 2011 but was administratively extended by the SDDENR. The current SWD permit authorizes the discharge of wastewater effluent from the Pierre WWTP to Lake Sharpe of the Missouri River (Outfall 001). The current SDDENR SWD permit and associated Statement of Basis for the City of Pierre are presented in Appendix A. *Amend – The permit presented in Appendix A is a new permit. Permit SD0020176, effective date October 1, 2015, expires on September 30, 2020*

2.1.1 Effluent limits: The City's current permit allows discharges of treated WWTP effluent via pipeline to Lake Sharpe of the Missouri River. The permit requires that the City's WWTP operations personnel perform routine monitoring to verify compliance with various parameters regulated under the permit. The wastewater quality parameters regulated by the permit include biochemical oxygen demand (BOD_5), total suspended solids (TSS), oil and grease, fecal coliforms, total coliforms, total residual chlorine, pH, and acute whole effluent toxicity (WET). The

specific permit limits in effect at this time are presented in Table 2-1: Effluent Limitations at the Pierre WWTP.

Table 2-1: Effluent Limitations at the Pierre WWTP

Effluent Characteristic	Effluent Limit		
	30-Day Average [1]	7-Day Average	Daily Maximum
BOD_5, mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
E. coli, no./100 mL [2] (May - September 30) *(Amendment)*	126	N/A	235
Total Coliforms, no./100mL [3]	5,000	N/A	20,000
Oil and Grease, mg/L	N/A	N/A	1.0
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	N/A	N/A	0.019
Peracetic Acid (PAA), mg/l	N/A	N/A	1.0
The pH of the discharge shall not be less than 6.6 nor greater than 8.3 in any sample.			
Acute Whole Effluent Toxicity in the discharge 1.0 TU, as measured by the WET test.			
Percentage Removal Requirements (TSS and BOD_5 Limit): In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of thirty (30) consecutive days shall not exceed fifteen (15) percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).			

[1] See Definitions

[2] Fecal Coliform organisms from May 1 to September 30 shall not exceed a concentration of 1,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 2,000 per 100 milliliters in any one sample from May 1 to September 30.

[3] Total Coliform organisms shall not be exceed a MPN of MF of 5,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 20,000 per 100 milliliters in any one sample.

2.1.2 Self-Monitoring Requirements: In addition to the parameters regulated in Table 2-1, the City of Pierre's SWD permit also requires the monitoring and reporting of rate of discharge, influent BOD_5, influent TSS, ammonia-nitrogen, dissolved

oxygen, temperature, molybdenum, and the parameters listed in the Administrative Rules of South Dakota (ARSD), Section 74:52:02:42. All wastewater characteristics that must be monitored and reported under the SWD permit are listed in Table 2-2, as well as their required testing frequency, reporting values, and sample type. These characteristics must be monitored for all discharges, unauthorized releases, and sanitary sewer overflows.

Table 2-2: SWD Permit Self-Monitoring Requirements at the Pierre WWTP

Effluent Characteristic	Frequency	Reporting Values [1]	Sample Type [1]
Rate of Discharge, MGD	Continuous	Daily Maximum; 30-day Average	Instantaneous
pH, Standard Units	Daily	Daily Minimum; Daily Maximum	Instantaneous [2]
Oil and Grease, mg/L [3]	Daily	Presence or absence of sheen; Daily Maximum	Visual/Grab
BOD_5, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
BOD_5, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Total Suspended Solids, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
Total Suspended Solids, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
E. coli, no./100 mL (May 1 - September 30) *(Amend)*	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Total Coliform, no./100 mL	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Ammonia-Nitrogen, mg/L (as N) [6]	Weekly	Daily Maximum; 30-day Average	Grab
Total Residual Chlorine, mg/L (Required only if effluent is chlorinated)	Daily	Daily Maximum [7]	Grab
Dissolved Oxygen, mg/L	Weekly	Daily Minimum	Grab
Water Temperature, °C	Weekly	Daily Maximum; 30-day Average	Instantaneous [8]
Percent Removal (TSS and BOD_5)	Monthly	30-day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [9]	Pass/Fail	Grab
Parameters listed in ARSD, Section 74:52:02:42 and Molybdenum	Annually	Actual Results	As Required [10]

[1] See Definitions

[2] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[3] Oil and grease shall be visually monitored during discharge. In the event that an oil sheen or floating oil is observed during discharge, grab samples shall be taken immediately, analyzed and reported.

[4] The percent removal between the influent and effluent values for this parameter shall also be reported.

[5] For fecal and total coliforms, if a minimum of five samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. *This sampling protocol for fecal coliforms, only applies if the discharge occurs between May 1 and September 30.*

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[7] EPA considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "0" shall be used for reporting and averaging purposes.

[8] The water temperature of the effluent shall be taken as a field measurement at the time of sampling. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[9] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[10] See Section 2.1 for sampling requirements.

The SWD permit outlines the testing procedure required for the whole effluent toxicity (WET) test for acute toxicity. The City of Pierre is required to conduct this test at least once per calendar quarter, with samples collected on a two day progression (i.e., if the first quarterly sample is collected on a Wednesday, during the next quarter sampling shall be on a Friday, etc.). The WET test for acute toxicity shall follow the procedure from the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, October 2002, EPA-821-R-02-012, and the "Region VIII EPA NPDES Acute Test Conditions – Static Renewal Whole Effluent Toxicity Test."

If conflicts arise, the Region VIII document should be used. The City needs to conduct an acute 96-hour static toxicity test using *Pimephales promelas* (fathead minnows) and an acute 48-hour static toxicity test using *Ceriodaphnia dubia* (daphia). The WWTP effluent is considered to be toxic if 50 percent or more mortality is observed at any effluent concentration for either species. If more than 10 percent mortality occurs in the control group, the test needs to be repeated until satisfactory survival is achieved in the control group. See Section 1.5 of the City of Pierre's SWD permit for a detailed discussion on the procedures to be followed if toxicity occurs during a WET test.

2.2 BIOSOLIDS MANAGEMENT PERMIT

The City of Pierre currently possesses a Biosolids Management permit from the SDDENR, permit number SDL020176. The permit became effective April 01, 2013 and is in effect until March 31, 2018. The current Biosolids Management permit authorizes the landiflling of biosolids from the Pierre WWTP (Outfall 201). The current SDDENR Biosolids Management permit and associated Statement of Basis for the City of Pierre are presented in Appendix B.

2.2.1 Biosolids Limits: Biosolids produced at the City of Pierre's WWTP are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered with a belt filter press, and finally disposed of at the City's municipal landfill. All biosolids produced and disposed of at an appropriate permitted landfill shall meet the following requirements:

2.2.1.1 Chemical: Biosolids are required to pass the paint filter and Toxicity Characterization Leaching Procedure (TCLP) tests as well as any other tests required by the landfill.

2.2.1.2 Vector Attraction Reduction (VAR): The potential for attracting vectors, such as mosquitoes, must be reduced by the City of Pierre. To do this, the biosolids that are disposed of at a landfill need to be covered by soil or other material at the end of each operating day.

2.2.2 Self-Monitoring Requirements: In addition to the chemical and VAR requirements listed in Section 2.2.1, the City of Pierre's Biosolids Management permit also requires the monitoring and reporting of total solids and the total amount of biosolids disposed of in landfills. All biosolids characteristics that must be monitored and reported under the Biosolids Management permit are listed in Table 2-3, as well as their required testing frequency, reporting values, and sample type.

Table 2-3: Biosolids Self-Monitoring Requirements at the Pierre WWTP

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test [1]	Annually or prior to disposal at landfill	Pass or Fail	Grab
Toxicity Characterization Leaching Procedure (TCLP) [1]	Once every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

END OF SECTION 2

SECTION 3: ENVIRONMENTAL INFORMATION DOCUMENT

3.1 PROJECT AREA ENVIRONMENT

3.1.1 General Description of Project Area: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. The topography of the Pierre area ranges from rolling hills in the immediate vicinity of the river to relatively flat in areas at a distance of a mile or more from the river. The proposed treatment plant improvements associated with this Report will replace existing equipment that was found to be in poor condition during the 2014 Wastewater Treatment Plant System Analysis completed by Banner Associates, Inc. Expansion to increase the capacity of the treatment plant is not considered at this time since the current loadings are below the design capacity of the treatment plant as discussed in Subsection 4.2 of this report.

The existing WWTP includes screening, raw wastewater pumping, comminutors, grit removal, primary clarification, a trickling filter, activated sludge, final clarification, chlorine disinfection, sulfur dioxide dechlorination, aerobic digestion, and a belt filter press for dewatering of the biosolids before disposal. More details of the treatment processes can be found in Section 4 of this report. Effluent from the Pierre WWTP is continually discharged into the portion of the Missouri River known as Lake Sharpe. This discharge is authorized by the City's Surface Water Discharge (SWD) permit. The City of Pierre also possesses a Biosolids Management Permit which authorizes the disposal of treated biosolids. Both the SWD permit and the Biosolids Management permit are discussed in Section 2 of this report.

3.1.2 Historical, Cultural, and Archeological: The City of Pierre is located in the central region of South Dakota on the east bank of the Missouri River downstream of the Oahe Dam. Pierre is the Capitol of South Dakota and the county seat of Hughes County.

The City's transportation facilities include bus lines, the Rapid City, Pierre and Eastern (RCPE) Railroad, U.S. Highway No. 14 and No. 83, and S.D Highway No. 34. Airline service at the Pierre Regional Airport is provided by Great Lakes Airlines and multiple small commuter airlines.

The City of Pierre has established a strong economic base of agricultural trade, agricultural related industry, tourism, and retail business. Significant industrial, commercial and institutional establishments in the City of Pierre include the following:

- State Government
- Tourism, especially that related to hunting, fishing, and other outdoor recreation opportunities abundant in the area.
- Regional center for medical care services
- Regional center for shopping and commercial business
- Conventions

The development of the project will not adversely affect any sites listed in the register of National Historic Places. According to information available from the U.S. National Park Service, there are 28 registered historic places within the immediate vicinity of Pierre. The closest registered historic place to the existing WWTP is approximately 0.8 miles. Verification of historic sites may be requested from the South Dakota State Office of Cultural Preservation.

The land in the study area was originally rich in wild game and fur bearing animals. Prior to settlement, the area was frequented by nomadic Indians, fur trappers and traders. An archaeological review or inspection of the site will not be completed prior to initiation of construction since the proposed improvements will replace existing equipment only. No previously undisturbed soils will need to be disturbed during the construction phase of this project.

3.1.3 Floodplains, Wetlands, and Aquifers

3.1.3.1 Floodplains: The original wastewater treatment equipment that is proposed to be replaced was constructed above the 100 year flood elevation. The U.S. Army Corps of Engineers' "Flood Hazard Report - Missouri River" dated May, 1988 shows that the 100 year flood elevation for Lake Sharpe near La Framboise Island is approximately 1427.5. The "ice-affected" 100 year flood elevation is reported to be approximately 1428.5. These elevations are based on the datum used by the Corps of Engineers. The Pierre WWTP elevations are based on the City of Pierre elevation datum which is 2.56 ft. higher than the Corps of Engineer's datum. This means the 100 year "ice-affected" flood elevation at the wastewater treatment facility is 1431.06 on City of Pierre datum. Since this project involves replacing the internal primary clarifier and grit removal components, the elevations of the existing concrete tank structures will not be changed in any way. The water surface elevations within the treatment process are high enough to permit unobstructed discharge during high water conditions.

3.1.3.2 Wetlands: It is anticipated that construction of the proposed wastewater treatment plant improvements will not impact any area considered as

natural wetlands, as defined by the National Wetlands Inventory (NWI). All construction activity will take place within the extents of the existing facility.

3.1.3.3 Aquifers: The existing wastewater treatment plant is located over the Missouri River outwash aquifer. The aquifer is a shallow groundwater source for the City of Pierre as well as a number of irrigation systems in the area. The soil materials in the aquifer consist of fine-grained to coarse-grained glacial deposits of outwash. The aquifer thickness varies from less than 10 feet to more than 65 feet. The overburden soils consist of fine grained topsoil and lean clay materials. The aquifer is recharged primarily by movement of water from the Missouri River into the sand and gravel deposits.

3.1.4 Agricultural Lands: The proposed construction area will not affect agricultural lands. The land to be used for the proposed improvements is within the extents of the original wastewater treatment plant. The project will not have long term adverse impacts on agricultural land.

3.1.5 Wild and Scenic Rivers: The reach of the Missouri River near the existing treatment plant is controlled downstream by the Big Bend Dam at Fort Thompson and upstream by the Oahe Dam. The Missouri River at Pierre is a part of the mainstem reservoir system and is not a free flowing river. The area is heavily used as a recreational area for fishing, hunting, camping, boating, and other outdoor recreational activities. The construction of the improvements at the wastewater treatment plant is not expected to cause any permanent changes to the recreational use of the resources. The wastewater treatment

plant is screened from view from the river by trees standing between the treatment facility and the Missouri River.

3.1.6 Fish and Wildlife Resources: Fish and wildlife are abundant in the Pierre area and the tourism related to the fish and wildlife resources are a significant factor in the local economy. The impoundment of the Missouri River and the public lands in the area provide many opportunities for fishing, hunting, and other related activities.

3.1.6.1 Fish: Fish populations in the Missouri River impoundments are an important resource for the area and state. The species of fish found in the Missouri River impoundments and tributary creeks include walleye, lake trout, northern pike, perch, minnows, pan fish, sturgeon, paddlefish, catfish, bullheads, and assorted rough fish. The Missouri River is used for fishing throughout the year.

3.1.6.2 Wildlife

3.1.6.2.1 Aquatic and Semiaquatic Species: Hughes County and the study area lie within the central flyway of the north central United States which serves as a major migratory route for waterfowl. Commercial waterfowl hunting is widespread in the area and is an important source of income for numerous individuals in the Pierre area. The flyway is also known to be used by the whooping crane, an endangered species. The construction and operation of the WWTP improvements is not expected to have an impact on the migratory patterns of the waterfowl.

3.1.6.2.2 Terrestrial Species: Most species of wildlife which occur in eastern South Dakota are found in the proposed project area. Big game species are hunted with both gun and bow and include turkey, white-tailed deer, and mule deer. Furbearers in the area include fox, coyote, weasels, skunks, badgers, raccoons, squirrels, rabbits, and other wildlife during all seasons with moderate trapping taking place during the prime season.

Many bird species have been recorded by local bird clubs both during migration and also during nesting season. The pheasant population fluctuates but is generally above average compared to the rest of the state. They are heavily hunted each fall. Occasional coveys of partridge are also found.

3.1.6.3 Endangered Species: According to the U.S. Fish and Wildlife Service, endangered species known to occur within Hughes County include the whooping crane, bald, eagle, piping plover, least tern, and pallid sturgeon. The construction activities may limit the use of the trees by birds in the immediate vicinity of the construction site while construction activities are underway. No long term change to the area or impact on endangered species is expected as a result of the project.

3.1.7 Air Quality: The proposed project area and Hughes County in general have no major air quality problems. Local air quality problems occur due to odors from different sources such as wastewater treatment facilities, livestock feeding operations, manure pits, and numerous other sources. Dust storms also occur on occasion; particularly in dry years when inadequate soil cover has been

allowed to remain on the land surface. The proposed project is not expected to have any long term adverse impact on air quality on the area. The treatment plant improvements will not alter the present conditions regarding odors. There will be short-term impacts during construction due to fugitive dust and heavy equipment operation.

3.1.8 Water Quality and Quantity

3.1.8.1 Surface Water: The major surface water body near the existing WWTP and proposed improvements is the Lake Sharpe impoundment of the Missouri River. According to the 2014 South Dakota Integrated Report for Surface Water Quality Assessment, the beneficial use categories of Lake Sharpe of the Missouri River are as follows:

- (1) Domestic water supply
- (2) Coldwater permanent fish life propagation waters
- (7) Immersion recreation waters
- (8) Limited-contact recreation waters
- (9) Fish and wildlife propagation, recreation, and stock watering waters
- (10) Irrigation waters
- (11) Commerce and industry waters

The water quality requirements for the designated beneficial use categories are summarized in Table 3-1. The most restrictive beneficial use category is applied when determining water quality requirements for a discharge from a wastewater treatment facility.

Table 3-1: Beneficial Use Categories

Parameter	(1) Domestic Water Supply	(2) Coldwater Permanent Fish Life Propagation	(7) Immersion Contact Recreation	(8) Limited-Contact Recreation	(9) Fish & Wildlife Propagation, Stock Watering	(10) Irrigation	(11) Commerce and Industry
TDS, mg/L	1000				2,500		2,000
NO_3, mg/L as N	10.0				50		
pH, units	6.5 to 9.0	6.5 to 9.0			6.0 to 9.5		6.0 to 9.5
Coliform, total (per 100 mL)	5,000 (mean); 20,000 (single sample)						
Coliform, fecal (per 100 mL)			200 (mean); 400 (single sample)	1,000 (mean); 2,000 (single sample)			
Escherichia coli (per 100 mL)			126 (mean); 235 (single sample)	630 (mean); 1,178 (single sample)			
Barium, mg/L	1.0						
Chloride, mg/L	250	100					
Fluoride, mg/L	4.0						
Sulfate, mg/L	500						
Total Chlorine Res., mg/L		0.019 (acute) 0.011(chronic)			0.019 (acute) 0.011 (chronic)		
Nitrogen, Total Ammonia, mg/L as N		Equation-based standard					
Dissolved Oxygen, mg/L		≥6.0	≥5.0	≥5.0			
Undissoc. H_2S, mg/L		0.002					
TSS, mg/L		30					
Temp., °F		65					
Alkalinity, mg/L as $CaCO_3$					750		
Conductivity, mmhos/cm					4,000	2,500	
Sodium Adsorption Ratio						10	
Total Petrolium Hydrocarbons	≤ 1.0				≤ 10		
Oil and Grease					≤ 10		

3.1.9 Recreational Facilities: The Pierre wastewater treatment plant is located immediately adjacent to the softball complex used by the recreational leagues in the City of Pierre. Since this project will not consist of an expansion but rather an upgrade of select existing equipment, it is not anticipated that this project will interfere with the use of the softball complex.

3.2 PROJECT PURPOSE AND NEED

The proposed improvements will replace existing equipment at the Pierre WWTP that has reached the end of its useful life. The existing equipment proposed to be replaced is in bad condition and has the potential to fail which would cause multiple operational difficulties and potential problems with meeting the City of Pierre's SWD permit. The existing wastewater treatment plant is described in Section 4 of this report. The alternatives for upgrading the treatment plant are described in Section 7.

The proposed improvements will provide a treatment system with the reliability needed to handle the present and future flows and loads while meeting the requirements of the SWD permit as discussed in Subsection 2.1. The need for the project is demonstrated by the poor condition of the primary clarifier mechanisms and drives, grit removal equipment, and the leak that exists in the compressed air pipe between the blower building and the air lift pump station.

3.3 PROJECT IMPACT

3.3.1 Direct and Indirect Impacts on Environment: Previous portions of this section have addressed the impact of the proposed project on water quality, fish and wildlife, historical and archaeological sites and air quality. The remainder of this

section addresses other impacts of the proposed project and mitigation measures that may be necessary to limit adverse impacts.

3.3.1.1 Land Resources: Construction of the proposed improvements will require removal of existing primary clarifier and grit removal equipment, rehabilitation of the existing concrete tanks, and installation of new primary clarifier and grit removal equipment. Excavation and stock piling of excavated materials and site grading work may also be required, depending on whether or not the new air piping from the blower building to the air lift station is installed above or below ground. Potential adverse environmental impacts during construction include short term localized erosion and airborne dust from the construction site through wind action and heavy equipment use. Erosion and sediment control practices include both temporary measures such as temporary fencing, erosion control barriers, and seeding and grading of properly sloped drainage ways.

3.3.1.2 Air Resources: Air quality may be degraded by increased particulate levels during excavation and construction work associated with the proposed improvements. Temporary increases in construction equipment emissions are not expected to be significant to the general impacted area. Measures that can be taken during construction to control excessive airborne dust are listed below.

- Watering and/or the use of dust retardants before and during construction,
- Stabilizing temporary and permanent access roads to prevent erosion,

- Proper placement and compaction of stockpiled soil and excavated material to reduce particulates,
- Regrading, resurfacing, and/or reseeding dust-prone areas and disturbed terrain immediately, and
- Limiting construction activities during periods of high winds.

3.3.1.3 Wildlife Resources: The proposed project will result in construction activities within the extents of the existing WWTP. Wildlife will be deterred from occupying the area immediately adjacent to the site due to construction activities. No long term effects on wildlife are expected as a result of this project. It is doubtful that there will be a threat to any endangered species of animals or plants.

3.3.1.4 Cultural Resources: The construction and operation of the wastewater treatment plant improvements is not expected to have any significant adverse short or long-term impact on cultural resources of the area. All work covered in this project will take place within existing structures or within previously excavated trenches. In the event that archaeological or historic resources are unearthed during construction excavation, the immediate stoppage of work is dictated by a required condition in the contract specifications.

Construction should bring a slight economic boost to the area through the hiring of local labor, retail trade by construction employees, and purchase of miscellaneous building supplies and fuel.

3.3.2 Impact on the Environment with no Improvement Action Taken: If no action is taken to improve the existing wastewater treatment facility components

outlined in this report, there is a potential for the components to fail. The primary clarifier mechanisms and drives as well as the grit removal equipment should be replaced with new equipment to increase reliability. The leaking compressed air pipeline that supplies the air lift pump station should be replaced to save energy and maintenance costs with regard to the blowers. No action will result in continued and prolonged wasting of energy from the leaking compressed air pipe. No action will also increase the possibility of the grit removal and primary clarifier systems failing. If the grit removal system fails, it would result in damaged pumps and increased maintenance costs downstream of the grit chamber. If the primary clarifier mechanisms were to fail, the biological treatment systems could potentially be overloaded with solids and organics which could result in SWD permit violations. In summary, the WWTP should be upgraded to provide a long term safe means of handling wastewater.

END OF SECTION 3

SECTION 4: EVALUATION OF PRESENT CONDITIONS AND FUTURE NEEDS

4.1 PROJECT NEED AND PLANNING AREA IDENTIFICATION

Select improvements to the Pierre WWTP are necessary to ensure continued good performance of the treatment plant. In the 2014 Wastewater Treatment Plant System Analysis, multiple treatment components were identified to be in poor condition and were recommended for immediate replacement. The project improvement area is defined as the area within the city limits of the City of Pierre. This section will determine the present flows and loads and analyze the capacity and effectiveness of the existing WWTP treatment components to treat the present and future flows and loadings.

4.2 EXISTING FACILITIES DESCRIPTION

4.2.1 Existing Wastewater Treatment Plant: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River. Wastewater is conveyed to the treatment plant through nine (9) lift stations located in and around the City of Pierre. The wastewater treatment plant provides both primary and secondary treatment of the influent wastewater. The pretreatment facility consists of screening, pumping, comminution, grit removal, and flow measurement. Primary treatment is provided by two (2) primary clarifiers with provisions for a third future primary clarifier. Primary effluent is pumped to secondary treatment, which consists of one (1) trickling filter unit followed by a complete mix activated sludge system. An air lift pump station is provided between the trickling filter and complete mix activated sludge basins in order to raise the hydraulic grade line to the necessary level for the activated sludge and final clarification units. Secondary clarification is achieved with two (2) final clarifiers with provisions for a third future final clarifier. Return activated sludge (RAS) is recycled to the air lift pump station and waste activated sludge (WAS) is thickened using a dissolved air flotation (DAF)

unit. Wastewater effluent is disinfected subsequent to secondary clarification using chlorine injection. Sulfur dioxide is then used to neutralize any residual chlorine. Finally, disinfected effluent from the plant flows by gravity to Lake Sharpe of the Missouri River. Figure 4.1 shows the location of the existing WWTP.

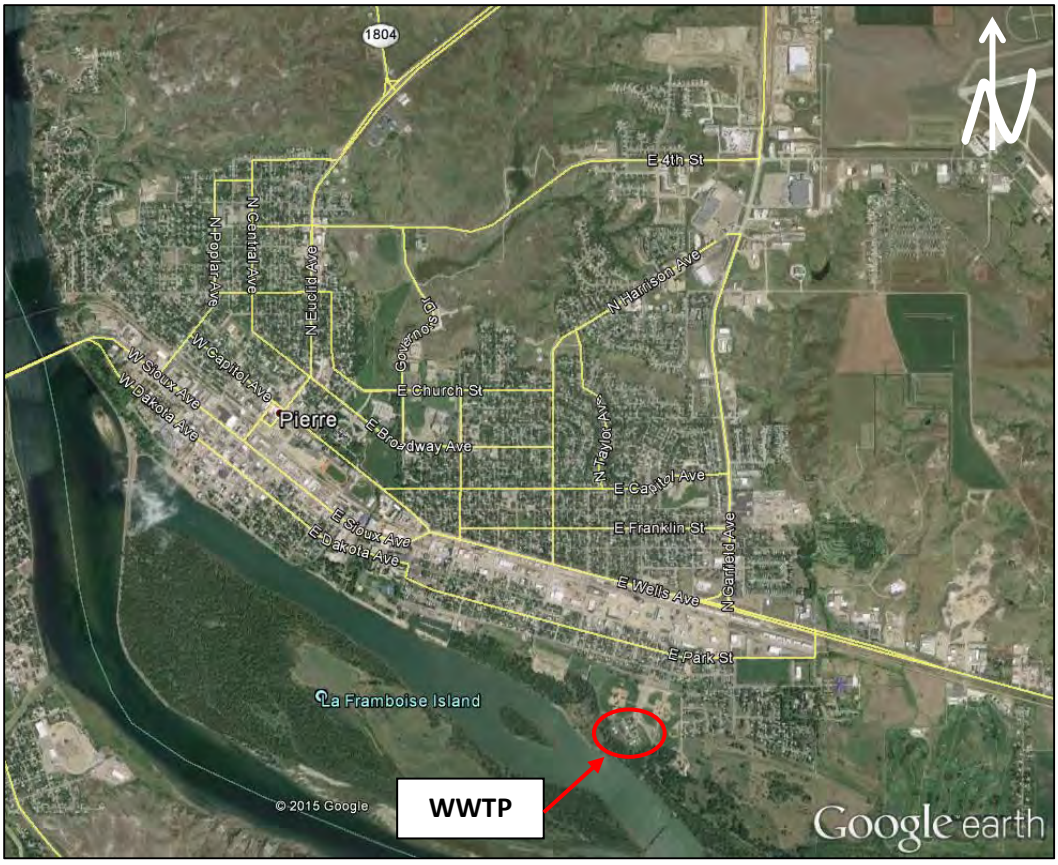

Figure 4-1: Wastewater Treatment Plant Location

4.2.2 Existing Wastewater Flows and Loads: The City of Pierre keeps and maintains flow and loading records for the WWTP. Flow at the Pierre WWTP is measured at two different locations with parshall flumes. The influent parshall flume has a 9-inch throat width and is located immediately downstream of the grit removal process. The effluent parshall flume has a throat width of 18 inches and is

located downstream of the final clarifiers. Both flumes use ultrasonic level detectors to monitor height of water in the flumes and calculate corresponding flow rate. The operations personnel track daily flow volumes and the peak flow records. For a complete list of the wastewater parameters that must be tracked and reported under the City's SWD permit, see Section 2.1 of this report.

Daily flow records and routine solids and organic loading data for the year 2014 were used to determine the existing loads to the facility. The 2014 data used to calculate the existing loads to the facility are provided in Appendix C. Data from 2014 was chosen for these calculations because of the adverse impacts the 2011 flood had on the data from 2011 through 2013. Although the flood had receded in 2011, the cleaning of sewers throughout the city in 2012 and 2013 resulted in unusually high solids and organics content in the raw wastewater. Using the data from 2011 through 2014 would give an unrealistic representation of the quality of the wastewater and result in WWTP components being designed for conditions that are unlikely to occur again in the future. Based on the data presented in Appendix C, the results of the analysis of the influent records are presented in Table 4-1.

Table 4-1: Present Conditions of Influent Flows and Loadings

Condition	Flow, MGD	BOD_5, mg/L	BOD_5, lb/d	TSS, mg/L	TSS, lb/d
Average Day	1.51	282	3,551	296	3,728
Peak Month	1.89	428	6,746	576	9,079
Peak Day	2.36	676	13,305	1,387	27,299

According to the US Census Bureau, the estimated population for the time frame represented by the records shown in Table 4-1 is 13,984. This population yields an average daily flow rate of 108 gallons per capita per day (gpcd). If the average

daily flow rate is greater than 125 gpcd, the cost of correction of inflow/infiltration (I/I) must be considered when developing treatment alternatives. Since the current average daily flow rate is less than 125 gpcd, inflow and infiltration mitigation is not discussed in this report.

Compared to the 1997 Facility Plan prepared by Banner Associates, the present influent flow conditions have slightly declined. The 1997 Facility Plan averaged the influent loading data from 1994, 1995, and 1996. This pervious data showed an average daily flow of 1.79 MGD or 132 gpcd compared to today's average daily flow of 1.51 MGD or 108 gpcd. The change in average daily flow from 1.79 MGD in 1997 to 1.51 MGD today represents a 15.6% reduction. With this reduction in flow, however, came an increase in the solids and organics concentration of the wastewater. The average TSS concentration increased from 214 mg/L in the 1997 Facility Plan to 296 mg/L today. The average BOD_5 concentration increased from 263 mg/L in the 1997 Facility Plan to 282 mg/L today. This increase in solids and organics content would be expected since the population of Pierre has increased from 13,600 at the time of the pervious Facility Plan to an estimated 13,984 today. When looking at the solids and organics loading on the WWTP in terms of pounds per day, the loading has not significantly changed since the 1997 Facility Plan.

4.2.3 Future Wastewater Flows and Loads: Since this Facility Plan outlines the need and options to replace existing pieces of equipment, an examination of anticipated future wastewater flows and loads was not completed. The present loading data presented in Table 4-1 shows a present average day flow of 1.51 MGD and a peak day flow of 2.36 MGD which are both below the design conditions used during the 1999/2000 major facility improvements. When designing the 1999/2000 facility improvements, an average day flow of 2.2 MGD and a peak day of 4.4 MGD were used. Because the influent loadings are not yet

reaching the facility's maximum capacity, expansion of the WWTP to increase capacity is not considered at this time.

4.3 EVALUATION OF TREATMENT PROCESS EQUIPMENT

This section details the process equipment that is recommended for immediate replacement, which includes the primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the underground compressed air pipeline between the blower building and the air lift pump station. Other treatment process equipment not described in this section should be monitored and included within a subsequent planning document.

4.3.1 Grit Removal System: Directly after passing through the comminutors, wastewater flows through a 20-inch pipe to the grit chamber. The grit removal system at the Pierre WWTP consists of an influent vault, a 10-foot diameter vortex grit removal chamber, an air lift grit removal system, and a grit classifier which cleans and dewaters the grit that is removed from the chamber. The grit removal equipment can be seen in Figure 4-2. A well-functioning grit removal system is an important part of the pretreatment process because it removes sand, small pebbles, and other dense material that can damage pumps and accumulate in tanks downstream which in turn increases maintenance costs.

Figure 4-2: Grit Removal System Components

The grit removal equipment has been weathered harshly, showing severe rust and corrosion on the exposed ferrous surfaces. It is recommended that the existing grit removal and classifier equipment be replaced to ensure proper grit removal from the wastewater into the future. In its current condition, it is likely that the performance of the grit removal system will be compromised at some point in the future.

4.3.2 Primary Clarifiers: After leaving the grit chamber, wastewater passes through the influent parshall flume for flow measurement and then flows through a 24-inch pipe into the primary clarifier distribution box which evenly splits the flow between the two (2) primary clarifiers. This distribution box also has a third piping stub so another clarifier can be easily added to the WWTP when it becomes necessary. Each primary clarifier has a weir diameter of 53 feet, an

overall diameter of 60 feet, and a side water depth of 8.09 feet. The primary clarifiers are covered with aluminum domes in order to reduce problems with icing in the winter and to improve performance during windy conditions. The clarifiers serve to separate solids from the wastewater by gravity settling and flotation. The solids that collect at the bottom of the clarifier are plowed to the center "sludge pocket" by scrapers on the clarifier mechanism. The clarifier mechanism is rotated by a small electric motor. The floating materials are removed by a scum skimmer that directs the scum to a scum box on the clarifier wall. The clarified wastewater flows over peripheral effluent weirs into a channel that directs the flow to an effluent box. The settled solids or "sludge" are pumped to the autothermal thermophilic aerobic digestion (ATAD) system for further treatment. The floating solids or "scum" are also pumped to the ATAD system. The present condition of the primary clarifiers can be seen in Figure 4-3.

The primary clarifiers were designed to remove 40 to 60 percent of TSS and 20 to 35 percent of BOD_5 in the raw wastewater. Laboratory data recorded by the City of Pierre shows that the primary clarifiers have performed well in recent years. In 2014, the primary clarifiers removed 60 to 70 percent of TSS and 40 to 50 percent of BOD_5 in the raw wastewater, which exceeds the original design conditions. Although provisions are in place to allow a third primary clarifier to be easily added, another clarifier is not needed at this point in time. The two existing primary clarifiers are capable of handling present loading conditions as well as the anticipated loading conditions of the foreseeable future.

Figure 4-3: Primary Clarifiers and Mechanisms

The clarifier mechanisms and drives are in poor condition and are recommended to be replaced. All ferrous metal surfaces have rusted severely in the humid environment and are at risk of failure. If the clarifier mechanisms were to fail, solids and organics would not be removed as efficiently as they are normally and more solids and organics would be sent to downstream processes, placing unnecessary stress on the trickling filter and activated sludge system.

4.3.3 Compressed Air Pipeline: The underground air pipeline between the blower building and the air lift pump station supplies compressed air from the air lift blowers to the air lift pump station. The air lift pump station is located downstream of the trickling filter and is used to raise the hydraulic grade line of the wastewater to the necessary level for the activated sludge and final clarification units. This pipe is known to leak by City staff and should be replaced. The air leak in this pipe means that more energy is required to supply air to the

air lift pump station than is necessary, which is increasing operation and maintenance costs of the air lift blowers. The air lift pump station and compressed air pipe in question can be seen in Figure 4-4. Please note that the portion of the pipe that is leaking is located underground, not the above ground portion shown in Figure 4-4.

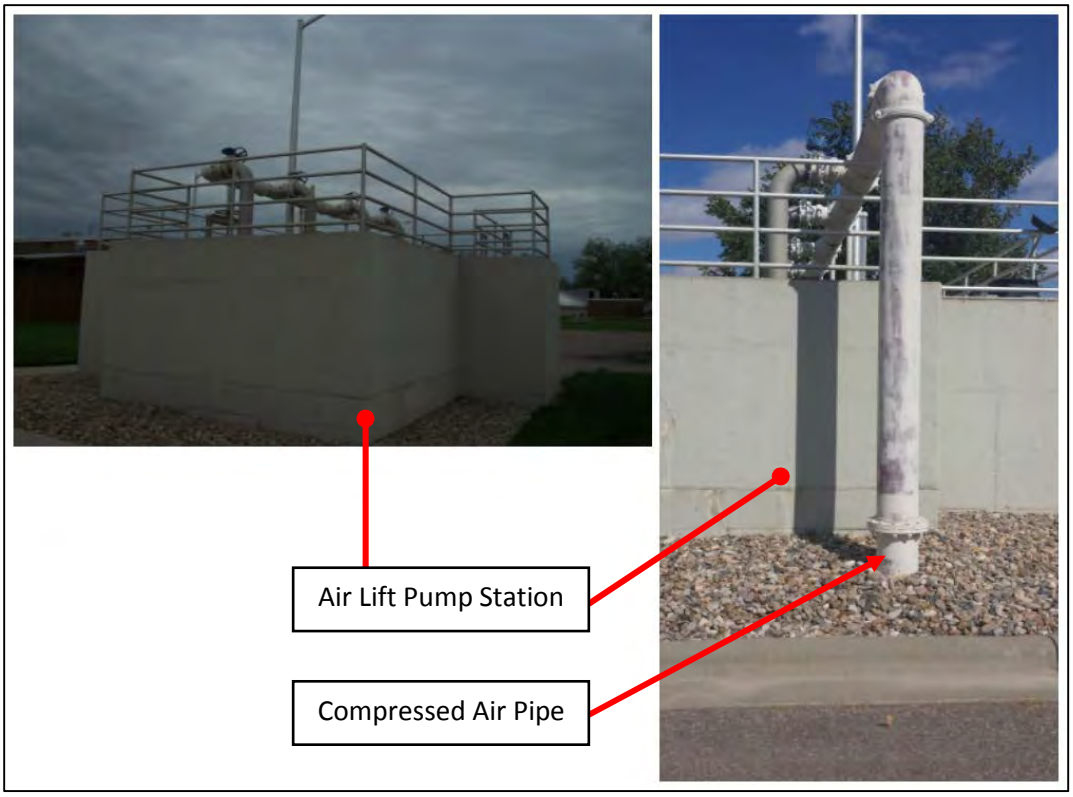

Figure 4-4: Air Lift Pump Station and Compressed Air Pipe

4.4 SUMMARY

The components listed in this section for replacement were originally identified for replacement in the 2014 Wastewater Treatment Plant System Analysis completed by Banner Associates. In this previous report the primary clarifier mechanisms and drives, grit removal and grit washing equipment, underground compressed air pipeline between the blower building and air lift pump station, and the trickling filter feed pump

were recommended for immediate replacement. The trickling filter feed pump was not discussed in this section because the City of Pierre indicated that it would be addressed through the maintenance budget rather than through a separate project. Along with the components that were recommended for immediate replacement, the previous report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. These items should be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

END OF SECTION 4

SECTION 5: WASTEWATER TREATMENT ALTERNATIVES

5.1 GENERAL REQUIREMENTS AND CONDITIONS

The purpose of this section of the report is to review alternatives to provide reliable treatment to meet existing and future planned hydraulic and organic loading conditions. Section 4 of this report includes a discussion of the existing wastewater treatment plant and loading conditions as well as an estimate of the future anticipated loading conditions.

5.1.1 Site Conditions: The proposed site for the improvements lies within the extents of the existing wastewater treatment plant. The existing WWTP is located on the southeast side of Pierre in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. As mentioned in Section 4 of this report, three (3) items were identified for immediate replacement in the 2014 Wastewater Treatment Plant System Analysis: primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the compressed air pipeline between the blower building and air lift pump station. Along with the components that were recommended for immediate replacement, the previous report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. These items should be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

5.1.2 Amendment Information All of the prior information related to the replacement of the grit removal equipment, primary clarifiers, and air piping to the air lift pump station was previously presented in this report. This amendment includes additional items addressing disinfection of the wastewater and some ancillary

improvements to the facility. This document is not a complete Facility Plan covering the entire facility. This amendment addresses a requirement in a recent consent decree between the City of Pierre and the South Dakota Department of Environment and Natural Resources (SDDENR). The settlement addressed in the consent decree was due in large part to a significant number of violations related to the chlorine residual and coliform levels measured at the facility.

At one time, the Pierre WWTF used its outfall pipe for chlorine contact. Approximately fifteen years ago, Pierre converted an original final clarifier tank to the chlorine contact basin. The tank is arranged to operate with water entering the center of the tank and then migrating out to the perimeter weirs just as it did when it served as a final clarifier. Chlorine is injected at the point where water enters the contact tank and the contact time is generated as the water travels from the center of the tank to the effluent weir. The arrangement does little to control the actual contact time in the same manner as a tank with serpentine walls that assures travel time through the tank.

Due to the compliance issues addressed in the consent decree and the physical limitations of the existing chlorine contact facility, it has been deemed necessary to consider alternate disinfection facilities. This report will consider using chlorine/dechlorination, UV disinfection, and ozone disinfection for the needs of the Pierre facility. All improvements included in this document are planned to take place on property owned by the City of Pierre for the wastewater treatment facility.

5.2 DESCRIPTION OF ALTERNATIVES

The alternatives considered for the equipment replacement are as follows.

Grit Removal Rehabilitation Alternatives:

- Grit Removal Alternative 1: Vortex Grit Removal
- Grit Removal Alternative 2: Grit Separator
- "No Action" Alternative

Primary Clarifier Rehabilitation Alternatives:

- Primary Clarifier Alternative 1: Stainless Steel Mechanisms and Drives
- Primary Clarifier Alternative 1: Carbon Steel Mechanisms and Drives
- "No Action" Alternative

Compressed Air Pipeline Replacement (Blower Building to Air Lift Station) Alternatives:

- Compressed Air Pipeline Replacement Alternative 1: Below Ground Pipe
- Compressed Air Pipeline Replacement Alternative 2: Above Ground Pipe
- "No Action" Alternative

Disinfection Improvements Alternatives

- Disinfection Alternative 1: Chlorination/Dechlorination
- Disinfection Alternative 2: UV Disinfection
- Disinfection Alternative 3: Ozone Disinfection
- Disinfection Alternative 4: "No Action" Alternative

Ancillary Improvements

5.3 EVALUATION OF ALTERNATIVES

5.3.1 Grit Removal Rehabilitation Alternatives

5.3.1.1 Grit Removal Rehabilitation Alternative 1: Vortex Grit Removal

The existing grit chamber is a vortex style chamber that is cylindrical in shape with a cone shaped bottom. Wastewater enters the chamber tangentially and flows around the tank with the help of a mechanically induced vortex while the grit settles around the cone and eventually falls into the center of the chamber where it is then removed by a pump. The pump transfers the grit to the grit classifier which dewaters the grit and conveys it to a disposal container.

This alternative would replace the old carbon steel vortex grit removal equipment as well as the classifier with new stainless steel equipment of the same style. This alternative would require little or no modifications to the existing concrete tank and would simply replace the old equipment with new equipment. The stainless steel material would give the grit removal equipment corrosion resistance to prevent shortened life of the system.

5.3.1.2 Grit Removal Rehabilitation Alternative 2: Grit Separator

A grit separator is a relatively new technology which is similar in principle to the vortex grit chamber. This system can achieve higher grit removal rates than the vortex grit chamber outlined in Alternative 1 because it prevents the wastewater from short circuiting and leaving the grit chamber before the grit has had time to settle. Another benefit of this system is that there are no moving parts inside the chamber, which would save money in terms of operation and maintenance costs. Like the vortex grit removal system, grit that has settled to the bottom of the tank would be removed by pumps and directed to a grit classifier for dewatering and disposal.

If this alternative were chosen, major modifications would need to be made to the existing concrete chamber structure. Also, this style of grit removal system would require a higher hydraulic grade on the influent side of the process than currently exists. A lift station would need to be added upstream of the grit removal process to achieve this higher hydraulic grade. As a result, this alternative was given no additional consideration.

5.3.1.3 "No Action" Alternative

If no action were taken on the grit removal system, it is likely that the performance of the grit removal system will be compromised at some point in the future. A well-functioning grit removal system is an important part of the pretreatment process because it removes sand, small pebbles, and other dense material that can damage pumps and accumulate in tanks downstream which would increase maintenance costs.

5.3.1.4 Probable Costs

The replacement of the existing internal grit removal equipment with new components including new grit mechanism, grit classifier, pipe and valve replacement, concrete repair and other ancillary work is estimated to be $293,000. No additional costs were estimated for the alternate grit removal system.

5.3.2 Primary Clarifier Rehabilitation Alternatives

5.3.2.1 Primary Clarifier Rehabilitation Alternative 1: Stainless Steel Mechanisms and Drives

As previously discussed, the existing primary clarifier mechanisms are severely corroded and need to be replaced. The analysis of the current flow and loading conditions influent to the wastewater treatment plant differs little from the existing conditions presented in the old facility plan. Based on the previous facility planning document, the planning to address higher flows, when they occur, will be to construct an additional primary clarifier of similar size. The current facility already has a structure and piping stubs in place for a third clarifier feed. Based on this information, it is appropriate to replace the current mechanisms to fit the current clarifier structures.

Under this alternative, the heavily corroded carbon steel equipment would be replaced with all stainless steel equipment, including the mechanisms, drives, launders, and bridges of both primary clarifiers. This alternative would have a higher initial cost than carbon steel but would also have lower maintenance costs than carbon steel because it would not have coatings to be maintained. This alternative would help ensure that the primary clarifier equipment lasts longer than the fifteen (15) years that the old equipment lasted.

5.3.2.2 Primary Clarifier Rehabilitation Alternative 2: Carbon Steel Mechanisms and Drives

This alternative would replace the existing primary clarifier equipment with new carbon steel equipment, and would include the mechanisms, drives, launders, and bridges in both primary clarifiers. This alternative would have a lower initial cost than the stainless steel in Alternative 1, but would also

have a higher annual maintenance cost because the high performance coatings on the steel would have to be maintained to prevent corrosion. If the coatings are not maintained, the new carbon steel equipment could corrode quickly in the humid environment similar to the original equipment.

5.3.2.3 "No Action" Alternative

The existing primary clarifier mechanisms and drives are constructed of carbon steel and were originally coated to protect the steel from corrosion. Since the original installation during the 1999 and 2000 major facility improvements, the steel coatings were not properly maintained which led to major corrosion issues in the humid environment. This alternative would leave the primary clarifiers as is with no improvements made. If the old clarifier mechanisms were to fail, solids and organics would not be removed as efficiently as they are normally and more solids and organics would be sent to downstream processes, placing unnecessary stress on the trickling filter and activated sludge system.

5.3.2.4 Probable Costs

Replacement of the existing primary clarifier mechanisms with new stainless steel mechanisms has an opinion of probable cost of $709,000. The cost for just the material and installation of each mechanism is estimated at $326,250. An equivalent opinion of probable cost for a carbon steel mechanism would be $260,000 without the high performance coatings. High performance coatings for each mechanism are expected to be in the range of $40,000 to $50,000. This brings the overall cost of the options close to each other.

5.3.3 Compressed Air Pipeline Replacement Alternatives:

5.3.3.1 Compressed Air Pipeline Replacement Alternative 1: Below Ground Pipe

This alternative would involve excavation to remove and replace the existing compressed air pipe that serves the air lift pump station from the blower building. The new pipe would be constructed of 10-inch mechanical joint ductile iron pipe with heat resistant gaskets. Advantages of this option include a lower price and the below ground pipe will not obstruct travel in the area.

5.3.3.2 Compressed Air Pipeline Replacement Alternative 2: Above Ground Pipe

This alternative would involve abandoning the existing compressed air pipe that serves the air lift pump station from the blower building and installing a new pipeline above ground. This new pipeline would be constructed of 10-inch welded stainless steel pipe and installed twelve (12) to fourteen (14) feet above ground with the use of pipe supports. Advantages of this alternative over the below ground alternative would be that leaks in the piping would be easier to detect and that any leak found would be easier to repair.

5.3.3.3 "No Action" Alternative

If no action were taken on the compressed air pipe between the blower building and air lift pump station, air would continue to leak from the pipe and energy would continue to be wasted in the form of electricity used to power the air lift blowers. If the existing compressed air pipe were to completely collapse, air could no longer be supplied to the air lift pump station which would disrupt the treatment of wastewater and backup the treatment processes upstream.

5.3.3.4 Probable Costs

The replacement of the underground air piping with similar underground construction has an opinion of probable cost of $29,000. The replacement of the same airline with an above ground air piping system has an opinion of probable cost near $45,000.

5.3.4 Disinfection Alternatives

5.3.4.1 Disinfection Alternative 1: Chlorination/Dechlorination

As previously discussed, the existing disinfection system is inadequate and needs to be replaced. In addition to the arrangement of the chlorine contact tank, the existing chemical handling and feed equipment should be replaced to update and meet current technologies and feed rates. The analysis of the current flow and loading conditions influent to the wastewater treatment plant differs little from the existing conditions presented in the old facility plan. The hydraulic rate for the chlorine contact tank matches the hydraulic capacity of the Pierre Wastewater Treatment Plant. An analysis of the various engineering guidance documents indicates a range of minimum contact times from 15 minutes to 30 minutes. Ten State Standards provided the 15-minute minimum. The EPA's Manual of Practice No. 8, which gathers information from many technical engineering guidance books uses 30 minutes as a minimum contact time at all flows. For this reason, we have used 30 minutes of contact time for sizing the new Pierre facility.

Under this alternative, the City of Pierre will discontinue use of the existing chlorine contact tank. New facilities will be constructed for chemical storage and feed to the new chlorine contact tank. The new facilities will provide adequate size for a minimum of storage of chemicals. Chemical feed equipment, whether for gas chlorine (Cl_2) or liquid chlorine will be sized for

a normal feed of 6.5 mg/l and a peak concentration of 16 mg/l. At normal feed rates, the sulfur dioxide (SO_2) feed rates are planned for a normal dosage to accommodate a 2.0 mg/l chlorine residual.

The design also considered wastewater ion concentrations of the following: Iron = 0.38 mg/l, manganese = 2.53 mg/l, calcium = 84.6 mg/l and ammonia = 0.10 to 30 mg/l. The effluent total suspended solids are considered as 45 mg/l even though the facility consistently meets a much lower concentration. Per the current permit, the E. coli limit = 126 cfu/100 ml.

Based on this information, the planned chemical feed equipment for gas chlorination/dechlorination includes two manifold assembly systems for two ton containers, two wall mounted Cl_2 vacuum regulators with gauges, and auto switchover equipment plus a 120 v heater, 2,000 pound per day max capacity, one automatic Cl_2 gas feed wall panel, and a two-inch ejector assembly with a 1,000 pound per day capacity. The sulfur dioxide system will include two-ton container mounted SO_2 vacuum regulator with auto switchover and 120v heater, 500 pound per day capacity, one automatic SO_2 gas feed wall panel unit, and one 1" SO_2 ejector 500 pound per day capacity.

Similarly, liquid chlorine will require storage tanks for sodium hypochlorite. Standard sodium hypochlorite solutions available for wastewater use are 12.5 percent concentration and are available in 330 gallon totes or 4,800 gallon tankers. Pricing for the chemical varies with the type of delivery method. For the purposes of this report, we are planning on a liquid dechlorination system utilizing a 40% sodium bisulfite solution.

The support building is currently planned with approximate size of 1200 square feet. The support building and chlorine contact tank will be located southeast of the final clarifiers and will ultimately discharge back to the existing outfall line for the facility.

5.3.4.2 Disinfection Alternative 2: Ultraviolet Disinfection

Ultraviolet (UV) disinfection is a physical process in which ultraviolet energy is absorbed in the DNA of microorganisms, causing structural changes in the DNA that prevent microorganisms from propagating. The peak absorption wave length for the DNA is between 250 and 265 nm. Ultraviolet disinfection is widely used in the wastewater industry today and is a safe and effective process to meet coliform limits required of a wastewater treatment facility. For planning purposes, the UV disinfection will be provided.

Samples of Pierre's treated wastewater were submitted for collimated beam testing to verify dosage rates. Based on the results of that testing, preliminary design proceeded with dosage rate 30 $mW/cm^2/s$ to produce the level of E. coli neutralization necessary to meet the permit. Further, this dosage is applied assuming a 50% UV transmittance. Based on these conditions, UV equipment pricing was solicited from a variety of vendors.

A typical UV disinfection process has lamps radiating the specified wavelengths in contact with the wastewater. Lamp arrangements vary from horizontal to angled to vertical. A total of four different arrangements were requested from three vendors. For the Pierre WWTF, the UV process will take place inside a 1,200 square foot building. The channels for the UV equipment and all electrical gear, lamp cleaning equipment and any other

necessary ancillary equipment will be in the building. UV systems require minimum distances that the lamps can affect the water. As a result, the liquid level in the channel with the lamps must not vary greatly. This is typically controlled by a long finger weir (a serpentine weir with a long length in a fairly compact footprint). The weir channels for the UV process will be located outside of the building. The building will be planned with two channels. The support building will include two channels. One channel is for future growth and the second channel will have two full disinfection units. Each unit will have full capacity of the peak month flow rate of 2.6 MGD or an overall capacity of 5.2 MGD.

5.3.4.3 Disinfection Alternative 3: Ozone Disinfection

Ozone, or O_3, is one of the strongest oxidants available in wastewater treatment. Due to a comparatively short half-life, ozone must be generated on-site. In full-scale applications, ozone is generated by passing a filtered, dried, oxygen-bearing gas (typically air) through a gap between two electrodes across which a high-voltage electrical current is maintained. The rate of ozone generation is controlled by varying either the voltage or frequency of the applied power. Ozone disinfection is most effective for wastewaters that are nitrified and/or highly clarified or filtered. Pierre does nitrify in its facility.

Vendors were contacted to get equipment pricing for ozone disinfection. Initial equipment costs with no consideration of installation, a support building and other required improvements are at $1.85 million. With this high of an equipment cost, no additional consideration was given to this option.

5.3.4.4 "No Action" Alternative

The existing gas chlorine disinfection system and use of a retired final clarifier for a chlorine contact tank has proved ineffective in consistently providing for reliable disinfection of the effluent from the Pierre WWTF. Failure to move forward with improvements to the disinfection process at Pierre could result in continued excessive violations of coliform or chlorine residual from the facility and additional administrative actions by the South Dakota Department of Environment and Natural Resources.

5.3.4.5 Probable Costs

A total of three disinfection systems were considered for the Pierre WWTF. The viable disinfection systems include gas chlorine/dechlorination, liquid chlorine/dechlorination, and UV disinfection. The capital costs for each of these systems are as follows:

1A	Gas Chlorine/Dechlorination –	$2,297,000
1B	Liquid Chlorine/Dechlorination –	$2,064,000
2	UV Disinfection –	$1,882,000

Based solely on capital costs, the UV Disinfection process is the least cost alternative. The annual operation and maintenance costs for each system are estimated as follows:

1A	Gas Chlorine/Dechlorination –	$29,000
1B	Liquid Chlorine/Dechlorination –	$65,000
2	UV Disinfection –	$19,800

Based on current interest rates for clean water state revolving loan funding, we considered a 3.0% loan for 20 years. The equivalent uniform annual cost for each disinfection alternative is as follows:

1A	Gas Chlorine/Dechlorination –	$183,400
1B	Liquid Chlorine/Dechlorination –	$203,800
2	UV Disinfection –	$146,300

Based on this information, the least cost alternative for the City of Pierre is for the UV disinfection system.

5.3.5 Ancillary Treatment Improvements

In addition to the disinfection system alternatives, this amendment includes two additional ancillary items for the wastewater treatment facility. One of the items is to replace the valves around the influent pumping system. These valves no longer function appropriately and will not allow for reliable isolation of pumps and equipment for proper repair or replacement. The opinion of probable cost to replace these valves is $74,000 including by-passing, equipment, tools, labor and other costs associated with the work.

The second item for the ancillary improvements would be to replace the air piping between the blowers and the aeration basins. This would include replacing existing underground air piping with an above ground arrangement extending through the wall of the blower building to connect above ground to the air header piping. The opinion of probable cost to provide the above ground air piping from the blower building to the aeration basins is $93,000.

5.4 SUMMARY AND RECOMMENDATIONS

The 2014 Wastewater Treatment Plant System Analysis identified three (3) items in need of immediate replacement at the City of Pierre's WWTP. These items include primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the compressed air pipe between the blower building and air lift pump station. This section

described two (2) possible alternatives other than "No Action" for each of the items in need of replacement which would ensure the reliable operation of the grit removal system, primary clarifiers, and the compressed air feed pipe to the air lift pump station.

Banner Associates, Inc. recommends Alternative 1 for each of the three (3) items in need of replacement. This includes the vortex grit removal and washing system, the stainless steel primary clarifier drives and mechanisms, and the below ground compressed air pipe between the blower building and the air lift pump station.

The vortex grit removal and grit washing system constructed of stainless steel is recommended because it would be a near exact replacement of the existing equipment. This ensures that no major modifications of the concrete grit tank would be needed to fit in the new equipment. The stainless steel material will give the grit removal equipment corrosion resistance to prevent shortened life of the system. Although a grit separator system may perform better that the recommended vortex grit removal system, the required modifications needed for the grit separator would increase the cost of the project substantially. In addition to modifications of the concrete tank, the grit separator would also require a lift station to be installed upstream to raise the hydraulic grade of the incoming wastewater to the level required by the grit separator.

The stainless steel primary clarifier mechanisms and drives are recommended because of their ability to resist corrosion in the humid environment of a primary clarifier that is equipped with a cover. Although the stainless steel will have a greater initial cost when compared to the same equipment constructed of carbon steel, the annual maintenance cost of the stainless steel equipment will be less than the carbon steel equipment. The high performance coating system of the carbon steel equipment would need to be thoroughly maintained to resist the harsh corrosion that appears on the existing

equipment. The recoating of carbon steel equipment would eventually offset the initial savings of installing carbon steel mechanisms and drives.

The below ground compressed air pipe is recommended because of the lower price compared to the stainless steel above ground option. A properly installed below ground pipeline will have a long service life. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

In addition to the three (3) components discussed in this report, the 2014 Wastewater Treatment Plant System Analysis also recognized the trickling filter feed pump as in need of immediate replacement. This item was not discussed because the City of Pierre indicated that it would be addressed through the maintenance budget rather than through a separate project. The 2014 report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. It is recommended that these items be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

This amendment to the original facility plan also includes the addition of disinfection facilities as well as two ancillary items. Based on the disinfection needs of the City of Pierre, Banner recommends that a new UV disinfection system be planned for the major improvement. The UV disinfection process is the least cost alternative and allows removal of chlorine gas from the site. Banner also recommends that the valves associated with the influent pumps and the air piping between the blower building and the aeration basins be replaced as a part of this project.

END OF SECTION 5

SECTION 6: RECOMMENDATIONS AND CAPITAL IMPROVEMENT PLAN

6.1 GENERAL

Alternatives were presented and investigated in Section 5 of this report. Selection of the recommended alternatives was based on the current condition of the equipment in question and costs associated with replacing the equipment.

6.2 DESCRIPTION OF SELECTED IMPROVEMENTS

6.2.1 Grit Removal Rehabilitation: Of the alternatives for the grit removal system rehabilitation, Banner Associates recommends Alternative 1: vortex grit removal. The vortex grit removal and grit washing system is recommended because it would be a near exact replacement of the existing equipment. This ensures that no major modifications of the concrete grit tank would be needed to fit in the new equipment. The stainless steel material will give the grit removal equipment corrosion resistance to prevent shortened life of the system. Although a grit separator system may perform better that the recommended vortex grit removal system, the required modifications needed for the grit separator would increase the cost of the project substantially. In addition to modifications of the concrete tank, the grit separator would also require a lift station to be installed upstream to raise the hydraulic grade of the incoming wastewater to the level required by the grit separator.

6.2.2 Primary Clarifier Rehabilitation: From the alternatives to rehabilitate the primary clarifiers, Banner Associates recommends Alternative 1: stainless steel mechanisms and drives. The stainless steel primary clarifier mechanisms and drives are recommended because of their ability to resist corrosion in the humid environment of a primary clarifier that is equipped with a cover. Although the

stainless steel will have a greater initial cost when compared to the same equipment constructed of carbon steel, the annual maintenance cost of the stainless steel equipment will be less than the carbon steel equipment. The high performance coating system of the carbon steel equipment would need to be thoroughly maintained to resist the harsh corrosion that appears on the existing equipment. The recoating of carbon steel equipment would eventually offset the initial savings of installing carbon steel mechanisms and drives.

6.2.3 Compressed Air Pipeline Replacement: Banner Associates recommends replacing the existing leaking compressed air pipeline with a below ground pipeline. The below ground compressed air pipe is recommended because of the lower price compared to the stainless steel above ground option. A properly installed below ground pipeline will have a long service life. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

6.2.4 Ultraviolet Disinfection: For the Pierre WWTF, the UV process will take place inside a new 1,200 square foot building. The channels for the UV equipment and all electrical gear, lamp cleaning equipment and any other necessary ancillary equipment will be in the building. UV systems require minimum distances that the lamps can affect the water. As a result, the liquid level in the channel with the lamps must not vary greatly. This is typically controlled by a long finger weir (a serpentine weir with a long length in a fairly compact footprint). The weir channels for the UV process will be located outside of the building. The building will be planned with two channels. One channel is for future growth and the second channel will have two full disinfection units. Each unit will have full capacity of the peak month flow rate of 2.6 MGD with an overall capacity of 5.2 MGD.

6.2.5 Ancillary Equipment: This work includes two additional ancillary items for the wastewater treatment facility. One of the items is to replace the valves around the influent pumping system. These valves no longer function appropriately and will not allow for reliable isolation of pumps and equipment for proper repair or replacement. The second item for the ancillary improvements would be to replace the air piping between the blowers and the aeration basins. This would include replacing existing underground air piping with an above ground arrangement extending through the wall of the blower building to connect above ground to the air header piping.

6.3 PROJECT PHASING

The 2014 Facility Plan was originally prepared to address specific equipment replacement needs related to the primary clarifiers and grit removal process. The Facility Plan was later approved the City of Pierre, SDDENR and design began on those listed Improvements. Following approval of the 2014 Facility Plan, recurring disinfection compliance issues led to a consent decree and requirement of the City of Pierre to complete a disinfection study. Therefore, this Facility Plan Amendment was prepared to document the costs of various disinfection processes and place the City of Pierre in position to seek funding for these improvements.

At the time this facility plan amendment was prepared, work related to grit removal, primary clarifier and compressed air piping improvements was designed and ready for Bid. Therefore, the improvements were naturally divided into two phases as shown below:

Phase I Improvements:

- Grit Chamber Rehabilitation
- Primary Clarifier Rehabilitation
- Grit Chamber Compressed Air Piping Replacement

Phase II Improvements:

- Ultraviolet Disinfection
- Ancillary Equipment Replacement

6.4 SUMMARY AND ESTIMATE OF PROBABLE COSTS

6.4.1 Phase I: Costs associated with the recommended Phase I improvements summarized above are included in Table 6-1. A complete listing of probable costs can be found in Appendix D.

Table 6-1: Opinion of Total Phase I Project Cost

DESCRIPTION OF WORK AND MATERIALS	COST	
Mobilization =	$	145,000
Primary Clarifier Rehabilitation =	$	809,000
Grit Removal Rehabilitation =	$	368,000
Air Pipe Replacement (Blower Building to Grit Chamber) =	$	29,000
Contingencies (10% Construction Costs, 2015) =	$	135,100
Opinion of Probable Construction Costs (2015) =	**$**	**1,486,100**
Engineering, Surveying, and Construction Services =	$	256,200
Administration and Legal =	$	29,800
Opinion of Total Project Costs (2015) =	**$**	**1,772,100**

*Note: Opinion of Total Project Costs are for the 2015 construction year

6.4.2 Phase II: Costs associated with the recommended Phase II improvements summarized above are included in Table 6-2. A complete listing of probable costs can be found in Appendix D.

Table 6-2: Opinion of Total Phase II Project Cost

DESCRIPTION OF WORK AND MATERIALS	COST	
Mobilization, Bonds and Insurance =	$	130,500
Process Structures and Tanks =	$	148,000
Process Building =	$	301,000
Electrical, Plumbing and HVAC =	$	126,000
Controls and Integration =	$	26,500
Site Work and Utilities =	$	210,000
Process Equipment =	$	386,000
Ancillary Equipment Replacement =	$	106,000
20% Conceptual Contingencies =	$	287,000
Opinion of Probable Construction Costs (2016) =	**$**	**1,721,000**
Engineering, Surveying, and Construction Services =	$	292,600
Administration and Legal =	$	34,500
Opinion of Total Project Costs (2016) =	**$**	**2,049,000**

*Note: Opinion of Total Project Costs are for the 2016 construction year

6.5 MONETARY IMPACT EVALUATION

6.5.1 Operation and Maintenance Costs: The recommended Phase I alternatives will result in no change to the anticipated operation and maintenance costs for this facility. The improvements represent replacement of existing equipment and will have similar operation and maintenance needs as the previous equipment.

The recommended Phase II alternative, converting to UV disinfection, will decrease the operation and maintenance costs for this facility by approximately $25,000 per year.

6.5.2 User Rate Impact Evaluation: The City of Pierre recently completed a comprehensive Wastewater Rate Study conducted by Missouri River Energy Services. This study considers many factors outside the scope of this facility planning document. While the study takes into account this project it also considers prior recommendations to hire additional staff at the wastewater treatment plant as well as additional improvements to the collection system and a more defined reserve account. For short term recommendations, the Missouri River Energy Services study recommends an 18% user fee increase for 2015 and 4% increases each year from 2016 through 2018. These rate increases also account for potential future modifications of the rate structure based on retirement of old debt while considering potential new debt. This report is available upon request of the City of Pierre.

As to this planning document, the opinion of probable project cost for Phase I is $1,772,100 and $2,049,000 for Phase II. The City of Pierre would be eligible to seek project funding through the State of South Dakota's State Revolving Grant and Loan Funds, funding through local resources, and other options. Current rates for loans from the State Revolving Loan fund include 3.0% for 11 to 20 years. Based on a 20-year loan at 3.0 percent financing (and including a requirement to charge 110 percent of the annual debt retirement cost) the anticipated annual debt retirement for this project is approximately $270,000 per year (Phase I $131,000 and Phase II $152,000). Pierre currently has 6,540 sewer user connections. Assuming each user connection participates equally in debt retirement and the debt retirement is put into the base fee portion the user fee, the anticipated monthly impact to the user fee for this project is $3.60 per month (Phase I $1.67 and Phase II $1.93).

6.6 IMPLEMENTATION PLAN AND SCHEDULE

A common implementation schedule for the recommended improvements is presented in Table 6-3. This schedule recognizes the City's desire for an aggressive schedule to design, bid and construct the project. It should be noted that several of the tasks listed in the schedule are sequential in nature. Failure to maintain the deadline dates for any task may result in delay of later task completion dates.

Table 6-3: Implementation Schedule

Task	Recommended Dates
Acceptance of the Amended Wastewater Facility Plan	March 8, 2016
Prepare Amended Funding Application	March, 2016
DENR Approval of Funding Package	March 30, 2016
Notice to Proceed on Phase II Design	April, 2016
Open Bids for Phase I	April, 2016
Start Construction of Phase I	May, 2016
Submit Phase II Plans and Specifications for Review	October, 2016
Open Bids for Phase II	December, 2016
Start Construction of Phase II	January, 2017
Substantial Completion of Phase I	June, 2017
Final Completion of Phase I	August, 2017
Substantial Completion of Phase II	October, 2017
Final Completion of Phase II	December, 2017
Complete 1 Year Warranty of Phase I	June, 2018
Complete 1 Year Warranty of Phase II	October, 2018

END OF SECTION 6

APPENDIX A

SDDENR SWD PERMIT AND STATEMENT OF BASIS

Permit No.: SD0020176

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Surface Water Discharge Permit
Authorizing Discharge
Under The South Dakota Surface Water Discharge System

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the City of Pierre

is authorized under this permit to discharge to

Lake Sharpe (Missouri River)

from its wastewater treatment facility located in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes county, South Dakota (Latitude 44.350661°, Longitude -100.323538°), in accordance with discharge points, effluent limits, monitoring requirements, and other conditions set forth herein. Authorization is limited to those outfalls specifically listed in the permit. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

This permit shall become effective October 1, 2015.

This permit and the authorization to discharge shall expire at midnight, September 30, 2020.

Signed this 25th day of September, 2015.

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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Appendix A – Emergency Discharge and SSO Reporting Form

Appendix B – Land Application Summary Form

1.0 DEFINITIONS

"30-day (and monthly) Average" means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

"7-day (and weekly) Average" means the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week that begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

"Acute Toxicity" occurs when in the LC_{50} test when 50 percent or more mortality is observed for either species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the effluent results to be considered valid.

The "**Approval Authority"** is the Secretary of the South Dakota Department of Environment and Natural Resources.

"ARSD" means the Administrative Rules of South Dakota. These often referred to as "Standards".

An **"Authorized Release"** is a discharge from a permitted outfall that meets all permit conditions and effluent limits.

"Biosolids" means any sewage sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

"BOD_5" means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **"Bypass"** is the intentional diversion of waste streams from any portion of a collection system or treatment facility other than the permitted outfall(s). Bypasses may result in releases from the sanitary sewer collection system (see **"Sanitary Sewer Overflow"**) or emergency releases from the treatment facility (see **"Emergency Discharge"**). If a bypass results in a release of wastewater, it shall be sampled and reported as either a sanitary sewer overflow from the collection system or an emergency discharge from the treatment facility.

"Chronic Toxicity" occurs when in the IC_{25} test when the survival, growth, or reproduction, as applicable, for either test species, at the effluent dilution(s) designated in this permit, is significantly less (at the 95 percent confidence level) than that observed for the control specimens.

"Composite Samples" shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

1. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

2. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

3. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

4. Continuous collection of sample, with sample collection rate proportional to flow rate.

"Daily Maximum (Daily Max.)" is the maximum value allowable in any single sample or instantaneous measurement.

"DMR" means Discharge Monitoring Report, EPA Form 3320-1, or a report filed electronically by an EPA-approved electronic system, or other forms provided by the Department which are used to report sampling data.

An **"Emergency Discharge"** is a discharge from the treatment or containment system through a release structure or over or through retention dikes or walls. An emergency discharge is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to reaching the treatment or containment system. An emergency discharge is an enforceable violation of the permit unless it is an allowable bypass that does not cause effluent limitations to be exceeded, an anticipated bypass approved by the Secretary, or an unanticipated bypass allowed under Section 4.2 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements.

"EPA" or **"US EPA"** means United States Environmental Protection Agency.

A **"Grab Sample,"** for monitoring requirements, is a single "dip and take" sample collected at a representative point in the discharge stream.

Inhibition Concentration, 25 Percent (IC_{25}) is a point estimate of the toxicant concentration that would cause a 25-percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method).

An **"Industrial User"** is a non-domestic source of pollutants discharged into a publicly owned treatment works.

An **"Instantaneous Measurement,"** for monitoring requirements, is a single reading, observation, or measurement either taken at the facility or within 15 minutes of the sample.

"Instream Waste Concentration (IWC)" is the concentration of a toxicant in the receiving water after mixing. It is also referred to as the receiving water concentration (RWC).

"Lethal Concentration, 50 Percent (LC_{50})" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

"MGD" is the measure of flow rate meaning million gallons per day.

"Mixing Zone (Zone of mixing)" is an area in a stream where an effluent or discharge mixes with the upstream water under ARSD 74:51:01:01. A mixing zone for wastewater discharges to flowing waters is allowed under ARSD 74:51:01:26. Lakes are not allowed a mixing zone under ARSD 74:51:01:27.

"No Observed Effect Concentration (NOEC)" is the highest tested concentration of an effluent or a toxicant that causes no observable adverse effect on the test species (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically different from the controls). NOEC is determined using hypothesis testing.

"pH" is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

"PTI" means Preliminary Toxicity Investigation. Up to a 30-day period where the permittee investigates the cause(s) of a whole effluent toxicity exceedance and if the toxicity is known, includes a proposal for its elimination.

A **"Publicly-Owned Treatment Works"** or **"POTW"** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature that is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

"Reasonable Potential (RP)" is the likelihood that an effluent will cause or contribute to an excursion above a water quality standard based on a number of factors, including the use of data (e.g. whole effluent toxicity test data). In the context of this document, references to RP and WET limits include both lethal and sub-lethal effects.

A **"Sanitary Sewer Overflow"** or **"SSO"** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system, including sewer lines, manholes, lift stations, etc. An SSO is an enforceable violation of the permit unless it is an allowable bypass that does not cause effluent limitations to be exceeded, an anticipated bypass approved by the Secretary, or an unanticipated bypass allowed under Section 4.2 – Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements.

"SDDENR" means the South Dakota Department of Environment and Natural Resources.

"Secretary" means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

"Severe Property Damage" is substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

"Sewage Sludge" is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

A **"Significant Industrial User"** is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:

1. Is subject to Categorical Pretreatment Standards under ARSD Chapter 74:52:10 (a.b.r. 40 CFR 403.6 and 40 CFR chapter I, subchapter N);

2. Discharges an average of 25,000 gallons per day or more of process wastewater to the publicly owned treatment works (excluding sanitary, non-contact cooling water, and boiler blowdown wastewater);

3. Contributes a process wastewater that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the publicly owned treatment works; or,

4. Is designated as such by the Secretary on the basis that the Industrial User has a reasonable potential for adversely affecting the publicly owned treatment works or for violating any pretreatment standard or requirement.

"Surface Water Discharge (SWD) Permitting Program" is the state program that regulates the discharge of pollutants into the state's waters. This is the state's implementation of the federal NPDES program.

"Test Acceptability Criteria (TAC)" are specific criteria for determining whether toxicity test results are acceptable, pursuant to EPA's WET test methods in 40 CFR 136 (additional TAC may be established by the Department). The effluent and reference toxicant must meet specific criteria as defined in the test method.

"Toxic Unit - Acute (TU_a)" is 100 times the reciprocal of the effluent concentration that causes 50 percent of the organisms to die in an acute toxicity test ($TUa = 100/LC_{50}$) (see LC_{50}).

"Toxic Unit - Chronic (TU_c)" is 100 times the reciprocal of the effluent concentration that causes no observable effect on the test organisms in a chronic toxicity test ($TUc = 100/IC_{25}$).

"Toxicity Identification Evaluation (TIE)" is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

"Toxicity Reduction Evaluation (TRE)" is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity,

evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

"TSS" means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Water Quality-based Effluent Limit (WQBEL)" is a NPDES permit limit that is developed to assure protection of aquatic life or human health consistent with applicable State water quality standards.

2.0 PERMIT COVERAGE

2.1 Permit Transfers

1. Coverage under this permit may be transferred to a new permittee if:

    a. The signatory authority notifies the Secretary at least 30 days in advance of the proposed transfer date;

    b. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

    c. The new permittee submits a Certification of Applicant form certifying the new permittee is qualified to perform the obligations of a permit holder in accordance with South Dakota Codified Law 1-40-27.

2. The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

2.2 Reopener Provisions

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this permit are modified in such a manner as to require different effluent limits than contained in this permit;

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted that calls for different effluent limits than contained in this permit;

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this permit;

4. Total Maximum Daily Load (TMDL): Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA;

5. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit;

6. Whole Effluent Toxicity (WET): This permit may be reopened and modified (following proper administrative procedures) to include: a compliance date, a compliance schedule, a change in the WET protocol, additional or modified numerical limitations, or any other conditions related to the control of toxicants if one or more of the following events occur:

    a. Toxicity was detected late in the life of the permit near or past the deadline for compliance.
    b. The Toxicity Reduction Evaluation (TRE) results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the Department agrees with the conclusion.
    c. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits, and the Department agrees that numerical controls are the most appropriate course of action.
    d. Following the implementation of numerical control(s) of toxicant(s), the Department agrees that a modified whole effluent toxicity protocol is necessary to compensate for those toxicants that are controlled numerically.
    e. The Toxicity Identification Evaluation (TIE)/TRE reveals other unique conditions or characteristics which, in the opinion of the Department, justify the incorporation of unanticipated special conditions in the permit.

7. Chronic WET: To include chronic WET limits if any other information or data are developed indicating that chronic WET limits are needed. If acceptable to the Department, and if in compliance with current regulations, this permit may be reopened and modified to incorporate TIE/TRE conclusion relating to additional numerical limits, a modified compliance schedule, and or modified whole effluent protocol;

8. Pretreatment Program: The permittee is required to develop and implement a pretreatment program, regulating indirect discharges of wastewater into its publicly owned treatment works; or

9. Other Changes: Other conditions or standards change so that the discharge no longer qualifies for this permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

2.3 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to discharge under this permit.

2.4 Continuation of the Expired Permit

An expired permit continues in full force and effect until a new permit is issued. If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must submit an application at least 180 days before the expiration date of the permit.

2.5 Property Rights

1. The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state, or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties.

2. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, that may result from actions taken under the permit.

2.6 Permit Actions

The Secretary may modify, revoke and reissue, or terminate coverage under this permit for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

2.7 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.0 EFFLUENT LIMITS

3.1 Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under this permit is a violation of the South Dakota Water Pollution Control Act and could subject the person(s) responsible for such discharge to penalties under Section 34A-2-75 of the Act. Knowingly discharging from an unauthorized location or failing to report a discharge as required by the permit could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

Outfall Number	Description of Discharge Points
001	Any discharge from the discharge pipeline to Lake Sharpe (Missouri River), (Latitude 44.345886°, Longitude -100.320026°).
002R	Any land application from the land application system to the approved land application sites.
002N	Any discharge to waters of the state from the land application system or land application sites. **No discharge shall occur from Outfall 002N**.

3.2 Prohibition of Bypass, Emergency Discharges, and SSOs

1. The permittee may allow bypasses to occur that do not result in a discharge and will not result in a violation of the effluent limits, but only if for essential maintenance to ensure efficient operation.

2. An emergency discharge, sanitary sewer overflow, or bypass, other than that described in Paragraph 1 above, is prohibited and the Secretary may take enforcement action against a permittee, unless:

   a. The emergency discharge, SSO, or bypass was unavoidable to prevent loss of life, threat to public health, personal injury, or severe property damage;

   b. There were no feasible alternatives to the emergency discharge, SSO, or bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not

satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent an emergency discharge, SSO, or bypass that occurred during normal periods of equipment downtime or preventive maintenance; and,

c. The permittee submitted notices as required under **Section 4.2 – Emergency Releases, Sanitary Sewer Overflows, Upsets, and Unauthorized Releases Reporting Requirements.**

3. The permittee shall sample an emergency discharge or SSO for the parameters and at the frequencies listed in **Section 3.6 – Self-Monitoring Requirements – *Sanitary Sewer Overflows and Emergency Discharges***. The sample results shall be reported in accordance with the reporting requirements listed in **Section 4.1 – Reporting of Monitoring Results**.

4. The Secretary may approve an emergency discharge, SSO, or bypass, after considering its adverse effects, if the Secretary determines that it will meet the three conditions listed above in Paragraph 2.

5. If a bypass, emergency discharge, or sanitary sewer overflow occurs or is expected to occur, the permittee shall take the appropriate measures to minimize the discharge of pollutants. Such measures may include the closing of facilities that contribute wastewater to the sewer system until the discharge is terminated.

3.3 Proper Operation and Maintenance

1. The permittee shall at all times properly operate and maintain all facilities and treatment and control systems that are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance.

2. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures.

3. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4 Inspection Requirements

The permittee shall inspect its wastewater treatment facility and lift stations regularly as outlined below. The inspections shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility and lift stations. The permittee shall maintain a notebook recording information obtained during the inspection.

1. **Facility Inspections.** The permittee shall inspect the mechanical processes of the facility on at least a **daily** basis. At a minimum, the notebook shall include the following:

a. Date and time of the inspection;

b. Name of the inspector(s);

c. Identification of operational problems and/or maintenance problems;

d. Recommendations, as appropriate, to remedy identified problems;

e. A brief description of any actions taken with regard to problems identified; and,

f. Other information, as appropriate.

2. **Lift Station Inspections.** The permittee shall inspect each lift station at least **twice per week**. Daily inspections are recommended. The inspections shall be performed to determine if proper operation and maintenance procedures are being undertaken and to verify no sanitary sewer overflows are occurring or have occurred. During any sanitary sewer overflow, the lift stations shall be inspected on a **daily** basis. At a minimum, the notebook shall include the following for each lift station:

a. Date and time of the inspection;

b. Name of the inspector(s);

c. Whether a sanitary sewer overflow is occurring or has occurred;

d. Identification of operational problems and/or maintenance problems;

e. Cleaning of screenings, if applicable;

f. Testing of alarms, if applicable;

g. Hour meter readings;

h. Recommendations, as appropriate, to remedy identified problems;

i. A brief description of any actions taken with regard to problems identified; and,

j. Other information, as appropriate.

3. **Land Application Inspections.** The permittee shall inspect the land application system **daily** while land applying wastewater. The permittee shall also conduct **daily** inspections of the land application areas while land applying. The inspections shall be performed to determine if proper operation and maintenance procedures are being undertaken and to verify no runoff is occurring or has occurred as a result of land application. At a minimum, the notebook shall include the following:

a. Date and time of the inspection;

b. Name of the inspector(s);

c. Location of land application;

d. Condition of land application site;

e. Whether runoff is occurring or has occurred as a result of land application;

f. Identification of operational problems and/or maintenance problems;

g. Recommendations, as appropriate, to remedy identified problems;

h. A brief description of any actions taken with regard to problems identified; and

i. Other information, as appropriate.

4. The permittee shall maintain the notebook(s) for the facility and each lift station in accordance with proper record-keeping procedures and shall make the notebook(s) available for inspection, upon request, by the Secretary or the US EPA.

3.5 Effluent Limits and Self-Monitoring Requirements – *Outfall 001*

Upon the effective date of this permit and lasting through the life of the permit, the quality of effluent discharged by the facility shall, as a minimum, be monitored and meet the effluent limits as set forth in the following table:

Effluent Parameter		Effluent Limit and Reporting Values			Monitoring Requirements	
		30-Day Average [1]	7-Day Average [1]	Daily Maximum [1]	Frequency	Sample Type [1]
Five-Day Biochemical Oxygen Demand (BOD_5)		30 mg/L	45 mg/L	--	Three per week	24-Hour Composite
Total Suspended Solids (TSS)		30 mg/L	45 mg/L	--	Three per week	24-Hour Composite
Percent Removal (TSS and BOD_5) [2]		85%	--	--	Monthly	Calculate
Escherichia coli (E. coli) [3]	May 1 – September 30	126 per 100 mL	--	235 per 100 mL	Three per week	Grab
Total Coliform [3]		5,000 per 100 mL	--	20,000 per 100 mL	Three per week	Grab
Oil and Grease (Visual) [4]		--	--	Report Presence or Absence	Daily	Visual
Oil and Grease (Hexane Ext. with Silica Gel) [4]		--	--	1.0 mg/L	Daily (if present)	Grab
Total Residual Chlorine		--	--	0.019 mg/L [5]	Daily	Instantaneous
Peracetic Acid (PAA)		--	--	1.0 mg/L [12]	Daily	Instantaneous
pH		The pH of the discharge shall not be less than 6.6 standard units or greater than 8.3 standard units in any sample.			Daily	Instantaneous [6, 7]
Acute Whole Effluent Toxicity [8]		--	--	1.0 TU_a	Quarterly	24-Hour Composite
Influent BOD_5 [9]		Report, mg/L	--	--	Three per week	24-Hour Composite
Influent TSS [9]		Report, mg/L	--	--	Three per week	24-Hour Composite

Effluent Parameter	Effluent Limit and Reporting Values			Monitoring Requirements	
	30-Day Average [1]	7-Day Average [1]	Daily Maximum [1]	Frequency	Sample Type [1]
Flow Rate [9]	Report, MGD	--	Report, MGD	Continuous	Instantaneous
Water Temperature [9]	Report, ˚C	--	Report, ˚C	Daily	Instantaneous
Dissolved Oxygen [9]	Report, mg/L	--	Report (Daily Minimum), mg/L	Daily	Instantaneous
Ammonia-Nitrogen [9]	Report, mg/L	--	Report, mg/L	Weekly	Grab [6]
Total Phosphorus (as P) [9]	--	--	Report, mg/L	Monthly	24-Hour Composite
Total Nitrogen (as N) [9]	--	--	Report, mg/L	Monthly	24-Hour Composite
Total Recoverable Copper [9]	--	--	Report, µg/L	Monthly	24-Hour Composite
Parameters defined in ARSD Section 74:52:02:42, Molybdenum, and Total Hardness [9]	--	--	--	See Section 3.8 [11]	
Parameters defined in ARSD Section 74:52:02:41 [9]	--	--	--	See Section 3.9 [11]	
Parameters defined in ARSD Section 74:52:02:43 [9]	--	--	--	See Section 3.10 [11]	
No chemicals, such as chlorine, shall be used without prior written permission from the Secretary.					

[1] See **Section 1.0 – Definitions**.

[2] In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).

[3] For *E. coli* and total coliforms, if a minimum of five samples are collected in a calendar month, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. If less than five samples are taken during any calendar month, the daily maximum effluent limit still applies. This sampling protocol for *E. coli* only applies if the discharge occurs between May 1 and September 30.

[4] A grab sample shall be taken if a visual sheen is observed and a concentration shall be determined using EPA method 1664A oil and grease hexane extraction with silica gel.

[5] SDDENR considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent

value is less than the analytical detection limit, "below detection level" shall be used for reporting purposes. **This monitoring requirement is only applicable if chlorine is being used to disinfect the effluent.**

[6] The pH and temperature of the effluent shall be determined when the ammonia samples are collected.

[7] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standards units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

[8] See **Section 3.10** for WET requirements.

[9] This parameter shall be monitored and reported, but does not have an effluent limit associated with it.

[10] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial-type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[11] These parameters shall have a monitoring frequency and sample type as outlined in Sections 3.7, 3.8, and 3.9.

[12] **This monitoring requirement is only applicable if peracetic acid (PAA) is being used to disinfect the effluent.**

3.6 Effluent Limits and Self-Monitoring Requirements – *Outfall 002R*

Effective immediately and lasting throughout the life of this permit, the permittee shall have **no discharge** from the land application system and **no discharge** of land applied waters to waters of the state, except in accordance with the emergency release provisions of the permit. **The act of land applying treated wastewater is not considered a discharge.**

1. The application rate at the land application site shall be controlled so as to prevent any surface runoff of the effluent.

2. To prevent ground saturation and runoff, no application is permitted during periods of heavy or prolonged rainfall, snow cover, or when the ground is frozen. **No land application shall take place between November 1 through March 31, unless prior approval is granted by SDDENR.**

3. The land application equipment shall, to the extent feasible, be installed in such a manner as to minimize wind drift of the effluent and formation of aerosols.

4. *Escherichia coli (E. coli)* shall not exceed a concentration of 126 per 100 milliliters in any one sample. **If any *E. coli* sample is greater than 126 per 100 milliliters, the land application shall be terminated immediately until a safe sample is collected.**

5. Appropriate warning signs shall be posted on the land application site to inform the public of the nature of the water.

6. By **December 1, 2015,** the permittee shall submit a land application best management plan to SDDENR for approval. Once approved, the land application best management plan becomes an enforceable part of the permit.

All land application of wastewater shall be monitored for the following parameters at the frequency and with the type of measurement indicated. Monitoring is only required during months when land application is occurring. The permittee shall report the land application monitoring results in accordance with **Section 4.1 – Report of Monitoring Results**. See **Appendix B – Land application Monitoring Summary Form**.

Effluent Parameter	Frequency	Reporting Values [1]	Sample Type [1]
Escherichia coli (E. coli), no./100 mL [2]	Monthly [3]	Daily Maximum; 30-Day Geometric Mean	Grab
Rate of land application (flow rate), MGD	Weekly	Daily Maximum; 30-Day Average	Instantaneous
Days land applied, days	Monthly	Monthly Total	Calculate
Total amount land applied, million gallons	Monthly	Monthly Total	Calculate

Effluent Parameter	Frequency	Reporting Values [1]	Sample Type [1]
pH, standard units	Monthly [3]	Daily Maximum; Daily Minimum	Instantaneous [4, 5]
Water temperature, °C	Monthly [3]	Daily Maximum; 30-Day Average	Instantaneous [4, 6]
Sodium Absorption Ratio (SAR) [7]	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Conductivity, umhos/cm	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Kjeldahl Nitrogen, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Ammonia-nitrogen (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab [4]
Total Nitrates (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Nitrites (as N), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Sulfates, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Chlorides, mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Phosphorus (as P), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab
Total Dissolved Solids (TDS), mg/L	Monthly [3]	Daily Maximum; 30-Day Average	Grab

[1] See **Section 1.0 – Definitions.**

[2] **An *E. coli* limit of 126 per 100 milliliters applies to the water used for irrigation.** During irrigation, if an *E. coli* sample result is greater than 126 per 100 milliliters, irrigation must be stopped immediately and SDDENR shall be notified within 24 hours. To begin irrigating again, a sample taken from the irrigation system must yield *E. coli* results of 126 per 100 milliliters or less.

[3] A minimum of one sample per month shall be taken for the duration of land application activities. Samples shall be taken from the irrigation site and shall be representative of the land applied water. The permittee always has the option of collecting additional samples if appropriate.

[4] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[5] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

[6] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[7] The sodium absorption ratio is calculated using the Gapon equation: $SAR = \frac{Na}{\sqrt{\frac{(Ca+Mg)}{2}}}$

3.7 Self-Monitoring Requirements – *Sanitary Sewer Overflows, Emergency Discharges, and Outfall 002N*

All sanitary sewer overflows and emergency discharges shall be monitored for the following parameters at the frequency and with the type of measurement indicated. Promptly upon discovery of an emergency discharge or sanitary sewer overflow, the discharge shall be monitored as shown below. **Any discharge from Outfall 002N is considered an emergency discharge and must follow the emergency discharge procedures.** Knowingly discharging or failing to report a discharge within a reasonable time from the permittee first learning of a discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act. The permittee shall report the monitoring results in accordance with **Section 4.1 – Reporting of Monitoring Results.**

Effluent Parameter	Frequency	Reporting Values [1]	Sample Type [1]
Duration of Discharge, days	Monthly	Monthly Total [2]	Calculate
Total Flow, million gallons	Monthly	Monthly Total	Calculate
Flow Rate, MGD	Daily	Actual Value	Instantaneous
pH, standard units	Daily	Actual Value	Instantaneous [3, 4]
Water Temperature, °C	Daily	Actual Value	Instantaneous [4, 5]
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	Daily	Actual Value	Grab
Total Suspended Solids (TSS), mg/L	Daily	Actual Value	Grab
Ammonia-Nitrogen (as N), mg/L	Daily	Actual Value	Grab [4]
Total Coliform, no./100 mL	Daily	Actual Value	Grab
Escherichia coli (E. coli), no./100 mL	Daily	Actual Value	Grab

[1] See **Section 1.0 – Definitions**.
[2] The date and time of the start and termination of each discharge shall also be reported.
[3] The pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.
[4] The pH and temperature of the effluent shall be determined when ammonia samples are collected.
[5] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

3.8 Self-Monitoring Requirements – Metals (Outfalls 001MI and 001ME)

The permittee shall sample and analyze the **influent and effluent** for the following metals as listed in ARSD Section 74:52:02:42 and Total Recoverable Molybdenum. The results of these analyses shall be attached to, and reported along with the Discharge Monitoring Report (DMR) submitted Outfalls 001MI and 001ME for that monitoring period.

Effluent Characteristic	Frequency	Reporting Values	Sample Type [1]
Total Hardness (as $CaCO_3$), mg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Antimony, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Arsenic, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Beryllium, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Cadmium, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Chromium, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Copper, µg/L (influent only) [2]	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Lead, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Mercury, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Molybdenum, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Nickel, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Selenium, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Silver, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Thallium, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Recoverable Zinc, µg/L	Annual	Daily Maximum	24-Hour Composite
Total Cyanide, µg/L	Annual	Daily Maximum	4 Grab Samples [3]
Weak Acid Dissociable Cyanide, µg/L	Annual	Daily Maximum	4 Grab Samples [3]
Total Phenols, µg/L	Annual	Daily Maximum	4 Grab Samples [3]

[1] See **Section 1.0 – Definitions.**

[2] Total Recoverable Copper has monthly monitoring requirements for the effluent. However, Total Recoverable Copper shall be monitored in the influent on an annual basis.

[3] The permittee shall collect a minimum of four (4) grab samples taken at equal intervals over a representative 24-hour period and have each grab sample analyzed for the indicated parameter.

3.9 Self-Monitoring Requirements – Priority Pollutants (Outfall 001T)

The permittee shall analyze the treatment facility **influent** for the presence of the toxic pollutants listed below as listed in ARSD Section 74:52:02:41 at least as often as required below. **The initial analysis shall occur within 30 days of the permit effective date.** If the influent sampling indicates the presence of a toxic pollutant listed below, the **effluent** shall be monitored for that parameter at least as often as required below with the initial analysis occurring within 30 days of the facility becoming aware of the parameter's presence in the influent. The results of these analyses shall be attached to, and reported along with the Discharge Monitoring Report (DMR) submitted for Outfall 001T for that monitoring period.

Effluent Characteristic	Frequency [2]	Reporting Values [1]	Sample Type [1]
acrolein, µg/L	Once per Five Years	Daily Maximum	3 Grabs
acrylonitrile, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
bis (chloromethyl) ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs
bromoform, µg/L	Once per Five Years	Daily Maximum	3 Grabs
carbon tetrachloride, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chlorodibromomethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chlorethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2-chloroethylvinyl ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chloroform, µg/L	Once per Five Years	Daily Maximum	3 Grabs
dichlorobromomethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
dichlorodifluoromethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,1-dichloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2-dichloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,1-dichloroethylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2-dichloropropane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,3-dichloropropylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
ethylbenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
methyl bromide, µg/L	Once per Five Years	Daily Maximum	3 Grabs
methyl chloride, µg/L	Once per Five Years	Daily Maximum	3 Grabs
methylene chloride, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,1,2,2-tetrachloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
tetrachloroethylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs

Effluent Characteristic	Frequency [2]	Reporting Values [1]	Sample Type [1]
toluene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2-trans-dichloroethylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,1,1-trichloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,1,2-trichloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
trichloroethylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
trichlorofluoromethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
vinyl chloride, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2-chlorophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,4-dichlorophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,4-dimethylphenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4,6-dinitro-o-cresol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,4-dinitrophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2-nitrophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4-nitrophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
p-chloro-m-cresol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
pentachlorophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
phenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,4,6-trichlorophenol, µg/L	Once per Five Years	Daily Maximum	3 Grabs
acenaphthene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
acenaphthylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
anthracene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzidine, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzo(a)anthracene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzo(a)pyrene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
3,4-benzofluoranthene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzo(ghi)perylene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
benzo(k)fluoranthene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
bis(2-chloroethyoxy)methane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
bis(2-chloroethyl)ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs
bis(2-chloroisopropyl)ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs

Effluent Characteristic	Frequency [2]	Reporting Values [1]	Sample Type [1]
bis(2-ethylhexyl)phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4-bromophenyl phenyl ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs
butylbenzyl phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2-chloronapthalene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4-chlorophenyl phenyl ether, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chrysene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
dibenzo(a,h)anthracene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2-dichlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,3-dichlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,4-dichlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
3,3'-dichlorobenzidine, µg/L	Once per Five Years	Daily Maximum	3 Grabs
diethyl phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
dimethyl phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
di-n-butyl phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,4-dinitrotoluene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
2,6-dinitrotoluene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
di-n-octyl phthalate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2-diphenylhydrazine (as azobenzene), µg/L	Once per Five Years	Daily Maximum	3 Grabs
fluoranthene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
fluorene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
hexachlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
hexachlorobutadiene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
hexachlorocyclopentadiene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
hexachloroethane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
indeno(1,2,3-cd)pyrene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
isophorone, µg/L	Once per Five Years	Daily Maximum	3 Grabs
naphthalene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
nitrobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
N-nitrosodimethylamine, µg/L	Once per Five Years	Daily Maximum	3 Grabs

Effluent Characteristic	Frequency [2]	Reporting Values [1]	Sample Type [1]
N-nitrosodi-n-propylamine, µg/L	Once per Five Years	Daily Maximum	3 Grabs
N-nitrosodiphenylamine, µg/L	Once per Five Years	Daily Maximum	3 Grabs
phenanthrene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
pyrene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
1,2,4-trichlorobenzene, µg/L	Once per Five Years	Daily Maximum	3 Grabs
aldrin, µg/L	Once per Five Years	Daily Maximum	3 Grabs
alpha-BHC, µg/L	Once per Five Years	Daily Maximum	3 Grabs
beta-BHC, µg/L	Once per Five Years	Daily Maximum	3 Grabs
gamma-BHC, µg/L	Once per Five Years	Daily Maximum	3 Grabs
delta-BHC, µg/L	Once per Five Years	Daily Maximum	3 Grabs
chlordane, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4,4'-DDT, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4,4'-DDE, µg/L	Once per Five Years	Daily Maximum	3 Grabs
4,4'-DDD, µg/L	Once per Five Years	Daily Maximum	3 Grabs
dieldrin, µg/L	Once per Five Years	Daily Maximum	3 Grabs
alpha-endosulfan, µg/L	Once per Five Years	Daily Maximum	3 Grabs
beta-endosulfan, µg/L	Once per Five Years	Daily Maximum	3 Grabs
endosulfan sulfate, µg/L	Once per Five Years	Daily Maximum	3 Grabs
endrin, µg/L	Once per Five Years	Daily Maximum	3 Grabs
endrin aldehyde, µg/L	Once per Five Years	Daily Maximum	3 Grabs
heptachlor, µg/L	Once per Five Years	Daily Maximum	3 Grabs
heptachlor epoxide, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1242, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1254, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1221, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1232, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1248, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1260, µg/L	Once per Five Years	Daily Maximum	3 Grabs
PCB-1016, µg/L	Once per Five Years	Daily Maximum	3 Grabs
toxaphene, µg/L	Once per Five Years	Daily Maximum	3 Grabs

[1] See **Section 1.0 – Definitions**.
[2] Influent monitoring is required as outlined above. Effluent monitoring shall be conducted for each parameter identified in the influent.

3.10 Self-Monitoring Requirements – Other Toxics (Outfalls 001MI and 001ME)

If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant below as listed in ARSD Section 74:52:02:44, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least annually on both the **influent** and the **effluent**. The results of these analyses shall be attached to, and reported along with the Discharge Monitoring Report (DMR) submitted for Outfalls 001MI and 001ME for that monitoring period.

Effluent Characteristic	Frequency [1]	Reporting Values [2]	Sample Type [2]
Asbestos, µg/L	Annual	Actual Results	3 Grabs
Acetaldhyde, µg/L	Annual	Actual Results	3 Grabs
Allyl alcohol, µg/L	Annual	Actual Results	3 Grabs
Allyl chloride, µg/L	Annual	Actual Results	3 Grabs
Amyl acetate, µg/L	Annual	Actual Results	3 Grabs
Aniline, µg/L	Annual	Actual Results	3 Grabs
Benzonitrile, µg/L	Annual	Actual Results	3 Grabs
Benzyl chloride, µg/L	Annual	Actual Results	3 Grabs
Butyl acetate, µg/L	Annual	Actual Results	3 Grabs
Butylamine, µg/L	Annual	Actual Results	3 Grabs
Captan, µg/L	Annual	Actual Results	3 Grabs
Carbaryl, µg/L	Annual	Actual Results	3 Grabs
Carbofuran, µg/L	Annual	Actual Results	3 Grabs
Carbon disulfide, µg/L	Annual	Actual Results	3 Grabs
Chlorpyrifos, µg/L	Annual	Actual Results	3 Grabs
Coumaphos, µg/L	Annual	Actual Results	3 Grabs
Cresol, µg/L	Annual	Actual Results	3 Grabs
Crotonaldehyde, µg/L	Annual	Actual Results	3 Grabs
Cyclohexane, µg/L	Annual	Actual Results	3 Grabs
2,4-D(2,4-Dichlorophenoxy acetic acid), µg/L	Annual	Actual Results	3 Grabs

Effluent Characteristic	Frequency [1]	Reporting Values [2]	Sample Type [2]
Diazinon, µg/L	Annual	Actual Results	3 Grabs
Dicamba, µg/L	Annual	Actual Results	3 Grabs
Dichlobenil, µg/L	Annual	Actual Results	3 Grabs
Dichlone, µg/L	Annual	Actual Results	3 Grabs
2,2-Dichloropropionic acid, µg/L	Annual	Actual Results	3 Grabs
Dichlorvos, µg/L	Annual	Actual Results	3 Grabs
Diethyl amine, µg/L	Annual	Actual Results	3 Grabs
Dimethyl amine, µg/L	Annual	Actual Results	3 Grabs
Dintrobenzene, µg/L	Annual	Actual Results	3 Grabs
Diquat, µg/L	Annual	Actual Results	3 Grabs
Disulfoton, µg/L	Annual	Actual Results	3 Grabs
Diuron, µg/L	Annual	Actual Results	3 Grabs
Epichlorohydrin, µg/L	Annual	Actual Results	3 Grabs
Ethanolamine, µg/L	Annual	Actual Results	3 Grabs
Ethion, µg/L	Annual	Actual Results	3 Grabs
Ethylene diamine, µg/L	Annual	Actual Results	3 Grabs
Ethylene dibromide, µg/L	Annual	Actual Results	3 Grabs
Formaldehyde, µg/L	Annual	Actual Results	3 Grabs
Furfural, µg/L	Annual	Actual Results	3 Grabs
Guthion, µg/L	Annual	Actual Results	3 Grabs
Isoprene, µg/L	Annual	Actual Results	3 Grabs
Isopropanolamine dodecylbenzenesulfonate, µg/L	Annual	Actual Results	3 Grabs
Kelthane, µg/L	Annual	Actual Results	3 Grabs
Kepone, µg/L	Annual	Actual Results	3 Grabs
Malathion, µg/L	Annual	Actual Results	3 Grabs
Mercaptodimethur, µg/L	Annual	Actual Results	3 Grabs
Methoxychlor, µg/L	Annual	Actual Results	3 Grabs
Methyl mercaptan, µg/L	Annual	Actual Results	3 Grabs
Methyl methacrylate, µg/L	Annual	Actual Results	3 Grabs
Methyl parathion, µg/L	Annual	Actual Results	3 Grabs
Mevinphos, µg/L	Annual	Actual Results	3 Grabs

Effluent Characteristic	Frequency [1]	Reporting Values [2]	Sample Type [2]
Mexacarbate, µg/L	Annual	Actual Results	3 Grabs
Monoethyl amine, µg/L	Annual	Actual Results	3 Grabs
Monomethyl amine, µg/L	Annual	Actual Results	3 Grabs
Naled, µg/L	Annual	Actual Results	3 Grabs
Napthenic acid, µg/L	Annual	Actual Results	3 Grabs
Nitrotoluene, µg/L	Annual	Actual Results	3 Grabs
Parathion, µg/L	Annual	Actual Results	3 Grabs
Phenolsulfanate, µg/L	Annual	Actual Results	3 Grabs
Phosgene, µg/L	Annual	Actual Results	3 Grabs
Propargite, µg/L	Annual	Actual Results	3 Grabs
Propylene oxide, µg/L	Annual	Actual Results	3 Grabs
Pyrethrins, µg/L	Annual	Actual Results	3 Grabs
Quinoline, µg/L	Annual	Actual Results	3 Grabs
Resorcinol, µg/L	Annual	Actual Results	3 Grabs
Strontium, µg/L	Annual	Actual Results	3 Grabs
Strychnine, µg/L	Annual	Actual Results	3 Grabs
Styrene, µg/L	Annual	Actual Results	3 Grabs
2,4,5-T(2,4,5-Trichlorophenoxy acetic acid), µg/L	Annual	Actual Results	3 Grabs
TDE(Tetrachlorodiphenylethane), µg/L	Annual	Actual Results	3 Grabs
2,4,5-TP {2-(2,4,5-trichlorophenoxy)propanoic acid}	Annual	Actual Results	3 Grabs
Trichlorofan, µg/L	Annual	Actual Results	3 Grabs
Triethanolamine, µg/L dodecylbenzenesulfonate, µg/L	Annual	Actual Results	3 Grabs
Triethylamine, µg/L	Annual	Actual Results	3 Grabs
Trimethylamine, µg/L	Annual	Actual Results	3 Grabs
Uranium, µg/L	Annual	Actual Results	3 Grabs
Vanadium, µg/L	Annual	Actual Results	3 Grabs
Vinyl acetate, µg/L	Annual	Actual Results	3 Grabs
Xylene, µg/L	Annual	Actual Results	3 Grabs
Xylenol, µg/L	Annual	Actual Results	3 Grabs

Effluent Characteristic	Frequency [1]	Reporting Values [2]	Sample Type [2]
Zirconium, µg/L	Annual	Actual Results	3 Grabs

[1] A sample shall be collected and analyzed for these parameters if the permittee suspects their presence in the influent or effluent.
[2] See **Section 1.0 – Definitions**.

3.11 Whole Effluent Toxicity Testing

1. Whole Effluent Toxicity (WET) Testing - Acute Toxicity

Upon the effective date of this permit, the permittee shall, at least once each **quarter** conduct acute static renewal toxicity tests on a **24 hour composite** sample of the final effluent. Samples shall be collected on a two-day progression (i.e. if the first sample is on a Monday, during the next sampling period, the sampling shall begin on a Wednesday, etc.).

The Department recommends sampling be completed at the beginning of the monitoring period (i.e. if quarterly monitoring, the first two months of the quarter), thus reserving time for complications (i.e. invalid tests, weather, etc.). Any repeated tests must be completed in the same monitoring period. Failure to obtain a valid test will be considered a failure to sample and is a violation of this permit. All sample(s) shall be collected at the outfall(s) as specified in this permit.

Dilution water shall be standard laboratory (reconstituted) water with the general characteristic of very hard water (hardness greater than 230 mg $CaCO_3$/L). This permit does not allow a mixing zone for Acute WET; therefore, IWCs are set at 100% effluent at the end of pipe. The dilution series shall include at least 5 effluent dilutions which shall include the instream waste concentration (IWC) and a control. The dilution series for this permit is **100%, 62.5%, 50%, 25%, 12.5%, and a Control**.

The acute static renewal toxicity tests; including the dilution water, reference (control) toxicant and effluent sample shall be conducted in accordance with the procedures, test conditions, and Test Acceptability Criteria (TAC) as set out in the latest revision of "*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, October 2002, (EPA-821-R-02-012, Table IA,* 40 *CFR 136).*

The permittee shall conduct the acute 48-hour static renewal toxicity test using *Ceriodaphnia dubia* (water flea) using the Acute Toxicity Test Method 2002.0 and the acute 96-hour static renewal toxicity test using *Pimephales promelas* (fathead minnow) using Acute Toxicity Test Method 2000.0.

The use of alternate testing procedures or methods shall be approved in advance by the Department (including, but not limited to the use of EDTA, CO_2 overlay, chlorine removal from the effluent sample if the effluent is chlorinated, etc.).

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration (LC_{50}). The results shall be reported in TU_a, where $TU_a = 100/LC_{50}$. This permit has additional requirements if any sample is found to be acutely toxic [See Sections *3.10 (2), (3), (4), and (5)]*.

WET test data results shall be summarized on the latest revision of the "Region 8 Acute Toxicity Test Report Form" and shall be submitted along with the completed Discharge Monitoring Report (DMR) for the end of the calendar period during which the whole effluent toxicity test was conducted. The complete lab data packet does not need to be submitted with the DMR unless requested by the Department.

If the results for 20 consecutive tests indicate no acute toxicity, the permittee may request in writing to the Department to allow a reduction to quarterly acute toxicity testing of alternating species, alternating quarters, or using only the most sensitive species. The Department may approve or deny the request based on the results and other available information without additional public notice. If the request is approved, the test procedures are to be the same as specified above for the test species.

2. Accelerated Testing

When the WET limit is exceeded during routine testing, the permittee shall perform an accelerated schedule of WET testing to establish whether a pattern of toxicity exists. There are two specific paths (KNOWN and UNKNOWN) for accelerated testing and they are as follows:

a. If a WET permit limit is exceeded and the source of the toxicity is **KNOWN** (e.g., a temporary plant upset, etc.), the facility shall immediately initiate a preliminary toxicity investigation (PTI). The permittee shall also conduct one additional toxicity test using the same species and test method that failed. **This test shall begin within 14 days of notification/receipt of the test results exceeding the permit limit**. If this additional accelerated test does not exceed WET permit limits, then the permittee may return to their regular testing frequency. If the additional accelerated test exceeds a WET permit limit, then there is considered to be a pattern of toxicity. The permittee must submit a TIE/TRE work plan with a time table to eliminate the toxicity. This TIE/TRE work plan shall be considered part of the permit.

b. If a WET permit limit is exceeded, and the source of the toxicity is **UNKNOWN**, the facility must immediately initiate a preliminary toxicity investigation (PTI). The permittee also must conduct accelerated testing that shall consist of 10 WET tests conducted at a maximum of 4-week intervals over a 10-month period using the same species and test method that failed. The Department reserves the right to increase the accelerated testing frequency to bi-weekly upon written notification to the permittee. **Accelerated testing shall begin within 14 days of notification/receipt of**

the test results exceeding the permit limit. If none of the additional test exceeds WET permit limit(s), then the permittee may return to their regular testing frequency. If any of the accelerated tests exceed WET permit limit(s), then there is considered to be a pattern of toxicity. The permittee must submit a TIE/TRE work plan with a time table to eliminate the toxicity. This TIE/TRE work plan shall be considered part of the permit.

3. Pattern of Toxicity

There is considered to be a pattern of toxicity if any one accelerated WET test exceeds the permit limit or is considered a failure pursuant to the accelerated testing requirements, using a full dilution series and the species found to be most sensitive. A pattern of toxicity may also be established based on all past toxicity failures as a whole using Best Professional Judgment (BPJ) (i.e. failed sample every spring, etc.). The establishment of a pattern of toxicity triggers a PTI and a TIE/TRE.

4. Preliminary Toxicity Investigations (PTI)

Any WET limit violation or an established pattern of toxicity requires the permittee to automatically begin an evaluation of the possible cause(s) of the toxicity. This is the permittees chance to find the cause of the toxicity and make a proposal for its elimination. A maximum of 30 days is allowed for this evaluation. This period may be extended if extenuating circumstances exist and written approval is granted prior to exceeding 30 days. Close coordination and communication with the Department is also required. The results of this investigation will aid in determining the need for further investigations, studies, TIE/TRE, permit modification, and/or enforcement action.

5. Toxicity Identification Evaluations (TIE) and Toxicity Reduction Evaluations (TRE)

If the PTI cannot determine the cause of the WET failures, then the permittee shall begin the formal TIE/TRE process. A TIE/TRE is done when toxicity is evident based on an established Pattern of Toxicity.

If the Department is requiring a TIE/TRE, the permittee shall be notified in writing. Once a TIE/TRE has begun, the permittee shall submit a TIE/TRE work plan to the Department within 30 days following the effective date of the TIE/TRE notification letter. The permittee shall also submit monthly progress reports that will be due by the 1st of every month until the TIE/TRE is closed. Once the TIE/TRE has begun, accelerated testing may cease.

The permittee shall use the following TIE/TRE process and procedures set forth by EPA as guidance: U.S. EPA. 1988. Methods for Toxicity Identification Evaluations, Phase 1, Toxicity Characterization Procedures (EPA/606/6-91/003); Phase 2, Toxicity Identification Procedures (EPA/600/3-88/035); Phase 3,

Toxicity Confirmation Procedures (EPA/600/3-88/036); and Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents Phase 1 (EPA/600/6-91/005F May 1992).

If toxicity spontaneously disappears in the midst of the TIE phase, the Department may require the permittee to conduct additional accelerated testing to demonstrate that no pattern of toxicity remains. This shall follow the UNKNOWN toxicity path of accelerated testing. If no additional pattern of toxicity is demonstrated, the TIE/TRE will be closed and normal WET testing shall resume.

TIE/TRE shall be reported on the DMRs for the species that the TIE/TRE is being conducted. If the facility is using NetDMR, NODI 8 shall be used and TIE/TRE shall be typed in the comment section of the electronic DMR.

A numerical limit, compliance schedule, or an enforcement action may be subsequently imposed on the permittee based off the results of the TIE/TRE and shall be considered part of this permit. The TIE/TRE will not be considered closed until written notification has been received from the Department.

3.12 Monitoring Procedures

1. Effluent samples taken in compliance with the monitoring requirements established under this permit shall be collected prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2. Influent samples shall be representative of the raw influent wastewater before any processes or treatment that could alter the properties of the influent.

3. Monitoring shall be conducted according to test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR, Part 136), unless other test procedures have been specified in this permit or approved by the Secretary.

3.13 Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit at the designated points, using test procedures approved under ARSD Section 74:52:03:06 (a.b.r. 40 CFR 136) or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit and reported to SDDENR.

3.14 Capacity, Management, Operation, and Maintenance

In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows or emergency discharges, the permittee shall develop and submit the program to the Secretary. The program shall, at a minimum, address the following areas:

1. Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;

2. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational recordkeeping, and other appropriate items;

3. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance recordkeeping, parts and equipment inventory, and other appropriate items; and

4. Sewer system capacity evaluation: The capacity evaluation includes the following:

   a. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);

   b. Identification of problem areas (overflows, surcharged lines, basement backups, etc.);

   c. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and

   d. Sewer rehabilitation recommendations.

5. Timelines: This program shall identify timelines and specific dates for completing any identified changes or improvements.

   SDDENR Approval: The permittee shall submit the program to SDDENR for approval. Upon approval, the permittee shall implement the program.

4.0 REPORTING & RECORD KEEPING REQUIREMENTS

4.1 Reporting of Monitoring Results

1. Effluent monitoring results obtained during the previous month shall be summarized for each month, reported on a separate Discharge Monitoring Report Form (as defined in **Section 1.0 – Definitions**) for Outfall 001A, and submitted to SDDENR on a **monthly** basis.

2. Whole Effluent Toxicity monitoring results from Outfall 001 obtained during the previous three months shall be summarized, reported on a separate Discharge Monitoring Report Form for Outfall 001W and the Region 8 Acute Toxicity Test Report Form, and submitted to SDDENR on a **quarterly** basis.

3. Influent and Effluent metals and toxic organics monitoring results from Outfall 001 obtained during the previous year shall be summarized, reported on a separate Discharge Monitoring Report Form for Outfall 001MI (influent) and Outfall 001ME (effluent), and submitted to SDDENR on an **annual** basis.

4. Influent and Effluent priority pollutant monitoring results from Outfall 001 obtained during the previous five years shall be summarized, reported on a separate Discharge Monitoring Report Form for Outfall 001T, and submitted to SDDENR at least **once every five years**.

5. Effluent monitoring results from Outfall 002R obtained during the previous month shall be summarized for each month, reported on separate Land Application Monitoring Forms (Appendix B), and submitted to SDDENR on a **monthly** basis.

6. Effluent results obtained from all other sources, including Outfall 002N, shall be reported on Emergency Discharge and SSO Reporting Summary Forms in Appendix A.

7. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with **Section 4.4 – Signatory Requirements** and submitted to the Secretary at the following address:

   South Dakota Department of Environment and Natural Resources
   Surface Water Quality Program
   PMB 2020
   Joe Foss Building
   523 East Capitol
   Pierre, SD 57501-3182

8. All reports must be submitted **no later than the 28th day of the month** following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported.

9. In accordance with SDCL 1-40-39, the Secretary is authorized to accept a document with an electronic signature. SDDENR shall provide for the authenticity of each electronic signature by adhering to any standards established by the South Dakota Bureau of Information and Telecommunications pursuant to SDCL 53-12-47 and 53-12-50 or any other standards established by rules promulgated pursuant to SDCL Chapter 1-26.

4.2 Effluent Violation, Bypass, Emergency Discharge, and SSO Reporting Requirements

1. The permittee shall report any effluent violation, bypass, emergency discharge, or sanitary sewer overflows (SSOs) related to this permit or permitted facility that may endanger health or the environment as soon as possible, but no later than 24 hours after becoming aware of the circumstances as follows:

a. During regular business hours (8:00 a.m. - 5:00 p.m. Central Time), the report shall be made at (605) 773-3351.

b. Outside of normal business hours, the permittee shall contact the South Dakota Emergency Management at (605) 773-3231.

2. Effluent violations, bypass, sanitary sewer overflows, and emergency discharges that do not meet the conditions above shall be reported to the Secretary within 24 hours from the time the permittee becomes aware of the circumstances as follows:

a. During regular business hours (8:00 a.m. - 5:00 p.m. Central Time), the report shall be made at (605) 773-3351.

b. Outside of normal business hours, the permittee shall leave a message at 1-800-GET-DENR (1-800-438-3367).

3. The permittee shall submit notice of bypass as follows:

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Secretary at least 10 days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the secretary at (605) 773-3351 by the first workday (8:00 a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

4. The Secretary may require the permittee to notify the general public or downstream users that could be or will be impacted by the effluent violation, bypass, emergency discharge, or SSO.

a. In making the decision to require public notification, the Secretary will consider the potential impacts as a result of the effluent violation, bypass, emergency discharge, or SSO, the downstream beneficial uses (such as drinking water or recreation), and the potential for public contact.

b. If required by the Secretary, the permittee shall notify the public and/or downstream users as soon as possible, but in no case more than 24 hours after the effluent violation, bypass, emergency discharge, or SSO begins.

5. In addition to verbal notification, the permittee shall submit a written report of the circumstances regarding the effluent violation, bypass, sanitary sewer overflow, or emergency discharge to the Secretary. The permittee shall use the Emergency Discharge and SSO Reporting Summary Form in Appendix A to report an emergency discharge or SSO. Effluent violations shall be reported on the Discharge Monitoring Report forms required in **Section 4.1 – Reporting of Monitoring Results**.

a. Reports shall be submitted in accordance with **Section 4.1 – Reporting of Monitoring Results**.

b. The written submission shall contain:

i. A description of the event and its cause;
ii. The period of the event, including exact dates and times;
iii. Where the wastewater was discharged;
iv. The estimated time the event is expected to continue if it has not been corrected;
v. Any adverse effects, such as fish kills;
vi. If public notification was required, describe how the public was notified of the discharge; and
vii. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

10. The written report shall be submitted **by the 28th day of the following month**. The Secretary may require a written report to be submitted sooner or may require additional information if the discharge has the potential to impact human health or the environment.

4.3 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The initials or names of the individuals who performed the sampling or measurements;

3. The dates analyses were performed;

4. The time analyses were initiated;

5. The initials or names of individuals who performed the analyses;

6. References and written procedures, when available, for the analytical techniques or methods used; and,

7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

4.4 Signatory Requirements

1. All permit applications, reports or information submitted to the Secretary shall be signed and certified by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described in paragraph 1 of this section or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. A duly authorized representative may be either a named individual or any individual occupying a named position.

3. If an authorization under paragraph 2 a. above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

4.5 Retention of Records

1. The permittee shall retain records of all monitoring information and other data required by this permit. This includes:

   a. Data collected on site;

   b. Copies of all Discharge Monitoring Report Forms;

   c. A copy of the permit;

   d. All calibration and maintenance records;

   e. All original strip chart recordings for continuous monitoring instrumentation;

   f. Copies of all other reports required by this permit; and

   g. Records of all data used to complete the application for this permit.

2. This information must be retained for a period of at least **three years** from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

4.6 Availability of Reports

Except for data determined to be confidential under ARSD Section 74:52:02:17, all reports submitted in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. The name and address of the permittee, permit applications, permits, and effluent data shall not be considered confidential.

4.7 Duty to Provide Information

1. The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2. If the permittee becomes aware that it failed to submit any relevant facts in a permit application form, or submitted incorrect information in a permit application form or any report to the Secretary, it shall promptly submit such facts or information.

4.8 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions. This notification also applies to pollutants that are not subject to effluent limits or other notification requirements in this permit.

5.0 COMPLIANCE REQUIREMENTS

5.1 Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and the federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application (a violation of a condition of this permit is subject to SDCL Section 34A-2-75).

5.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any wastewater discharge and/or sludge disposal or reuse in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

5.3 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5.4 Upset Conditions

1. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of Paragraph 2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limits).

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under **Section 4.2 – Emergency Discharge Reporting Requirements**; and,

   d. The permittee complied with mitigation measures required under **Section 5.2 – Duty to Mitigate.**

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

5.5 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in **Section 5.4 – Upset Conditions**, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

5.6 Penalties for Falsification of Reports

1. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75.

2. Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75.

3. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

5.7 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to that the permittee is or may be subject under section 311 of the Federal Clean Water Act.

6.0 INDUSTRIAL WASTES

6.1 Significant Industrial Users

Each significant industrial user must be identified as to qualitative and quantitative characteristics of the discharge as well as production data.

6.2 Prohibited Pollutants

Pretreatment Standards [ARSD 74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the waste treatment system from any source of nondomestic discharge:

1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in ARSD 74:28:22:01, a.b.r. 40 CFR 261.21;

2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

4. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

5. Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit);

6. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

8. Any trucked or hauled pollutants, except at discharge points designated by the POTW;

9. Any pollutant which causes pass through or interference; and,

6.3 Categorical Standards

In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

6.4 Notification Requirements

1. The permittee shall provide adequate notice to the Secretary of:
   a. Any new introduction of pollutants by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user;
   b. Any new introduction of pollutants into the treatment works from an industrial user which would be subject to Sections 301 or 306 of the Federal Clean Water Act if it were directly discharging those pollutants to waters of the state; and
   c. Any substantial change in the volume or character of pollutants being introduced into the treatment works by an industrial user introducing pollutants into the treatment works at the time of application of the SWD permit.

2. For the purposes of this section, adequate notice shall include information on:
   a. The quality and quantity of effluent to be introduced into such treatment works; and
   b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

3. Such notice must be forwarded to the Secretary no later than sixty (60) days following the introduction or change

6.5 Pretreatment Standards

At such time as a specific pretreatment limit becomes applicable to an industrial user of the permittee, the permit issuing authority may, as appropriate, do the following:

1. Amend the permittee's SWD discharge permit to specify the additional pollutant(s) and corresponding effluent limit(s) consistent with the applicable national pretreatment limit;

2. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount that may be discharged

to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the General Pretreatment Regulations at [ARSD 74:52:11:01, a.b.r. 40 CFR 403]; and/or,

3. Require the permittee to monitor its discharge for any pollutant which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste.

6.6 Legal Action

The permit issuing authority retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a SWD permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee’s premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

7.2 Removed Substances

1. Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

2. If sludge disposal is necessary, the permittee shall submit to the Secretary a sludge disposal plan for review and approval prior to the removal and disposal of sludge. The permittee shall not dispose of sludge without the Secretary’s approval.

APPENDIX A

Emergency Discharge and SSO Reporting Form

EMERGENCY DISCHARGE and SSO REPORTING FORM

This form is to be used to summarize the reporting requirements for any emergency discharge or sanitary sewer overflow.

Address:		**Point of Discharge:**	☐ **001** ☐ **002**	☐ **SSO** ☐ **Other**
Facility Contact:		**Phone:**		

Description of Event *(Attach additional sheets if necessary)*

Please check the boxes below, as appropriate, to indicate the type of release being reported (See* Definitions *for an explanation of each term).

☐ **Emergency Discharge** ☐ **Sanitary Sewer Overflow** ☐ **Land Application Overflow**

Date and Time the discharge began or was discovered:	
Date and Time the discharge was stopped:	

Describe the events resulting in the discharge and its cause(s):

Where did the event occur and where was the wastewater released to:

Describe the steps taken or planned to reduce, eliminate, and prevent reoccurrence:

Time and Date 24-Hour Notice of Noncompliance given to SDDENR:	
Describe any adverse effects, such as fish kills, etc.:	
Duration of discharge (include dates and times):	
Total flow, million gallons:	

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
Date and time of sample							
Water Temperature, °C							
Flow Rate, million gallons per day							
pH, standard units							
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L							
Total Suspended Solids (TSS), mg/L							
Ammonia as N, mg/L							
Total Residual Chlorine, mg/L (if chlorinating)							
Escherichia coli (*E. coli*), no./l00 mL							
Total Coliform, no./l00 mL							

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): _____ Title: _____

Signature: _____ Date: _____

APPENDIX B

Land Application Monitoring Summary Form

LAND APPLICATION MONITORING SUMMARY FORM

This form shall be used to summarize effluent monitoring results for land application under this permit.

Permit Name:	Permit No.:
Address:	
Facility Contact:	Phone:
Number of days land application occurred (include number of days, start and end dates, and times):	
Location of land application:	

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3
Rate of Land Application, MGD			
Total Amount Land Applied, million gallons			
pH, standard units			
Water Temperature, ˚C			
Escherichia coli (E. coli), no./100 mL			
Sodium Absorption Ratio (SAR)			
Conductivity, µmhos/cm			
Total Kjeldahl Nitrogen, mg/L			
Ammonia-Nitrogen (as N), mg/L			
Total Nitrates (as N), mg/L			
Total Nitrites (as N), mg/L			
Total Sulfates, mg/L			
Total Chlorides, mg/L			
Total Phosphorus (as P), mg/L			
Total Dissolved Solids (TDS), mg/L			

STATEMENT OF BASIS

Applicant:	City of Pierre
Permit Number:	SD0020176
Contact Person:	Leon Schochenmaier – City Administrator Nathan McCombs – Wastewater Superintendent P.O. Box 1253 Pierre, SD 57501
Phone:	(605) 773-7449
Permit Type:	Major Municipal - Renewal

This document is intended to explain the basis for the requirements contained in the draft Surface Water Discharge Permit. This document provides guidance to aid in complying with the permit regulations. This guidance is not a substitute for reading the proposed permit and understanding its requirements.

DESCRIPTION

The city of Pierre operates a wastewater treatment facility (WWTF) located on the southeast side of the city in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44.350661°, Longitude -100.323538°, Navigational Quality GPS).

The wastewater collection system consists of a gravity flow system aided by nine lift stations, which transports wastewater to the mechanical treatment facility. The WWTF has an average design flow of 2.21 million gallons per day (MGD), with a peak design flow of 4.42 MGD. The wastewater treatment system consists of the following processes: pretreatment, primary clarification, trickling filter, activated sludge, final clarification, disinfection, dechlorination, sludge digestion, sludge dewatering, and landfilling of sludge.

Pretreatment consists of debris removal via a mechanical bar screen, grinding by two comminutors, an aerated grit removal chamber, and influent flow monitoring by an 18 inch Parshall flume. Grit and debris removed during pretreatment is hauled to the city of Pierre landfill for disposal.

Primary treatment consists of two clarifiers operated in parallel. The clarifiers have an overall diameter of 60 feet, with a weir diameter of 53 feet and a sidewater depth of 8 feet. The clarifiers have aluminum dome covers to reduce icing problems. The sludge and scum removed is pumped to the autothermal thermophilic aerobic digestion (ATAD) system.

Secondary treatment begins with a 52-foot diameter trickling filter. This is followed by two complete mix activated sludge aeration basins operated in parallel. These basins are equipped with fine bubble diffusers. The final step of secondary treatment is final clarification. There are two final clarifiers, operated in parallel, which have an overall diameter of 67 feet, a weir diameter of 60 feet, and a sidewater depth of 12 feet. Most of the sludge from the final clarifiers

is returned to the activated sludge process, with a small amount diverted to the dissolved air flotation (DAF) thickener.

The city of Pierre has utilized chlorination and dechlorination for disinfection of the effluent prior to discharging to Lake Sharpe (Missouri River). However, the city of Pierre is undergoing a yearlong pilot study for the use of peracetic acid (PAA) as an alternative disinfectant. This pilot study is beginning in August 2015. PAA addition occurs following the final clarifiers. Following disinfection the wastewater flows to a 117,500 gallon contact basin where further disinfection and dissipation of PAA takes place prior to discharging. The estimated contact time in this basin is anywhere from 40 to 170 minutes, varying with flow rate. The contact basin is a converted final clarifier which was being used as a chlorine contact basin. The disinfected wastewater then flows through the effluent 18-inch Parshall flume to the discharge pipe, where it is discharged to Lake Sharpe (Missouri River). The chlorine disinfection equipment will remain onsite throughout the pilot study, therefore total residual chlorine limits and monitoring will remain in this draft permit, but will only be applicable if chlorine is being used for disinfection.

The city of Pierre has requested the addition of a land application outfall. The land application sites include the following city-owned properties: Hillsview Golf Club, PILC Soccer Complex, Oahe Softball Complex, and Riverside Cemetery. Land application limits and monitoring requirements are included in this draft permit.

Solids handling consists of treating both primary and secondary sludge. The primary sludge is pumped from the primary clarifiers directly to the ATAD system. The secondary sludge is the thickened waste activated sludge from the 36-foot diameter DAF unit. The DAF thickening process consists of adhering suspended solid particles to air bubbles causing them to float. These low-density solids are then removed and sent to the ATAD system.

The ATAD system begins with a pre-ATAD tank, which collects the sludge and stores it until there is enough sludge to process. The sludge is then moved to three 30-foot diameter reactor tanks, which have a sidewater depth of 11 feet and are operated in series. Sludge stabilization occurs in these tanks when the heat generated by the aerobic thermophilic microorganisms during the digestion process destroys the pathogens in the sludge. After stabilization, sludge is pumped to the post-ATAD tanks for cooling prior to dewatering with a belt filter press. The finished biosolids are then landfilled in accordance with the city's sludge permit.

The city of Pierre's facility was constructed and began operation in 1962, with upgrades in 1999, 2000, and 2003. This WWTF serves a population of 13,646 persons (2010 census), with no known industrial users contributing flow to the system.

RECEIVING WATERS

Any discharge from this facility will enter Lake Sharpe of the Missouri River. South Dakota Surface Water Quality Standards (SDSWQS, 74:51:01:43) classify Missouri River impoundments like Lake Sharpe as flowing streams and not as reservoirs. Lake Sharpe (the Missouri River) is classified by the SDSWQS, Administrative Rules of South Dakota (ARSD), Sections 74:51:03:01 and 74:51:03:05 for the following beneficial uses:

(1) Domestic water supply waters;
(2) Coldwater permanent fish life propagation waters;
(7) Immersion recreation waters;
(8) Limited contact recreation waters;
(9) Fish and wildlife propagation, recreation, and stock watering waters;
(10) Irrigation waters; and
(11) Commerce and Industry waters.

TOTAL MAXIMUM DAILY LOAD

Section 303(d) of the federal Clean Water Act requires states to develop Total Maximum Daily Loads (TMDLs) for waters at levels necessary to achieve and maintain water quality standards. TMDLs are calculations of the amount of pollution a waterbody can receive and still maintain applicable water quality standards. TMDLs are necessary for waters that do not meet or are not expected to meet water quality standards with the application of technology-based controls for point sources. TMDLs address specific waterbodies, segments of waterbodies, or even entire watersheds, and are pollutant specific. TMDLs must allow for seasonal variations and a margin of safety, which accounts for any lack of knowledge concerning the relationship between pollutant loads and water quality.

This segment of the receiving waterbody has been identified as being impaired for water temperature but a TMDL has not been completed yet, and no wasteload allocation has been assigned to the city of Pierre's WWTF. The permit will be reopened, if necessary, to address the facility's wasteload allocation once the TMDL is completed.

ANTIDEGRADATION

SDDENR has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedure and the SDSWQS, no further review is required. The results of SDDENR's review are included in Attachment 1.

MONITORING DATA

The city of Pierre has been submitting Discharge Monitoring Reports (DMRs) as required under the current permit. As shown in Attachment 2, this facility has reported numerous violations since 2007 when the current permit was issued: five Fecal Coliform violations, three Total Coliform violations, two violations for Total Suspended Solids (TSS), and numerous Total Residual Chlorine (TRC) violations, some of which were not reported to SDDENR. Corrective actions will be taken to ensure the daily maximum limit for TRC is met and no future violations occur.

INSPECTIONS

Personnel from SDDENR conducted a Compliance Inspection of the Pierre WWTF on August 26 and 27, 2014. The following comment and corrective action was required in order to come into compliance with the city's Surface Water Discharge (SWD) permit:

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The June 2014 DMR, plant bench sheets, and State Health Lab sample results were reviewed. The DMR-reported BOD_5 30-day average was 5 mg/L, but the calculated value was 4.42 mg/L. On the bench sheet for the 6/11/2014 sample, Effluent BOD_5 was recorded as 5 mg/L, but on the excel sheet that the plant uses to fill out the DMRs, it was recorded as 6 mg/L. This would account for the difference between the 30-Day average BOD_5 values.	Please take care when copying bench sheet data into excel for calculations, and make corrections where necessary.

The following comments and recommendations were also made during the inspection:

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
In FY 2013, annual expenses were greater than revenues. The city is not collecting sufficient funds to cover the expenses for operating the wastewater utility. To effectively operate the utility, the annual revenues must meet or exceed the annual expenses.	The city should consider raising its rates to accomplish this.
In the primary clarifiers, there is heavy rust, corrosion, and condensation on most surfaces.	Completing the necessary repairs and establishing routine maintenance practices is recommended to prevent future problems.
The operator reported that sump pumps discharge into the collection system.	The city needs to enforce the city's ordinances regarding flows from sump pumps. These excess inflows into the system can result in unauthorized discharges from the collection system and the treatment facility.

EFFLUENT LIMITS – OUTFALL 001

The permittee shall comply with the effluent limits specified below. These limits are based on the Secondary Treatment Standards (ARSD Section 74:52:06:03), the SDSWQS, permit writer's judgment, and current permit limits.

The permittee shall comply with the effluent limits specified below.

Outfall 001 – Any discharge from the discharge pipeline to Lake Sharpe (Missouri River) (Latitude 44.345886°, Longitude -100.320026°, Navigational Quality GPS).

1. The Five-Day Biochemical Oxygen Demand (BOD_5) concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on the Secondary Treatment Standards and are being included because SDDENR has determined there is a reasonable potential for BOD_5 to be present in the discharge at levels that may violate the SDSWQS (ARSD Section 74:52:06:03).

2. The Total Suspended Solids (TSS) concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on Secondary Treatment Standards and are being included because SDDENR has determined there is a reasonable potential for TSS to be present in the discharge at levels that may violate the SDSWQS (ARSD Section 74:52:06:03).

3. Percentage Removal Requirements (TSS, BOD_5 limit): In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal). This limit is based on the Secondary Treatment Standards (ARSD Section 74:52:06:03).

4. The pH shall not be less than 6.6 standard units or greater than 8.3 standard units in any single analysis and/or measurement. These limits are based on current permit limits to prevent backsliding of the permit limits, and permit writer's judgment. The current permit limits were based on the previous water quality standard for coldwater permanent fish life propagation waters.

   Note: SDDENR specifies that pH analyses are to be conducted within 15 minutes of sample collection with a pH meter. Therefore, the permittee must have the ability to conduct onsite pH analyses. The pH meter used must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

5. *Escherichia coli* (*E. coli*) organisms shall not exceed a concentration of 126 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any calendar month. *This limit is only applicable if five or more samples are taken and is only effective from May 1 to September 30.*

   In addition, the *E. coli* organisms shall not exceed 235 per 100 milliliters in any one sample from May 1 to September 30. These limits are based on the immersion recreation beneficial use classification of Lake Sharpe (Missouri River) and the SDSWQS (ARSD Section 74:51:01:50) and are being included because SDDENR has determined there is a reasonable potential for *E. coli* to be present in the discharge at levels that may violate the SDSWQS.

6. Total coliform organisms may not exceed 5,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any calendar month. In addition, total coliform organisms may not exceed 20,000 per 100 milliliters in any one sample. These limits are based on the domestic water supply criteria of Lake Sharpe (Missouri River) and the SDSWQS (ARSD Section 74:51:01:44).

7. The oil and grease concentration shall not exceed 1.0 mg/L (in any grab sample) or impart a visible film or sheen to the surface of the water or to the adjoining shorelines. If a visible film or sheen is observed in the receiving stream a sample shall be taken and a concentration shall be determined using EPA method 1664A oil and grease hexane extraction with silica gel. This limit is based on the domestic water supply waters classification of Lake Sharpe (Missouri River) and the SDSWQS (ARSD Sections 74:51:01:10 and 74:51:01:44).

   The SDSWQS specify a limit of 1 mg/L for Total Petroleum Hydrocarbons (TPH) for all waters classified as domestic water supply waters. However, the oil and grease analysis can also monitor TPH. Therefore, the oil and grease limit will be decreased to 1 mg/L and any sample taken in accordance with the visual monitoring requirements shall conform to the approved method mentioned above.

8. The Total Residual Chlorine (TRC) concentration in any one sample shall not exceed 0.019 mg/L. This limit is based on the coldwater permanent fish life propagation waters classification of Lake Sharpe (Missouri River) and the SDSWQS (ARSD Sections 74:51:01:45 and 74:51:01:55) and is being included because SDDENR has determined there is a reasonable potential for TRC to be present in the discharge at levels that may violate the SDSWQS. This limit is applicable only if the effluent is chlorinated.

   Note: SDDENR considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "below detection level" shall be used for reporting purposes.

9. The Peracetic Acid (PAA) concentration in any one sample shall not exceed 1.0 mg/L. This limit is based on aquatic toxicity studies, the pilot study proposal, and permit writer's judgment. This limit is applicable only if the effluent is being disinfected with PAA. The permit may be reopened if it is determined that the limit of 1.0 mg/L for PAA is not sufficient for maintaining the water quality in the receiving stream.

10. Acute Toxicity, as measured by the Whole Effluent Toxicity (WET) test, shall be less than 1 toxic unit (TU_a). This limit is based on the SDSWQS (ARSD, Section 74:51:01:12), the SDDENR *Guidance Document for Whole Effluent Toxicity (WET)*, and permit writer's judgment.

11. No chemicals shall be used without prior written permission. This limit is based on permit writer's judgment.

SDDENR conducted a reasonable potential analysis (Attachment 3) to determine if the city of Pierre has the potential to exceed the water quality standards of Lake Sharpe (Missouri River). If reasonable potential is determined, SDDENR is required to develop a limit for that parameter. Additionally, in accordance with South Dakota's *Reasonable Potential Implementation Procedure for SWD Permits,* for those parameters with a highest reasonable potential concentration of greater than 50% of the water quality standard, increased monitoring for that pollutant will be required.

The following parameters have a reasonable potential to violate the acute water quality standards: temperature, dissolved oxygen, and copper. Because of the large difference between the flow rate of Lake Sharpe (Missouri River) and the effluent flow rate from the city of Pierre WWTF, it is expected that the effluent will immediately mix with the receiving stream. Based on this, no limit will be included for temperature, dissolved oxygen, or copper. The parameters that have a reasonable potential to violate the chronic water quality standards are copper and weak acid dissociable (WAD) cyanide. If water quality-based effluent limits were established for these parameters, the limits would be much higher than any expected pollutant loadings from the city of Pierre WWTF. Therefore, no limits will be included in this permit renewal for chronic copper and WAD cyanide. The permit may be reopened to include temperature, dissolved oxygen, copper, or WAD cyanide limits if in the future it is determined to be necessary.

Normally when discharges reach waters classified for the beneficial uses of fish life propagation water quality based effluent limits are calculated for ammonia. However, due to the high flows present in the Missouri River, the development of water quality-based effluent limits would have resulted in ammonia limits that are much higher than any expected pollutant loadings from the city of Pierre's WWTF. Therefore, no ammonia limits will be included with this permit renewal. However, ammonia monitoring will still be required in this permit renewal due to the known presence of ammonia in the effluent and to properly characterize the discharge. The permit may be reopened to include ammonia limits if in the future it is determined to be necessary.

SDDENR does not believe there is a reasonable potential for other pollutants to violate the SDSWQS. The limits and monitoring in the draft permit will be sufficient to ensure the protection of the water quality near the city of Pierre's discharge.

SELF MONITORING REQUIREMENTS – OUTFALL 001

The draft permit requires the permittee to monitor all discharges for BOD_5 (mg/L), TSS (mg/L), percent removal of BOD_5 and TSS, pH (su), oil and grease (visual absent/present, mg/L), TRC (mg/L), and PAA (mg/L). In addition, *E. coli* (#/100mL) and Acute WET (TU_a) shall be monitored at the frequency outlined in the draft permit. These monitoring requirements are based on the limits in the draft permit for these parameters.

Effluent water temperature (˚C), flow rate (MGD), dissolved oxygen (DO, mg/L), ammonia-nitrogen (as N, mg/L), total phosphorus (mg/L), total nitrogen (mg/L), influent TSS (mg/L), influent BOD_5 (mg/L), total hardness (mg/L), molybdenum (µg/L), and parameters outlined in ARSD Sections 74:52:02:41 (organic toxics, µg/L), 74:52:02:42 (metals, cyanide, and total phenols, µg/L), and 74:52:02:44 (other toxics, µg/L) shall be monitored but will not have a limit. These monitoring requirements are based on the need to fully characterize the discharge.

A reasonable potential analysis was completed for the city of Pierre WWTF. Those parameters which have a highest reasonable potential concentration greater than 50% of the SDSWQS will have increased monitoring requirements in this draft permit. Based on this analysis temperature, dissolved oxygen, and copper will have increased monitoring.

The city of Pierre was approved to electronically submit DMRs through NetDMR on January 24, 2013. Effluent monitoring results shall be summarized for each month and recorded on a DMR to be submitted via NetDMR to SDDENR on a **monthly** basis. If no discharge occurs during a month, it shall be stated as such on the DMR.

On July 30, 2013, the Environmental Protection Agency (EPA) published in the federal register a rule that would make electronic reporting of permit reporting requirements mandatory for all SWD permits. The proposed rule is not finalized; however, it is expected to become final during the current permit cycle. EPA's proposed rule, when implemented, will require all permit reporting requirements to be submitted electronically. SDDENR is working on programs to meet this requirement and will notify facilities as they become available.

Monitoring shall consist of **daily** inspections of the mechanical processes of the facility. Inspections of lift stations shall occur at least **twice per week**. Daily inspections of the lift stations are recommended. Documentation of each of these visits shall be recorded in a notebook to be reviewed by the EPA or SDDENR personnel when an inspection occurs.

EFFLUENT LIMITS – OUTFALL 002

The permittee shall comply with the effluent limits specified below. These limits are based on the *South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities (Chapter 12 Disposal of Effluent by Irrigation)* and permit writer's judgment.

Outfall 002N – Any discharge to waters of the state from the land application system or land application sites (Attachment 7). **No discharge shall occur from Outfall 002N.**

Effective immediately and lasting throughout the life of this permit, the permittee shall have **no discharge** of land applied waters to waters of the state, except in accordance with the bypass or emergency release provisions of the permit. If a discharge occurs or is expected to occur, the permittee shall report the occurrence in accordance with **Section 4.2 – Effluent violation, Bypass, Emergency Discharge, and SSO Reporting Requirements** of the draft permit and take the appropriate measures to minimize the discharge of pollutants. Such measures shall include the closing of facilities that contribute water to the wastewater treatment facility or the land application system until the discharge is terminated. **The act of land applying treated wastewater is not considered a discharge.**

Outfall 002R – Any land application from the land application system to the approved land application sites (Attachment 7). **Land application of wastewater is not considered a discharge.**

1. The application rate at the land application site shall be controlled so as to prevent any surface runoff of the effluent. This limit is based on permit writer's judgment and the *South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities.*

2. To prevent ground saturation and runoff, no application is permitted during periods of heavy or prolonged rainfall, snow cover, or when the ground is frozen. **No land application shall take place between November 1 through March 31, unless prior approval is granted by SDDENR.** This limit is based on the *South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities.*

3. The land application equipment shall, to the extent feasible, be installed in such a manner as to minimize wind drift of the effluent and formation of aerosols. This limit is based on the *South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities.*

4. *Escherichia coli (E. coli)* shall not exceed a concentration of 126 per 100 milliliters in any one sample. This is based on the immersion recreation 30-day geometric mean limit for *E. coli* and permit writer's judgment. It is included in the draft permit due to the potential for human contact with irrigation water. **If any *E. coli* sample is greater than 126 per 100 milliliters, the land application shall be terminated immediately until a safe sample is collected.**

5. Appropriate warning signs shall be posted on the land application site to inform the public of the nature of the water. This limit is based on permit writer's judgment.

6. By **December 1, 2015,** the facility shall submit a land application best management plan to SDDENR for approval. The land application best management plan shall be based on the *South Dakota Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities.*

SELF MONITORING REQUIREMENTS – OUTFALL 002

The draft permit requires the permittee to monitor all land applications of wastewater for *E. coli* (#/100 mL). This monitoring requirement is based on the limit in the draft permit for this parameter. Rate of land application (flow rate, MGD), days land applied (days), total amount land applied (million gallons), pH (su), water temperature (°C), sodium absorption ratio (SAR), conductivity (umhos/cm), total kjeldahl nitrogen (mg/L), ammonia-nitrogen (as N, mg/L), total nitrates (as N, mg/L), total nitrites (as N, mg/L), total sulfates (mg/L), total chlorides (mg/L), total phosphorus (as P, mg/L), and total dissolved solids (TDS, mg/L) shall be monitored but will not have a limit. These monitoring requirements are based on the need to fully characterize the treated wastewater being used for land application. The permittee shall report the monitoring results in accordance with reporting requirements found in the draft permit.

The permittee shall inspect the land application system **daily** while land applying wastewater. The permittee shall also conduct **daily** inspections of the land application areas while land applying. The inspections shall be conducted to determine that the land application system is

operating correctly and to ensure that no runoff is occurring as a result of land application. Documentation of each inspection shall be kept to be reviewed by department or EPA personnel when an inspection occurs.

LAND APPLICATION BEST MANAGEMENT PRACTICES PLAN

By **December 1, 2015**, the city shall submit to SDDENR for review and approval a Best Management Practices Plan for land application. The goal of the plan shall be to ensure protection of surface and ground water supplies and to protect human health. The plan shall be prepared in accordance with the *South Dakota Recommended Design Criteria for Wastewater Collection and Treatment Facilities*, available for download at http://www.denr.sd.gov/des/sw/documents/DesignCriteriaManual.pdf, or in hard copy upon request from the department.

The department shall be kept informed of the land application sites and the proposed time frame of use, and shall be notified at least 30 days in advance of any changes. The plan must be updated to include all site changes and submitted to SDDENR for review and approval.

WHOLE EFFLUENT TOXICITY

The SDDENR *Reasonable Potential Implementation Procedure for SWD Permits* was reviewed to determine if Whole Effluent Toxicity (WET) testing is applicable to the city of Pierre WWTF. Following the guidance document, the city of Pierre WWTF has reasonable potential to cause or contribute to an exceedance of the SDSWQS for toxicity.

The city of Pierre WWTF's current permit includes acute WET testing and monitoring requirements. Due to the potential presence of toxic compounds in the discharge, the draft permit will include WET monitoring and limits.

The SDDENR *Guidance Document for Whole Effluent Toxicity (WET)* was followed to determine the limits, sampling and monitoring frequency and types, dilution water, dilution series, hardness of the dilution water, test methods and temperatures, and other WET testing procedures to use.

SDDENR is switching from a WET limit of Pass/Fail to Toxic Units (TUa = Acute Toxic Units, TUc = Chronic Toxic Units). One of the advantages to switching to TU's is that it will allow labs, facilities, and SDDENR to use statistics to help eliminate false negatives and false positives, providing more accurate results. Therefore, in this permit cycle, the facility will be required to report in TUa.

PRETREATMENT

POTWs with a 5 MGD or greater design flow which receive wastewater from a significant industrial user are required under 40 CFR 403.8 to develop a pretreatment program. The state may also require a POTW with a lower design flow to develop a program to prevent Pass Through or Interference with the POTW, including biosolids.

The city of Pierre has a design flow of less than 5.0 MGD, and no industries that are likely to cause pass through or interference with the POTW. Therefore, the draft permit will not require the city of Pierre to develop an industrial pretreatment program. However, the city must still meet the requirements for regulating nondomestic sources of wastewater entering its system in accordance with the requirements of **Section 6.0 – Industrial Wastes** of the draft permit.

SLUDGE

SDDENR has issued the city of Pierre an individual Biosolids Management permit (SDL020176). Therefore, the draft Surface Water Discharge permit shall not contain sludge disposal requirements.

STORM WATER

The city of Pierre has obtained a No Exposure Certification under the General Permit for Storm Water Discharges Associated with Industrial Activity, therefore the draft Surface Water Discharge permit shall not contain storm water language.

DRAINAGE ISSUES

Hughes County has the authority to regulate drainage. The city of Pierre is responsible for obtaining any necessary drainage permits from the county **prior** to discharging.

ENDANGERED SPECIES

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit. However, the table below shows the species that may be present in the city of Pierre WWTF's geographic area.

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE
HUGHES and STANLEY	BIRD	CRANE, WHOOPING	KNOWN
		TERN, LEAST	KNOWN
	FISH	STURGEON, PALLID	KNOWN
STANLEY	MAMMAL	FERRET, BLACK-FOOTED [1]	KNOWN

[1] Black-footed ferrets have been reintroduced in the Badlands national Park, Buffalo Gap National Grasslands, Cheyenne River Sioux Reservation, Lower Brule Sioux Reservation, Rosebud Sioux Reservation, and Wind Cave National Park.

This information was accessible at the following US Fish and Wildlife Service website as of January 8, 2015, and was last updated by the US Fish and Wildlife Service December 17, 2014: http://www.fws.gov/southdakotafieldoffice/SpeciesByCounty_2014.pdf

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

This statement of basis and the draft permit were developed by Kelsey Holbrook, Engineer I for the Surface Water Quality Program. Any questions pertaining to this statement of basis or the proposed permit can be directed to the Surface Water Quality Program, at (605) 773-3351.

August 13, 2015

ATTACHMENT 1

Antidegradation Review

Permit Type: **Major Municipal - Renewal** Applicant: **City of Pierre**
Date Received: **04/25/2011** Permit #: **SD0020176**
County: **Hughes** Legal Description: **NW ¼ S10, T110N, R79W**
Receiving Stream: **Lake Sharpe (Missouri River)** Classification: **1, 2, 7, 8, 9, 10, 11**
If the discharge affects a downstream waterbody with a higher use classification, list its name and uses: **NA**

APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:

☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
☐ *Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;

☐ *Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
☐ *The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
☐ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
☒ Other: This permit does not authorize an increase in effluent limits.

*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

No further review required.

ANTIDEGRADATION REVIEW SUMMARY

2. The outcome of the review is:

- ☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
- ☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
- ☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
- ☐ The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
- ☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
- ☐ Other: _____

3. Describe any other requirements to implement antidegradation or any special conditions That are required as a result of this antidegradation review: _____

Kelsey Holbrook	August 13, 2015
Reviewer	Date
Albert Spangler, PE	August 13, 2015
Team Leader	Date

ATTACHMENT 2

Monitoring Data

DMR MONITORING DATA
2007 – 2015

	Flow Rate		Oil & Grease	Oil & Grease	Dissolved Oxygen (DO)	pH		TSS		Temperature	
	30-Day Avg.	Daily Max.	Visual	Daily Max.	Daily Min.	Daily Min.	Daily Max.	30-Day Avg.	Max. 7-Day Avg.	30-Day Avg.	Daily Max.
Date / Limit	N/A, MGD		Y=1, N=0	10 mg/L	N/A, mg/L	6.6 SU	8.3 SU	30 mg/L	45 mg/L	N/A, °C	
Jan-07	1.52	2.13	0	NR	6.4	6.83	7.56	10	13	15	17
Feb-07	1.54	2.02	0	NR	7.5	6.87	7.46	12	16	14	16
Mar-07	1.53	2.01	0	NR	6.5	6.9	7.64	11	13	15	17
Apr-07	1.52	1.72	0	NR	7.8	7	7.7	12	15	16	21
May-07	1.55	1.84	0	NR	7.6	6.82	7.7	9	11	19	21
Jun-07	1.65	1.98	0	NR	7	7.12	7.53	12	16	21	23
Jul-07	1.53	1.75	0	NR	7.2	7	7.63	8	12	23	26
Aug-07	1.51	2.08	0	NR	6.7	7.01	8.27	8	13	23	25
Sep-07	1.42	1.69	0	NR	6.8	6.99	7.43	7	11	22	27
Oct-07	1.51	1.76	0	NR	6.8	6.86	7.74	10	11	20	21
Nov-07	1.59	2.5	0	NR	7.3	6.7	7.55	13	19	18	19
Dec-07	2.03	2.03	0	0	6	6.77	7.49	11	18	16	17
Jan-08	1.65	2.53	0	NR	4.7	6.61	7.35	**31**	45	14	16
Feb-08	1.46	1.93	0	NR	6	6.61	7.12	29	37	12	15
Mar-08	1.41	1.92	0	NR	5.3	6.72	7.19	14	16	14	16
Apr-08	1.42	1.72	0	NR	6.8	6.61	7.38	10	12	15	17
May-08	1.5	1.91	0	NR	5.3	6.7	7.31	11	12	17	19
Jun-08	1.65	2.32	0	NR	5.4	6.93	7.48	13	23	19	23
Jul-08	1.59	1.93	0	NR	4.9	6.63	7.47	10	13	21	23
Aug-08	1.5	1.85	0	NR	5.6	6.82	7.31	11	19	22	25
Sep-08	1.44	1.78	0	NR	6.5	6.63	7.35	7	8	21	23
Oct-08	1.45	1.78	0	NR	6.6	6.89	7.65	10	14	19	21
Nov-08	1.45	1.72	0	NR	7.2	7.26	7.76	8	11	18	20
Dec-08	1.51	1.98	0	NR	7.6	7.04	7.76	9	10	15	17
Jan-09	1.56	2.8	0	NR	6.9	7.31	7.76	7	11	14	15
Feb-09	1.47	1.72	0	NR	7.5	7.18	7.92	9	14	14	17
Mar-09	1.45	1.76	0	NR	4.7	6.88	7.72	11	17	13	16
Apr-09	1.49	1.69	0	NR	5.4	7.17	7.81	11	12	15	18
May-09	1.46	1.85	0	NR	0.69	7.25	7.83	11	15	17	19
Jun-09	1.51	1.72	0	NR	7	7.25	8.11	8	10	19	22
Jul-09	1.53	1.92	0	NR	5.3	7.18	8.01	12	17	21	22
Aug-09	1.55	1.89	NR	NR	7	7.19	7.99	14	27	21	22
Sep-09	1.51	1.77	0	NR	6.5	7	7.76	13	18	20	22
Oct-09	1.55	1.87	0	NR	6.9	6.96	7.89	15	18	18	19

	Flow Rate		Oil & Grease	Oil & Grease	Dissolved Oxygen (DO)	pH		TSS		Temperature	
	30-Day Avg.	Daily Max.	Visual	Daily Max.	Daily Min.	Daily Min.	Daily Max.	30-Day Avg.	Max. 7-Day Avg.	30-Day Avg.	Daily Max.
Date / Limit	N/A, MGD		Y=1, N=0	10 mg/L	N/A, mg/L	6.6 SU	8.3 SU	30 mg/L	45 mg/L	N/A, °C	
Nov-09	1.48	1.74	0	NR	7.2	6.61	7.36	13	16	17	19
Dec-09	1.44	1.74	0	NR	6.9	6.65	7.09	9	13	14	17
Jan-10	1.56	2.1	0	NR	7	6.62	7.39	9	11	13	14
Feb-10	1.45	2.53	0	NR	7	6.62	7.41	7	9	12	14
Mar-10	1.73	2.59	0	NR	6.3	6.63	7.02	8	13	13	15
Apr-10	1.57	1.92	0	0	6.7	6.6	6.88	10	21	15	18
May-10	1.17	2.09	0	NR	6.3	6.63	7.29	13	16	17	19
Jun-10	1.72	2.12	0	NR	6.9	6.63	6.9	21	**50**	20	22
Jul-10	1.67	2.21	0	NR	5.5	6.74	7.84	13	20	21	24
Aug-10	1.17	1.96	0	NR	5.8	6.82	7.61	10	17	22	24
Sep-10	1.62	1.96	0	NR	7.2	6.91	7.42	9	10	20	22
Oct-10	1.57	1.88	0	0	6.6	6.85	7.85	12	16	19	20
Nov-10	1.55	1.93	0	NR	7	6.74	7.34	8	12	17	19
Dec-10	1.5	1.69	0	NR	6.9	6.69	7.71	11	15	15	17
Jan-11	1.51	1.72	0	NR	6.8	6.66	7.24	11	13	13	17
Feb-11	1.52	1.81	0	NR	7.3	6.65	7.57	10	11	13	15
Mar-11	1.59	1.91	0	NR	7.4	6.83	7.17	10	12	13	15
Apr-11	1.62	1.9	0	NR	7.9	6.79	7.34	11	14	15	17
May-11	1.86	2.47	0	NR	8	6.77	7.65	15	24	16	18
Jun-11	3.71	5.16	0	NR	7.8	7	7.89	19	29	17	25
Jul-11	3.94	4.4	0	NR	7.6	7	7.82	16	29	21	25
Aug-11	3.04	3.83	0	NR	5.8	7.3	7.84	15	18	21	24
Sep-11	2	2.35	0	NR	6.9	6.86	7.79	19	25	20	22
Oct-11	1.68	2.23	0	NR	6.8	7	7.45	30	40	19	21
Nov-11	1.57	1.84	0	NR	7.2	6.87	7.42	22	29	17	19
Dec-11	1.48	1.84	0	NR	7.4	6.8	7.39	11	14	15	16
Jan-12	1.52	2.22	0	NR	8.1	6.86	7.53	12	14	14	17
Feb-12	1.49	1.75	0	NR	8	6.77	7.64	10	12	14	18
Mar-12	1.53	1.81	0	NR	7.8	6.73	7.12	13	17	15	17
Apr-12	1.59	1.94	0	NR	7.9	6.76	7.65	8	10	17	19
May-12	1.55	1.99	0	NR	6.8	6.71	7.4	11	16	19	22
Jun-12	1.58	1.89	0	NR	7.2	6.68	7.99	6	8	21	24
Jul-12	1.57	1.88	0	NR	2.3	6.79	7.35	9	12	22	24
Aug-12	1.47	1.81	0	NR	7	6.75	7.38	7	9	21	23
Sep-12	1.4	1.81	0	NR	7.3	6.74	7.34	9	11	20	21
Oct-12	1.37	1.94	0	NR	7.4	6.7	7.49	7	10	19	21
Nov-12	1.36	1.65	0	NR	6.9	6.71	7.4	13	18	17	19

	Flow Rate		Oil & Grease	Oil & Grease	Dissolved Oxygen (DO)	pH		TSS		Temperature	
	30-Day Avg.	Daily Max.	Visual	Daily Max.	Daily Min.	Daily Min.	Daily Max.	30-Day Avg.	Max. 7-Day Avg.	30-Day Avg.	Daily Max.
Date / Limit	N/A, MGD		Y=1, N=0	10 mg/L	N/A, mg/L	6.6 SU	8.3 SU	30 mg/L	45 mg/L	N/A, °C	
Dec-12	1.28	1.54	0	NR	7.5	6.64	7.51	10	13	15	19
Jan-13	1.37	1.84	0	NR	7	6.61	7.65	7	8	14	20
Feb-13	1.42	1.86	0	NR	8.2	6.75	7.32	4	6	13	15
Mar-13	1.41	1.88	0	NR	8.3	6.61	7.54	6	7	13	15
Apr-13	1.52	2.03	0	NR	8	6.64	7.57	8	11	11	15
May-13	1.6	2.17	0	NR	7.9	6.63	8	10	14	15	18
Jun-13	1.6	2.03	0	NR	7.1	6.67	7.7	9	11	16	18
Jul-13	1.62	2.17	0	NR	6.8	6.61	7.52	12	23	18	21
Aug-13	1.65	2.01	0	NR	6.3	6.75	7.82	12	22	18	19
Sep-13	1.58	2.02	0	NR	6.6	7	7.78	10	14	21	23
Oct-13	1.62	2.27	0	NR	6.9	6.95	8.21	18	29	19	21
Nov-13	1.39	1.89	0	NR	7.2	6.8	8.01	18	29	17	18
Dec-13	1.25	1.7	0	NR	7.4	6.88	7.33	15	19	14	16
Jan-14	1.35	1.69	0	NR	7.5	6.78	7.41	10	11	14	19
Feb-14	1.29	1.73	0	NR	6.9	6.89	7.4	11	16	13	14
Mar-14	1.42	1.88	0	NR	6.8	6.78	7.08	11	22	13	14
Apr-14	1.69	2.5	0	NR	6.8	6.74	7.13	22	28	15	16
May-14	1.83	2.29	0	NR	7.2	6.8	7.16	14	20	18	21
Jun-14	1.84	2.51	0	NR	7.8	6.66	7.49	9	11	19	23
Jul-14	1.63	2.13	0	NR	7.7	6.83	7.23	7	9	21	23
Aug-14	1.39	1.76	0	NR	7.2	6.82	7.26	10	21	21	22
Sep-14	1.38	1.76	0	NR	7	6.85	7.32	6	8	20	22
Oct-14	1.32	1.77	0	NR	6.5	6.72	7.32	6	9	19	20
Nov-14	1.25	1.73	0	NR	7.1	6.74	7.14	9	11	16	20
Dec-14	1.15	1.56	0	NR	6.2	6.82	7.07	8	15	15	17
Jan-15	1.21	1.8	0	NR	5.8	6.76	7.13	8	9	15	17
Feb-15	1.22	1.68	0	NR	7.6	6.73	7.39	19	22	13	15
Mar-15	1.43	1.69	0	NR	7.6	6.84	7.69	12	26	16	18
Apr-15	1.24	1.5	0	NR	4.8	7.07	7.71	11	14	17	19.4
May-15	1.33	1.79	0	NR	5.5	6.71	7.6	8	14	18	21.7
June-15	1.6	2.1	0	NR	6.4	6.64	7.17	12	18	19.8	21.2

NR is Not Required. No sample was required for this parameter during the monitoring period.

Violations are bolded, shaded, and larger font.

	BOD$_5$		Total Residual Chlorine (TRC) [1]	Fecal Coliform		Total Coliform		Ammonia	
	30-Day Avg.	Max. 7-Day Avg.	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Avg.	Daily Max.
Date / Limit	30 mg/L	45 mg/L	0.019 mg/L	200 #/100mL	400 #/100mL	5000 #/100mL	20000 #/100mL	N/A, mg/L	
Jan-07	5	7	0	NR	NR	80	8,000	0.81	3.55
Feb-07	5	7	0	NR	NR	9	80	0.08	0.13
Mar-07	5	6	0	NR	NR	13	110	0.07	0.1
Apr-07	5	5	0	NR	NR	43	300	0.33	0.57
May-07	4	4	0	5	220	50	3,300	0.23	0.41
Jun-07	4	5	0	7	**1,700**	28	13,000	0.42	1.14
Jul-07	3	5	0	2	13	9	49	1.21	3.58
Aug-07	5	7	0	4	49	22	110	0.26	0.79
Sep-07	3	4	0	6	27	49	330	0.07	0.09
Oct-07	5	6	0	NR	NR	15	240	0.36	0.69
Nov-07	4	5	0	NR	NR	24	2,300	0.14	0.24
Dec-07	7	9	0	NR	NR	44	790	0.73	2.1
Jan-08	12	13	0	NR	NR	127	790	1.81	6.8
Feb-08	14	16	0	NR	NR	131	460	0.08	0.09
Mar-08	7	9	0	NR	NR	54	1,300	0.31	0.98
Apr-08	7	9	0	NR	NR	59	790	1.18	3.36
May-08	6	6	0	5	33	39	230	3.14	7.77
Jun-08	8	10	0	7	49	54	330	2.92	5.24
Jul-08	7	10	0	5	230	24	330	2.33	4
Aug-08	4	5	0	3	49	12	140	0.26	0.67
Sep-08	4	5	0	9	140	95	1,400	0.13	0.15
Oct-08	4	5	0	NR	NR	177	2,200	0.08	0.1
Nov-08	5	8	0	NR	NR	126	790	0.12	0.16
Dec-08	5	6	0	NR	NR	151	7,900	0.29	0.54
Jan-09	5	6	0	NR	NR	60	490	0.22	0.33
Feb-09	6	8	0	NR	NR	66	490	0.68	2.4
Mar-09	5	6	0	NR	NR	93	1,100	0.12	0.2

	BOD$_5$		Total Residual Chlorine (TRC) [1]	Fecal Coliform		Total Coliform		Ammonia	
	30-Day Avg.	Max. 7-Day Avg.	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Avg.	Daily Max.
Date / Limit	30 mg/L	45 mg/L	0.019 mg/L	200 #/100mL	400 #/100mL	5000 #/100mL	20000 #/100mL	N/A, mg/L	
Apr-09	5	5	0	NR	NR	87	490	0.19	0.66
May-09	4	4	0	7	33	64	4,900	0.07	0.12
Jun-09	4	4	0	6	49	49	490	0.12	0.24
Jul-09	4	5	0	10	79	157	1,700	0.25	0.64
Aug-09	3	4	0	9	130	80	920	0.43	1.16
Sep-09	6	7	0	43	**11,000**	373	**160,000**	0.34	0.91
Oct-09	5	7	0	NR	NR	212	2,300	0.31	0.52
Nov-09	6	7	0	NR	NR	92	**24,000**	0.07	0.09
Dec-09	7	8	0	NR	NR	101	540	0.14	0.31
Jan-10	6	7	0	NR	NR	32	79	0.15	0.19
Feb-10	6	7	0	NR	NR	69	330	0.19	0.25
Mar-10	6	7	0	NR	NR	18	790	0.94	2.3
Apr-10	6	7	0	NR	NR	13	70	0.8	1.79
May-10	30	37	0	4	21	15	220	18.66	35.9
Jun-10	10	17	0	9	46	134	1,400	0.29	0.65
Jul-10	6	7	0	7	79	45	490	2.18	5.86
Aug-10	6	8	0	6	94	33	1,700	0.55	1.34
Sep-10	6	7	0	10	330	72	3,300	0.39	1.07
Oct-10	7	9	0	NR	NR	76	490	0.61	1.59
Nov-10	5	7	0	NR	NR	36	3,500	0.13	0.19
Dec-10	5	6	0	NR	NR	28	280	0.36	0.59
Jan-11	6	7	0	NR	NR	50	330	0.09	0.12
Feb-11	6	6	0	NR	NR	76	1,300	0.34	1.19
Mar-11	6	7	0	NR	NR	58	310	0.27	0.55
Apr-11	5	7	0	NR	NR	49	330	1.67	6.35
May-11	7	10	0	7	30	30	220	0.51	1.84
Jun-11	6	6	ND	ND	ND	144	1,300	0.16	0.52
Jul-11	4	6	ND	23	94	144	2,400	0.29	0.73
Aug-11	5	8	ND	12	33	86	490	0.09	0.17

	BOD$_5$		Total Residual Chlorine (TRC) [1]	Fecal Coliform		Total Coliform		Ammonia	
	30-Day Avg.	Max. 7-Day Avg.	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Geo. Mean	Daily Max.	30-Day Avg.	Daily Max.
Date / Limit	30 mg/L	45 mg/L	0.019 mg/L	200 #/100mL	400 #/100mL	5000 #/100mL	20000 #/100mL	N/A, mg/L	
Sep-11	7	12	0	10	70	98	940	0.55	1.26
Oct-11	7	9	0	NR	NR	61	1,300	0.06	0.07
Nov-11	6	9	0	NR	NR	138	700	0.08	0.1
Dec-11	6	7	0	NR	NR	71	170	0.08	0.09
Jan-12	5	6	0	NR	NR	114	2,200	0.08	0.1
Feb-12	6	9	0	NR	NR	71	280	0.78	2.5
Mar-12	5	8	0	NR	NR	102	1,300	0.14	0.19
Apr-12	4	5	0	NR	NR	44	170	1.68	6.27
May-12	6	6	0	8	33	42	240	0.09	0.12
Jun-12	5	6	0	7	33	49	170	0.07	0.09
Jul-12	4	4	0	5	49	28	220	0.11	0.17
Aug-12	4	5	0	5	30	70	330	0.1	0.14
Sep-12	4	4	0	4	79	19	330	0.06	0.08
Oct-12	5	5	0	NR	NR	18	130	0.06	0.08
Nov-12	7	8	0	NR	NR	82	1,300	0.12	0.22
Dec-12	5	6	0	NR	NR	76	310	0.07	0.09
Jan-13	5	5	0	NR	NR	45	490	0.08	0.12
Feb-13	4	4	0	NR	NR	44	130	0.07	0.09
Mar-13	4	5	0	NR	NR	23	330	0.09	0.13
Apr-13	4	5	0	NR	NR	32	240	0.06	0.08
May-13	4	5	0	5	82	33	3,300	0.09	0.14
Jun-13	4	4	0	11	110	61	330	0.17	0.45
Jul-13	5	6	0	5	94	36	350	0.06	0.1
Aug-13	4	6	0	5	310	74	17,000	0.06	0.07
Sep-13	5	6	0	5	23	41	230	0.08	0.11
Oct-13	6	6	0	NR	NR	71	790	0.28	1.07
Nov-13	6	9	0	NR	NR	75	240	0.09	0.13
Dec-13	6	7	0	NR	NR	105	400	0.08	0.1
Jan-14	5	7	0	NR	NR	93	3,300	0.06	0.1

	BOD$_5$		Total Residual Chlorine (TRC) [1]	Fecal Coliform		Total Coliform		Ammonia	
	30-Day Avg.	**Max. 7-Day Avg.**	**Daily Max.**	**30-Day Geo. Mean**	**Daily Max.**	**30-Day Geo. Mean**	**Daily Max.**	**30-Day Avg.**	**Daily Max.**
Date / Limit	**30 mg/L**	**45 mg/L**	**0.019 mg/L**	**200 #/100mL**	**400 #/100mL**	**5000 #/100mL**	**20000 #/100mL**	**N/A, mg/L**	
Feb-14	5	6	0	NR	NR	221	1,700	0.16	0.39
Mar-14	6	6	0	NR	NR	41	170	0.24	0.49
Apr-14	12	14	0	NR	NR	64	230	0.22	0.53
May-14	7	8	0	6	33	90	240	0.12	0.38
Jun-14	5	5	0	5	31	42	490	0.05	0.06
Jul-14	4	5	0	7	110	51	330	0.15	0.39
Aug-14	4	5	0	12	130	104	1,700	0.11	0.28
Sep-14	3	4	**0.1**	7	110	39	330	0.08	0.1
Oct-14	5	7	**0.25**	NR	NR	73	6,300	0.21	0.64
Nov-14	6	6	0	NR	NR	108	4,600	0.17	0.46
Dec-14	5	6	0	NR	NR	93	220	0.16	0.31
Jan-15	6	8	0	NR	NR	162	6,300	0.21	1.14
Feb-15	12	13	**0.05**	NR	NR	448	3,300	3.01	10.3
Mar-15	9	13	BD	NR	NR	789	7,000	3.15	10.2
Apr-15	12	16	**0.07**	NR	NR	192	4,900	27.04	36.4
May-15	8	11	BD	**210**	**35,000**	1,815	**170,000**	7.86	25.3
June-15	8	11	BD	80	**1,300**	1,048	13,000	0.13	0.14

[1] There were numerous TRC violations that were not reported throughout the monitoring period.
BD is Below Detection. Pollutant concentrations were too small to be measured.
NR is Not Required. No sample was required for this parameter during the monitoring period.
ND is Natural Disaster. No sample was taken due to a natural disaster.
Violations are bolded, shaded, and larger font.

REPORTED METALS MONITORING DATA
2007-2014

Date	Total Lead (as Pb)	Total Mercury (as Hg)	Total Molybdenum (as Mo)	Total Nickel (as Ni)	Phenols	Total Selenium (as Se)	Total Silver (as Ag)	Total Thallium (as Tl)	Total Zinc (as Zn)
	Daily Max. mg/L	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**
Dec-07	0.0034	BD	0.0055	0.007	BD	0.0038	0.0011	BD	0.0653
Dec-08	BD	BD	0.0035	0.0066	BD	0.0044	0.0008	BD	0.0281
Dec-09	BD	BD	0.0041	0.0074	BD	0.0058	0.0012	BD	0.02
Dec-10	BD	BD	0.0031	0.0054	BD	0.0034	BD	BD	0.0207
Dec-11	0.0002	BD	0.0041	0.0095	BD	0.0076	BD	0.0004	0.0234
Dec-12	BD	BD	0.0037	0.0077	BD	0.0038	BD	BD	0.0216
Dec-13	BD	BD	0.004	0.0105	BD	0.0062	BD	0.0009	0.0215
Dec-14	BD	BD	0.0036	0.0077	BD	BD	BD	BD	0.0274

Date	Total Antimony (as Sb)	Total Arsenic (as As)	Total Beryllium (as Be)	Total Cadmium (as Cd)	Total Chromium (as Cr)	Total Copper (as Cu)	Total Cyanide (as CN)	Cyanide (WAD)
	Daily Max. mg/L	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**	**Daily Max. mg/L**
Dec-07	BD	BD	BD	BD	BD	0.0608	BD	BD
Dec-08	BD	BD	BD	BD	0.004	0.0346	BD	BD
Dec-09	BD	BD	BD	BD	BD	BD	BD	BD
Dec-10	BD	BD	BD	BD	BD	0.03	BD	BD
Dec-11	BD	0.02	BD	BD	0.0005	0.0326	BD	BD
Dec-12	BD	BD	BD	BD	0.0006	0.04	BD	BD
Dec-13	BD	0.008	BD	BD	BD	0.04	BD	BD
Dec-14	BD	0.009	BD	NS	BD	0.05	BD	BD

BD - below detection. Pollutant concentrations were too small to be measured.
NS - no sample. No sample is available for these parameters.

ATTACHMENT 3

Reasonable Potential Analysis

Attachment 3.1: Reasonable Potential Analysis Methods

The following reasonable potential analyses were completed to determine if parameters found in the city of Pierre WWTF effluent have a reasonable potential to violate the SDSWQS. SDDENR's reasonable potential analysis methodology is documented in *Reasonable Potential Implementation Procedure for SWD Permits*, April 2013.

Reasonable potential is determined based on the highest reasonable potential concentration and the SDSWQS. The highest reasonable potential concentration is determined one of two ways. For acute standards, the highest reasonable potential concentration is the product of the maximum effluent concentration and the multiplying factor. The multiplying factor is computed in accordance with EPA's reasonable potential determination, page 6, *Reasonable Potential Implementation Procedure for SWD Permits*, April 2013. For chronic standards, the reasonable potential analysis takes into consideration a mixing zone as well as the upstream concentration of a specific pollutant. From this information the maximum instream concentration is calculated. The highest reasonable potential concentration is the product of the maximum instream concentration and the multiplying factor, which is discussed above.

If it is determined that there is a reasonable potential for the city of Pierre WWTF effluent to violate the SDSWQS for a given parameter, water quality based effluent limits will be determined. If the highest reasonable potential concentration is greater than 50% of the SDSWQS monitoring will be required for the given parameter.

Attachment 3.2: Acute Standards

In accordance with South Dakota's *Mixing Zone and Dilution Implementation Procedures,* August 1998, ammonia is allowed a mixing zone for acute and chronic standards. Because the Missouri River is the receiving stream of the city of Pierre WWTF's effluent, it is expected that the receiving flow will be much higher than the effluent flow rate from the city of Pierre WWTF. Therefore a reasonable potential analysis was completed for ammonia using acute standards and allowing a mixing zone.

In order to complete the reasonable potential analysis receiving stream conditions had to be reviewed, as well as the city of Pierre WWTF effluent data. Effluent flow rate was calculated using DMR monitoring data from 2007 to 2015. The effluent flow rate of 3.32 cfs is the 80th percentile of the daily maximum flow rate (Attachment 4). The receiving stream flow rate used in the mixing zone calculations is the 7-day average low flow that can be expected to occur once every 25 years (7Q25). This value is used because the receiving stream (Missouri River) is a high-quality fishery. Those receiving streams classified for the beneficial uses of coldwater permanent fish life propagation, coldwater marginal fish life propagation, or warmwater permanent fish life propagation are defined as high-quality fishery waters. A dilution factor of 10% is assumed due to the ratio of the effluent flow rate to the annual 7Q25. Therefore, the receiving stream flow rate value used is 10% of the annual 7Q25 flow for the Missouri River (Attachment 5). The upstream ammonia concentration was calculated using the 80th percentile concentration from water quality modeling (WQM) data (Attachment 6).

The acute SDSWQS for ammonia was calculated using the 80th percentile pH of the receiving stream (Missouri River). This value was determined to be 8.6 standard units (Attachment 6). The SDSWQS for metals that are based on hardness were calculated using the 20th percentile hardness concentration of the receiving stream (Missouri River). This value was determined to be 220 mg/L (Attachment 6).

City of Pierre WWTF Monitoring Data

Date	BOD_5 mg/L	TSS mg/L	Oil & Grease mg/L	DO mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Jan-07	7	13	0	6.4	3.55	62.6	17
Feb-07	7	16	0	7.5	0.13	60.8	16
Mar-07	6	13	0	6.5	0.1	62.6	17
Apr-07	5	15	0	7.8	0.57	69.8	21
May-07	4	11	0	7.6	0.41	69.8	21
Jun-07	5	16	0	7	1.14	73.4	23
Jul-07	5	12	0	7.2	3.58	78.8	26
Aug-07	7	13	0	6.7	0.79	77	25
Sep-07	4	11	0	6.8	0.09	80.6	27
Oct-07	6	11	0	6.8	0.69	69.8	21
Nov-07	5	19	0	7.3	0.24	66.2	19
Dec-07	9	18	0	6	2.1	62.6	17
Jan-08	13	45	0	4.7	6.8	60.8	16
Feb-08	16	37	0	6	0.09	59	15
Mar-08	9	16	0	5.3	0.98	60.8	16
Apr-08	9	12	0	6.8	3.36	62.6	17
May-08	6	12	0	5.3	7.77	66.2	19
Jun-08	10	23	0	5.4	5.24	73.4	23
Jul-08	10	13	0	4.9	4	73.4	23
Aug-08	5	19	0	5.6	0.67	77	25
Sep-08	5	8	0	6.5	0.15	73.4	23
Oct-08	5	14	0	6.6	0.1	69.8	21
Nov-08	8	11	0	7.2	0.16	68	20
Dec-08	6	10	0	7.6	0.54	62.6	17
Jan-09	6	11	0	6.9	0.33	59	15
Feb-09	8	14	0	7.5	2.4	62.6	17
Mar-09	6	17	0	4.7	0.2	60.8	16
Apr-09	5	12	0	5.4	0.66	64.4	18
May-09	4	15	0	0.69	0.12	66.2	19
Jun-09	4	10	0	7	0.24	71.6	22
Jul-09	5	17	0	5.3	0.64	71.6	22
Aug-09	4	27	0	7	1.16	71.6	22
Sep-09	7	18	0	6.5	0.91	71.6	22
Oct-09	7	18	0	6.9	0.52	66.2	19
Nov-09	7	16	0	7.2	0.09	66.2	19
Dec-09	8	13	0	6.9	0.31	62.6	17
Jan-10	7	11	0	7	0.19	57.2	14
Feb-10	7	9	0	7	0.25	57.2	14
Mar-10	7	13	0	6.3	2.3	59	15
Apr-10	7	21	0	6.7	1.79	64.4	18
May-10	37	16	0	6.3	35.9	66.2	19
Jun-10	17	50	0	6.9	0.65	71.6	22
Jul-10	7	20	0	5.5	5.86	75.2	24
Aug-10	8	17	0	5.8	1.34	75.2	24
Sep-10	7	10	0	7.2	1.07	71.6	22

Date	BOD_5 mg/L	TSS mg/L	Oil & Grease mg/L	DO mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Oct-10	9	16	0	6.6	1.59	68	20
Nov-10	7	12	0	7	0.19	66.2	19
Dec-10	6	15	0	6.9	0.59	62.6	17
Jan-11	7	13	0	6.8	0.12	62.6	17
Feb-11	6	11	0	7.3	1.19	59	15
Mar-11	7	12	0	7.4	0.55	59	15
Apr-11	7	14	0	7.9	6.35	62.6	17
May-11	10	24	0	8	1.84	64.4	18
Jun-11	6	29	0	7.8	0.52	77	25
Jul-11	6	29	0	7.6	0.73	77	25
Aug-11	8	18	0	5.8	0.17	75.2	24
Sep-11	12	25	0	6.9	1.26	71.6	22
Oct-11	9	40	0	6.8	0.07	69.8	21
Nov-11	9	29	0	7.2	0.1	66.2	19
Dec-11	7	14	0	7.4	0.09	60.8	16
Jan-12	6	14	0	8.1	0.1	62.6	17
Feb-12	9	12	0	8	2.5	64.4	18
Mar-12	8	17	0	7.8	0.19	62.6	17
Apr-12	5	10	0	7.9	6.27	66.2	19
May-12	6	16	0	6.8	0.12	71.6	22
Jun-12	6	8	0	7.2	0.09	75.2	24
Jul-12	4	12	0	2.3	0.17	75.2	24
Aug-12	5	9	0	7	0.14	73.4	23
Sep-12	4	11	0	7.3	0.08	69.8	21
Oct-12	5	10	0	7.4	0.08	69.8	21
Nov-12	8	18	0	6.9	0.22	66.2	19
Dec-12	6	13	0	7.5	0.09	66.2	19
Jan-13	5	8	0	7	0.12	68	20
Feb-13	4	6	0	8.2	0.09	59	15
Mar-13	5	7	0	8.3	0.13	59	15
Apr-13	5	11	0	8	0.08	59	15
May-13	5	14	0	7.9	0.14	64.4	18
Jun-13	4	11	0	7.1	0.45	64.4	18
Jul-13	6	23	0	6.8	0.1	69.8	21
Aug-13	6	22	0	6.3	0.07	66.2	19
Sep-13	6	14	0	6.6	0.11	73.4	23
Oct-13	6	29	0	6.9	1.07	69.8	21
Nov-13	9	29	0	7.2	0.13	64.4	18
Dec-13	7	19	0	7.4	0.1	60.8	16
Jan-14	7	11	0	7.5	0.1	66.2	19
Feb-14	6	16	0	6.9	0.39	57.2	14
Mar-14	6	22	0	6.8	0.49	57.2	14
Apr-14	14	28	0	6.8	0.53	60.8	16
May-14	8	20	0	7.2	0.38	69.8	21
Jun-14	5	11	0	7.8	0.06	73.4	23
Jul-14	5	9	0	7.7	0.39	73.4	23

Date	BOD_5 mg/L	TSS mg/L	Oil & Grease mg/L	DO mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Aug-14	5	21	0	7.2	0.28	71.6	22
Sep-14	4	8	0	7	0.1	71.6	22
Oct-14	7	9	0	6.5	0.64	68	20
Nov-14	6	11	0	7.1	0.46	68	20
Dec-14	6	15	0	6.2	0.31	62.6	17
Jan-15	8	9	0	5.8	1.14	62.6	17
Feb-15	13	22	0	7.6	10.3	59	15
Mar-15	13	26	0	7.6	10.2	64.4	18
Apr-15	16	14	0	4.8	36.4	66.9	19.4
May-15	11	14	0	5.5	25.3	71.1	21.7
June-15	11	18	0	6.4	0.14	70.2	21.2

Reasonable Potential Calculations using Acute Standards

Calculations	BOD_5 mg/L	TSS mg/L	Oil & Grease mg/L	DO mg/L	Temperature °F
n	102	102	102	102	102
Mean	7.39	16.38	0.0	6.74	66.96
Variance	16.0	60.63	0.0	1.22	32.4
Standard Deviation	4.0	7.79	0.0	1.11	5.69
Maximum Effluent Conc. [1]	37.0	50.0	0.0	0.69	80.6
Coefficient of Variation [2]	0.54	0.48	0.0	0.16	0.08
Multiplying Factor [3]	0.9	0.9	1.0	1.0	1.0
Highest Reasonable Potential Conc. [1, 4]	32.57	44.63	0.0	0.66	78.9
SDSWQ Standard [5]	45	53	1.0	6	65
Reasonable Potential?	NO	NO	NO	**YES**	**YES**
≥ 50% of SDSWQS?	**YES**	**YES**	NO	**YES**	**YES**

Ammonia Reasonable Potential Calculations using Acute Standards and a Mixing Zone

Calculations	Ammonia mg/L
n	102
Mean	2.12
Variance	33.27
Standard Deviation	5.77
Maximum Effluent Concentration	36.4
Effluent Flow Rate (cfs)	3.32
7Q25 Stream Flow (cfs) [6]	921.89
Upstream Concentration of Pollutant [7]	0.05
Maximum Instream Concentration of Pollutant	0.18
Coefficient of Variation [2]	2.73
Multiplying Factor [3]	0.69
Highest Reasonable Potential Concentration [4]	0.12
SDSWQ Standard [5]	1.77
Reasonable Potential?	NO
≥ 50% of SDSWQ Standard?	NO

[1] Minimum effluent concentration and lowest reasonable potential concentration for dissolved oxygen.
[2] The coefficient of variation where n > 10 is calculated as standard deviation/mean. When n < 10, the coefficient of variation is estimated to be 0.6.

[3] The multiplying factor is computed in accordance with EPA's reasonable potential determination, page 6, *Reasonable Potential Implementation Procedure for SWD Permits*, April 2013.
[4] The maximum observed effluent concentration is multiplied by this multiplying factor to determine the highest effluent concentration which can reasonably be expected, based on the observed data, a 99% confidence level, and a 95% probability basis.
[5] BOD_5 value is permitted value. The ammonia standard was calculated using the 80th percentile pH value of the receiving stream (Attachment 6).
[6] The receiving stream flow value is 10% of the 7Q25 value for the receiving stream. This is because a dilution factor of 10% is assumed (Attachment 5).
[7] Upstream concentration of the pollutant is the 80th percentile value of the receiving stream (Attachment 6).

City of Pierre WWTF Metals Monitoring Data [5]

Date	Sb µg/L	As µg/L	Be µg/L	Cd [4] µg/L	Cr [4] µg/L	Cu [4] µg/L	CN µg/L	CN (WAD) µg/L	Pb [4] µg/L	Hg µg/L	Mo µg/L	Ni [4] µg/L	Phenols µg/L	Se µg/L	Ag [4] µg/L	Tl µg/L	Zn [4] µg/L
2002	0.2	2	0.2	0.2	0.2	10	20	10	0.1	0	1	0.2	50	0.5	1	0.1	18
2003	0.2	2	0.2	0.2	0.2	30	10	10	0.1	0	1	0.2	50	2	1	0.1	16
2004	0.2	1	0.2	0.2	0.2	20	10	10	0.1	0	1	0.2	50	0.5	1	0.1	20
2005	0.2	1	0.2	0.2	1.2	2.2	10	10	0.7	0	5.2	6.1	50	12.9	1.9	0.1	42.7
2006	0.4	2	0.2	0.2	0.2	27.7	10	10	0.3	0	7.4	6.3	50	6.5	1.2	0.1	32.9
Mar-07	-	1	0.2	0.2	0.4	48.7	10	10	0.1	0	10.4	6.7	50	3.2	1.2	0.1	43.9
Dec-07	0.2	1	0.2	0.2	0.2	60.8	10	10	3.4	0	5.5	7	50	3.8	1.1	0.1	65.3
2008	0.2	1	0.2	0.2	4	34.6	10	10	0.1	0	3.5	6.6	50	4.4	0.8	0.1	28.1
2009	0.2	1	0.2	0.2	0.2	20	10	10	0.1	0	4.1	7.4	50	5.8	1.2	0.1	20
2010	0.2	1	0.2	0.2	0.3	30	10	10	0.1	0	3.1	5.4	50	3.4	1	0.1	20.7
2011	0.06	20	0.2	0.2	0.5	32.6	10	10	0.2	0	4.1	9.5	50	7.6	1	0.4	23.4
2012	0.2	1	0.2	0.2	0.6	40	10	10	0.1	0	3.7	7.7	50	3.8	1	0.1	21.6
2013	0.2	8	0.2	0.2	0.2	40	10	10	0.1	0	4	10.5	50	6.2	1	0.9	21.5
2014	0.2	9	0.2	-	0.2	50	10	10	0.1	0	3.6	7.7	50	0.5	1	0.1	27.4

Metals Reasonable Potential Calculations using Acute Standards

Calculations	Sb	As	Be	Cd	Cr	Cu	CN	CN (WAD)	Pb	Hg	Mo	Ni	Phenols	Se	Ag	Tl	Zn
n	13	14	14	13	14	14	14	14	14	14	14	14	14	14	14	14	14
Mean	0.22	3.64	0.2	0.2	0.61	31.9	10.71	10.0	0.4	0.0	4.11	5.82	50.0	4.36	1.1	0.18	28.68
Variance	0.0	29.17	0.0	0.0	1.03	250.3	7.14	0.0	0.77	0.0	6.49	11.0	0.0	11.28	0.06	0.05	185.21
Standard Deviation	0.06	5.4	0.0	0.0	1.01	15.82	2.67	0.0	0.88	0.0	2.55	3.32	0.0	3.36	0.25	0.22	13.61
Max. Effluent Conc.	0.4	20	0.2	0.2	4	60.8	20	10	3.4	0.0	10.4	10.5	50.0	12.9	1.9	0.9	65.3
Coefficient of Variation[1]	0.26	1.48	0.0	0.0	1.65	0.5	0.25	0.0	2.2	0.0	0.62	0.57	0.0	0.77	0.23	1.25	0.47
Multiplying Factor [2]	1.2	2.3	1.0	1.0	2.4	1.4	1.2	1.0	2.8	1.0	1.6	1.5	1.0	1.7	1.2	2.1	1.4
Highest Reasonable Potential Conc. [3]	0.49	46.21	0.2	0.2	9.74	87.51	24.2	10.0	9.53	0.0	16.19	15.85	50.0	21.91	2.27	1.91	92.67
SDSWQ Standard [4]	NA	340	NA	4.33	1087	28.25	NA	22.0	150.6	1.4	NA	912.3	NA	NA	12.48	NA	228.6
Reasonable Potential?	NO	NO	NO	NO	NO	**YES**	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
≥ 50% of SDSWQS?	NO	NO	NO	NO	NO	**YES**	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

[1] The coefficient of variation where n>10 is calculated as standard deviation/mean. When n<10, the coefficient of variation is estimated to be 0.6.
[2] The multiplying factor is computed in accordance with EPA's reasonable potential determination, page 6, *Reasonable Potential Implementation Procedure for SWD Permits*, April 2013.
[3] The maximum observed effluent concentration is multiplied by this multiplying factor to determine the highest effluent concentration which can reasonably be expected, based on the observed data, a 99% confidence level, and a 95% probability basis.
[4] Those standards which are based on hardness were computed using a hardness of 220 mg/L, which is the 20th percentile hardness in the Missouri River, upstream of the city of Pierre's WWTF, from 1991 to 2014. Receiving stream monitoring data can be found in Attachment 6. Standards are based on the dissolved portion of metals, while the effluent data is total metals. This is a conservative comparison (See ARSD 74:52:03:16).
[5] Pollutants measured at non-detect levels were assumed to be present at the level of detection, except for mercury, in which zero was assumed.

Attachment 3.3: Chronic Standards

In accordance with South Dakota's *Mixing Zone and Dilution Implementation Procedures,* August 1998, chronic standards are allowed a mixing zone (ARSD Section 74:51:01:26). In order to properly determine if there is reasonable potential for the city of Pierre WWTF effluent to violate the chronic SDSWQS it was necessary to determine the conditions of the receiving stream, as well as properly estimate the effluent flow.

The effluent flow rate used, 3.32 cfs, is the 80th percentile of the daily maximum flow, which was calculated using monitoring data from the city of Pierre WWTF from 2007 to 2015 (Attachment 4). The receiving stream conditions were determined using water quality monitoring (WQM) data and flow data from the United States Geological Survey (USGS). The receiving stream flow rate used is the 7-day average low flow that can be expected to occur once every 25 years (7Q25). This value is used because the receiving stream (Missouri River) is a high-quality fishery. Those receiving streams classified for the beneficial uses of coldwater permanent fish life propagation, coldwater marginal fish life propagation, or warmwater permanent fish life propagation are defined as high-quality fishery waters. A dilution factor of 10% is assumed due to the ratio of the effluent flow rate to the annual 7Q25. Therefore, the receiving stream flow rate value used is 10% of the annual 7Q25 flow for the Missouri River (Attachment 5). Upstream concentrations were calculated using the 80th percentile concentration from water quality modeling (WQM) data (Attachment 6). For those parameters that were below the detection limit for all samples or did not have WQM data available, the detection limit was used as the upstream concentration. The upstream concentration for mercury was assumed to be 0 µg/L.

The SDSWQS for chronic (30-day average) ammonia are based on the presence or absence of early life stages. Early life stages are expected throughout the year. The 7Q25 flow rate used is the critical low flow that is expected to occur once every 25 years (Attachment 5). As stated above, a 10% dilution factor was assumed. In order to calculate the chronic ammonia SDSWQS the receiving stream pH and temperature were used. The 80th percentile pH and temperature values were used from WQM data (Attachment 6).

In order to calculate the chronic SDSWQS for certain metals the receiving stream hardness was needed. This hardness value is the 20th percentile hardness concentration of the receiving stream (Attachment 6).

City of Pierre WWTF Monitoring Data

Date	BOD_5 mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Jan-07	5	0.81	59	15
Feb-07	5	0.08	57.2	14
Mar-07	5	0.07	59	15
Apr-07	5	0.33	60.8	16
May-07	4	0.23	66.2	19
Jun-07	4	0.42	69.8	21
Jul-07	3	1.21	73.4	23
Aug-07	5	0.26	73.4	23
Sep-07	3	0.07	71.6	22
Oct-07	5	0.36	68	20
Nov-07	4	0.14	64.4	18
Dec-07	7	0.73	60.8	16
Jan-08	12	1.81	57.2	14
Feb-08	14	0.08	53.6	12
Mar-08	7	0.31	57.2	14
Apr-08	7	1.18	59	15
May-08	6	3.14	62.6	17

Date	BOD_5 mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Jun-08	8	2.92	66.2	19
Jul-08	7	2.33	69.8	21
Aug-08	4	0.26	71.6	22
Sep-08	4	0.13	69.8	21
Oct-08	4	0.08	66.2	19
Nov-08	5	0.12	64.4	18
Dec-08	5	0.29	59	15
Jan-09	5	0.22	57.2	14
Feb-09	6	0.68	57.2	14
Mar-09	5	0.12	55.4	13
Apr-09	5	0.19	59	15
May-09	4	0.07	62.6	17
Jun-09	4	0.12	66.2	19
Jul-09	4	0.25	69.8	21
Aug-09	3	0.43	69.8	21
Sep-09	6	0.34	68	20
Oct-09	5	0.31	64.4	18
Nov-09	6	0.07	62.6	17
Dec-09	7	0.14	57.2	14
Jan-10	6	0.15	55.4	13
Feb-10	6	0.19	53.6	12
Mar-10	6	0.94	55.4	13
Apr-10	6	0.8	59	15
May-10	30	18.66	62.6	17
Jun-10	10	0.29	68	20
Jul-10	6	2.18	69.8	21
Aug-10	6	0.55	71.6	22
Sep-10	6	0.39	68	20
Oct-10	7	0.61	66.2	19
Nov-10	5	0.13	62.6	17
Dec-10	5	0.36	59	15
Jan-11	6	0.09	55.4	13
Feb-11	6	0.34	55.4	13
Mar-11	6	0.27	55.4	13
Apr-11	5	1.67	59	15
May-11	7	0.51	60.8	16
Jun-11	6	0.16	62.6	17
Jul-11	4	0.29	69.8	21
Aug-11	5	0.09	69.8	21
Sep-11	7	0.55	68	20
Oct-11	7	0.06	66.2	19
Nov-11	6	0.08	62.6	17
Dec-11	6	0.08	59	15
Jan-12	5	0.08	57.2	14
Feb-12	6	0.78	57.2	14
Mar-12	5	0.14	59	15
Apr-12	4	1.68	62.6	17
May-12	6	0.09	66.2	19
Jun-12	5	0.07	69.8	21

Date	BOD_5 mg/L	Ammonia mg/L	Temperature °F	Temperature °C
Jul-12	4	0.11	71.6	22
Aug-12	4	0.1	69.8	21
Sep-12	4	0.06	68	20
Oct-12	5	0.06	66.2	19
Nov-12	7	0.12	62.6	17
Dec-12	5	0.07	59	15
Jan-13	5	0.08	57.2	14
Feb-13	4	0.07	55.4	13
Mar-13	4	0.09	55.4	13
Apr-13	4	0.06	51.8	11
May-13	4	0.09	59	15
Jun-13	4	0.17	60.8	16
Jul-13	5	0.06	64.4	18
Aug-13	4	0.06	64.4	18
Sep-13	5	0.08	69.8	21
Oct-13	6	0.28	66.2	19
Nov-13	6	0.09	62.6	17
Dec-13	6	0.08	57.2	14
Jan-14	5	0.06	57.2	14
Feb-14	5	0.16	55.4	13
Mar-14	6	0.24	55.4	13
Apr-14	12	0.22	59	15
May-14	7	0.12	64.4	18
Jun-14	5	0.05	66.2	19
Jul-14	4	0.15	69.8	21
Aug-14	4	0.11	69.8	21
Sep-14	3	0.08	68	20
Oct-14	5	0.21	66.2	19
Nov-14	6	0.17	60.8	16
Dec-14	5	0.16	59	15
Jan-15	6	0.21	59	15
Feb-15	12	3.01	55.4	13
Mar-15	9	3.15	60.8	16
Apr-15	12	27.04	62.6	17
May-15	8	7.86	64.4	18
June-15	8	0.13	67.6	19.8

Reasonable Potential Calculations using Chronic Standards

Calculations	**BOD_5 mg/L**	**Ammonia mg/L**	**Temperature °F**
n	102	102	102
Mean	5.95	0.96	62.74
Variance	9.75	11.04	29.78
Standard Deviation	3.12	3.32	5.46
Maximum Effluent Concentration	30	27.04	73.4
Effluent Flow Rate [1]	3.32	3.32	3.32
7Q5 or 7Q25 Stream Flow [2]	921.89	921.89	921.89
Upstream Concentration of Pollutant [3]	2	0.05	64.18
Maximum Instream Concentration of Pollutant	2.1	0.15	64.21
Coefficient of Variation [4]	0.52	3.48	0.09
Multiplying factor [5]	0.9	0.7	1.0
Highest Reasonable Potential Concentration [6]	1.86	0.1	62.83
SDSWQ Standard [7]	30	0.67	65
Reasonable Potential?	NO	NO	NO
≥ 50% of SDSWQ Standard?	NO	NO	**YES**

[1] The effluent flow rate used is the 80th percentile effluent flow rate for the city of Pierre's WWTF. This value was calculated using monitoring data from 2007-2014. Calculations can be found in Attachment 4.
[2] Less than 10% dilution is expected. Receiving stream flow value used is 10% of the 7Q25 stream flow value. The 7Q25 calculations can be found in Attachment 5.
[3] Upstream concentrations of the pollutants were calculated using WQM data for the receiving stream from 1991-2014. Receiving stream monitoring data can be found in Attachment 6.
[4] The coefficient of variation where n>10 is calculated as standard deviation/mean. When n<10, the coefficient of variation is estimated to be 0.6.
[5] The multiplying factor is computed in accordance with EPA's reasonable potential determination, page 6, *Reasonable Potential Procedure for SWD Permits*, April 2013.
[6] The maximum observed effluent concentration is multiplied by this multiplying factor to determine the highest effluent concentration which can reasonably be expected, based on the observed data, a 99% confidence level, and a 95% probability basis.
[7] BOD value is the permitted limit. Ammonia limit calculated using 80th percentile pH value and 80th percentile temperature (°C) value from WQM data for the receiving stream (1991-2014). Receiving stream monitoring data can be found in Attachment 6.

City of Pierre WWTF Metals Data [8]

Date	Sb µg/L	As µg/L	Be µg/L	Cd [7] µg/L	Cr [7] µg/L	Cu [7] µg/L	CN µg/L	CN (WAD) µg/L	Pb [7] µg/L	Hg µg/L	Mo µg/L	Ni [7] µg/L	Phenols µg/L	Se µg/L	Ag µg/L	Tl µg/L	Zn [7] µg/L
2002	0.2	2	0.2	0.2	0.2	10	20	10	0.1	0	1	0.2	50	0.5	1	0.1	18
2003	0.2	2	0.2	0.2	0.2	30	10	10	0.1	0	1	0.2	50	2	1	0.1	16
2004	0.2	1	0.2	0.2	0.2	20	10	10	0.1	0	1	0.2	50	0.5	1	0.1	20
2005	0.2	1	0.2	0.2	1.2	2.2	10	10	0.7	0	5.2	6.1	50	12.9	1.9	0.1	42.7
2006	0.4	2	0.2	0.2	0.2	27.7	10	10	0.3	0	7.4	6.3	50	6.5	1.2	0.1	32.9
March 2007	-	1	0.2	0.2	0.4	48.7	10	10	0.1	0	10.4	6.7	50	3.2	1.2	0.1	43.9
December 2007	0.2	1	0.2	0.2	0.2	60.8	10	10	3.4	0	5.5	7	50	3.8	1.1	0.1	65.3
2008	0.2	1	0.2	0.2	4	34.6	10	10	0.1	0	3.5	6.6	50	4.4	0.8	0.1	28.1
2009	0.2	1	0.2	0.2	0.2	20	10	10	0.1	0	4.1	7.4	50	5.8	1.2	0.1	20
2010	0.2	1	0.2	0.2	0.3	30	10	10	0.1	0	3.1	5.4	50	3.4	1	0.1	20.7
2011	0.06	20	0.2	0.2	0.5	32.6	10	10	0.2	0	4.1	9.5	50	7.6	1	0.4	23.4
2012	0.2	1	0.2	0.2	0.6	40	10	10	0.1	0	3.7	7.7	50	3.8	1	0.1	21.6
2013	0.2	8	0.2	0.2	0.2	40	10	10	0.1	0	4	10.5	50	6.2	1	0.9	21.5
2014	0.2	9	0.2	-	0.2	50	10	10	0.1	0	3.6	7.7	50	0.5	1	0.1	27.4

Metals Reasonable Potential Calculations using Chronic Standards

Calculations	Sb	As	Be	Cd	Cr	Cu	CN	CN (WAD)	Pb	Hg	Mo	Ni	Phenols	Se	Ag	Tl	Zn
n	13	14	14	13	14	14	14	14	14	14	14	14	14	14	14	14	14
Mean	0.2	3.64	0.2	0.2	0.61	31.9	10.71	10.0	0.4	0.0	4.11	5.82	50.0	4.36	1.1	0.18	28.68
Variance	0.0	29.17	0.0	0.0	1.03	250.3	7.14	0.0	0.77	0.0	6.49	11.0	0.0	11.28	0.06	0.05	185.21
Standard Deviation	0.07	5.4	0.0	0.0	1.01	15.82	2.67	0.0	0.88	0.0	2.55	3.32	0.0	3.36	0.25	0.22	13.61
Max. Effluent Conc.	0.4	20.0	0.2	0.2	4.0	60.8	20.0	10.0	3.4	0.0	10.4	10.5	50.0	12.9	1.9	0.9	65.3
Effluent Flow Rate [1]	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
7Q5 or 7Q25 Stream Flow [2]	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9	921.9
Upstream Conc. of Pollutant [3]	0.0	1.0	0.0	0.2	0.2	20.0	10.0	10.0	0.1	0.0	1.0	0.2	0.0	0.5	0.0	0.0	3.0
Max. Instream Conc. of Pollutant	0.001	1.068	0.001	0.2	0.214	20.146	10.036	10.0	0.112	0.0	1.034	0.237	0.179	0.544	0.007	0.003	3.224
Coefficient of Variation [4]	0.34	1.48	0.0	0.0	1.65	0.5	0.25	0.0	2.2	0.0	0.62	0.57	0.0	0.77	0.23	1.25	0.47
Multiplying factor [5]	1.3	2.3	1.0	1.0	2.4	1.4	1.2	1.0	2.8	1.0	1.6	1.5	1.0	1.7	1.2	2.1	1.4
Highest Reasonable Potential Conc. [6]	0.0	2.47	0.0	0.2	0.52	29.0	12.15	10.0	0.31	0.0	1.61	0.36	0.18	0.92	0.01	0.01	4.57
SDSWQ Standard [7]	NA	150.0	NA	0.43	141.4	17.57	NA	5.2	5.87	0.05	NA	101.3	NA	4.6	NA	0.24	230.4
Reasonable Potential?	NO	NO	NO	NO	NO	**YES**	NO	**YES**	NO	NO	NO	NO	NO	NO	NO	NO	NO
≥ 50% of SDSWQS?	NO	NO	NO	NO	NO	**YES**	NO	**YES**	NO	NO	NO	NO	NO	NO	NO	NO	NO

[1] The effluent flow rate used is the 80th percentile effluent flow rate for the city of Pierre's WWTF. This value was calculated using monitoring data from 2007-2014, and calculations can be found in Attachment 4.
[2] Less than 10% dilution is expected. Receiving stream flow value used is 10% of the 7Q25 stream flow value. The 7Q25 calculations can be found in Attachment 5.
[3] Upstream concentrations of the pollutants were calculated using WQM data for the receiving stream from 1991-2014. Receiving stream monitoring data can be found in Attachment 6.
[4] The coefficient of variation where n>10 is calculated as standard deviation/mean. When n<10, the coefficient of variation is estimated to be 0.6.
[5] The multiplying factor is computed in accordance with EPA's reasonable potential determination, page 6, *Reasonable Potential Implementation Procedure for SWD Permits*, April 2013.
[6] The maximum observed effluent concentration is multiplied by this multiplying factor to determine the highest effluent concentration which can reasonably be expected, based on the observed data, a 99% confidence level, and a 95% probability basis.
[7] Those standards which are based on hardness were computed using a hardness of 220 mg/L, which is the 20th percentile hardness in the Missouri River, upstream of the city of Pierre's WWTF, from 1991 to 2014. Receiving stream monitoring data can be found in Attachment 6. Standards are based on the dissolved portion of metals, while the effluent data is total metals. This is a conservative comparison (See ARSD 74:52:03:16).
[8] Pollutants measured at non-detect levels were assumed to be present at the level of detection, except for mercury, in which zero was assumed.

ATTACHMENT 4

Effluent Flow Data

City of Pierre WWTF Monitoring Data (2007-2015)

EFFLUENT FLOW DATA (MGD)

City of Pierre WWTF Monitoring Data, 2007-2015

Date	30-Day Avg.	Daily Max.	Date	30-Day Avg.	Daily Max.	Date	30-Day Avg.	Daily Max.
01/31/2007	1.52	2.13	11/30/2009	1.48	1.74	09/30/2012	1.4	1.81
02/28/2007	1.54	2.02	12/31/2009	1.44	1.74	10/31/2012	1.37	1.94
03/31/2007	1.53	2.01	01/31/2010	1.56	2.1	11/30/2012	1.36	1.65
04/30/2007	1.52	1.72	02/28/2010	1.45	2.53	12/31/2012	1.28	1.54
05/31/2007	1.55	1.84	03/31/2010	1.73	2.59	01/31/2013	1.37	1.84
06/30/2007	1.65	1.98	04/30/2010	1.57	1.92	02/28/2013	1.42	1.86
07/31/2007	1.53	1.75	05/31/2010	1.17	2.09	03/31/2013	1.41	1.88
08/31/2007	1.51	2.08	06/30/2010	1.72	2.12	04/30/2013	1.52	2.03
09/30/2007	1.42	1.69	07/31/2010	1.67	2.21	05/31/2013	1.6	2.17
10/31/2007	1.51	1.76	08/31/2010	1.17	1.96	06/30/2013	1.6	2.03
11/30/2007	1.59	2.5	09/30/2010	1.62	1.96	07/31/2013	1.62	2.17
12/31/2007	2.03	2.03	10/31/2010	1.57	1.88	08/31/2013	1.65	2.01
01/31/2008	1.65	2.53	11/30/2010	1.55	1.93	09/30/2013	1.58	2.02
02/29/2008	1.46	1.93	12/31/2010	1.5	1.69	10/31/2013	1.62	2.27
03/31/2008	1.41	1.92	01/31/2011	1.51	1.72	11/30/2013	1.39	1.89
04/30/2008	1.42	1.72	02/28/2011	1.52	1.81	12/31/2013	1.25	1.7
05/31/2008	1.5	1.91	03/31/2011	1.59	1.91	01/31/2014	1.35	1.69
06/30/2008	1.65	2.32	04/30/2011	1.62	1.9	02/28/2014	1.29	1.73
07/31/2008	1.59	1.93	05/31/2011	1.86	2.47	03/31/2014	1.42	1.88
08/31/2008	1.5	1.85	06/30/2011	3.71	5.16	04/30/2014	1.69	2.5
09/30/2008	1.44	1.78	07/31/2011	3.94	4.4	05/31/2014	1.83	2.29
10/31/2008	1.45	1.78	08/31/2011	3.04	3.83	06/30/2014	1.84	2.51
11/30/2008	1.45	1.72	09/30/2011	2.0	2.35	07/31/2014	1.63	2.13
12/31/2008	1.51	1.98	10/31/2011	1.68	2.23	08/31/2014	1.39	1.76
01/31/2009	1.56	2.8	11/30/2011	1.57	1.84	09/30/2014	1.38	1.76
02/28/2009	1.47	1.72	12/31/2011	1.48	1.84	10/31/2014	1.32	1.77
03/31/2009	1.45	1.76	01/31/2012	1.52	2.22	11/30/2014	1.25	1.73
04/30/2009	1.49	1.69	02/29/2012	1.49	1.75	12/31/2014	1.15	1.56
05/31/2009	1.46	1.85	03/31/2012	1.53	1.81	01/31/2015	1.21	1.8
06/30/2009	1.51	1.72	04/30/2012	1.59	1.94	02/28/2015	1.22	1.68
07/31/2009	1.53	1.92	05/31/2012	1.55	1.99	03/31/2015	1.43	1.69
08/31/2009	1.55	1.89	06/30/2012	1.59	1.89	04/30/2015	1.24	1.5
09/30/2009	1.51	1.77	07/31/2012	1.57	1.88	05/31/2015	1.33	1.79
10/31/2009	1.55	1.87	08/31/2012	1.47	1.81	06/30/2015	1.6	2.1

Calculations	30-Day Avg.	Daily Max.
Average (MGD)	1.57	2.02
Average (cfs)	2.43	3.12
50th Percentile (MGD)	1.52	1.89
50th Percentile (cfs)	2.35	2.92
80th Percentile (MGD)	1.62	2.15
80th Percentile (cfs)	2.51	**3.32**

***Bold values were used for reasonable potential calculations.**

ATTACHMENT 5

Receiving Stream Flow Data

RECEIVING STREAMFLOW DATA
USGS 06342500 Gaging Station

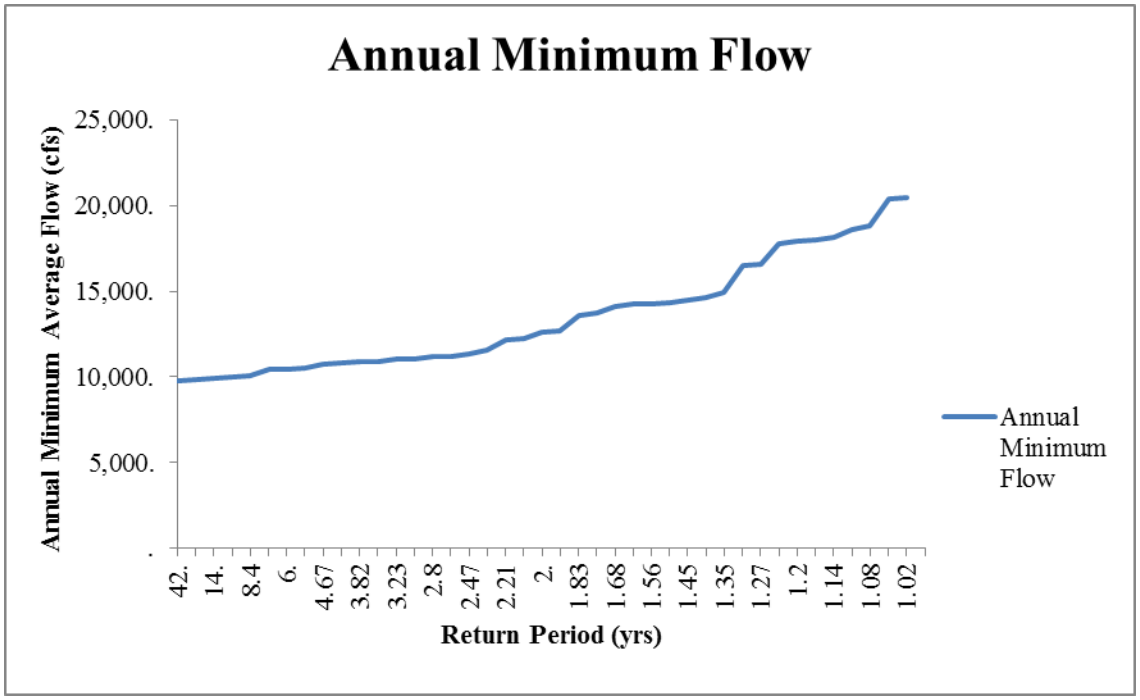
The data to develop the annual and seasonal 7Q25 low flows was obtained from the USGS gauging station USGS 06342500 (Latitude 46.814167°, Longitude -100.821389°). The period of the data is from January 1, 1974 through December 31, 2014. This data can be obtained at http://waterdata.usgs.gov/sd/nwis/sw.

Annual 7Q25

7Q25 (cfs)	Standard Deviation	Skew	zfactor	kfactor
9218.9531	0.22489	0.492791	-1.753276	-1.572631

Year	Rank	Annual Minimum Flow (cfs)	Log Flow
2001	1	9,762.86	9.19
2009	2	9,842.86	9.19
2003	3	9,921.43	9.2
1993	4	9,971.43	9.21
2010	5	10,032.86	9.21
2002	6	10,414.29	9.25
1988	7	10,442.86	9.25
1991	8	10,538.57	9.26
1990	9	10,728.57	9.28
1992	10	10,785.71	9.29
1987	11	10,857.14	9.29
1986	12	10,914.29	9.3
2008	13	11,000.00	9.31
2007	14	11,028.57	9.31
1989	15	11,171.43	9.32
2004	16	11,214.29	9.32
1995	17	11,300.00	9.33
1994	18	11,585.71	9.36
2005	19	12,142.86	9.4
2006	20	12,200.00	9.41
1997	21	12,600.00	9.44
1977	22	12,657.14	9.45
2013	23	13,557.14	9.51
1985	24	13,728.57	9.53
1998	25	14,114.29	9.55
1981	26	14,257.14	9.57
1978	27	14,271.43	9.57
2000	28	14,314.29	9.57
1983	29	14,485.71	9.58
1984	30	14,600.00	9.59
1979	31	14,942.86	9.61
2014	32	16,528.57	9.71
2012	33	16,557.14	9.71

Year	Rank	Annual Minimum Flow (cfs)	Log Flow
1999	34	17,800.00	9.79
1980	35	17,928.57	9.79
2011	36	17,971.43	9.8
1974	37	18,142.86	9.81
1982	38	18,571.43	9.83
1996	39	18,800.00	9.84
1975	40	20,357.14	9.92
1976	41	20,500.00	9.93



***Bold value was used for reasonable potential calculations.**

ATTACHMENT 6

Receiving Stream Water Quality Monitoring (WQM) Data

WQM #71 (1991-2014)

RECEIVING STREAM pH AND TEMPERATURE DATA

WQM #71 – Missouri River, upstream of the city of Pierre WWTF, 1991-2014

Date	pH (su)	Temperature (°C)	Date	pH (su)	Temperature (°C)
04/22/1991	8.28	13.3	04/24/2006	8.2	8
01/21/1999	8.5	3.6	07/20/2006	8.4	12
04/21/1999	8.5	6.8	10/23/2006	8.4	20
07/21/1999	7.94	20.5	01/17/2007	8.2	13
10/27/1999	8.45	16	04/18/2007	8.5	4
04/18/2000	8.67	6.1	07/19/2007	8.4	5
07/20/2000	8.59	7.4	10/17/2007	8.2	24
10/11/2000	8.41	19.8	01/22/2008	8.3	16
01/09/2001	8.9	17	04/10/2008	8.5	3
07/10/2001	8.33	2.7	07/24/2008	8	5
10/23/2001	8.6	17.1	02/18/2009	8.43	20
01/08/2002	8.6	15.2	05/14/2009	8.48	1
02/13/2002	8.26	5.2	08/20/2009	8.3	18
04/02/2002	8.5	2.5	05/17/2010	8.12	1
07/16/2002	8.46	3.5	08/05/2010	8.1	6.28
10/16/2002	8.62	20.2	11/03/2010	8.3	19
01/08/2003	8.61	14	02/03/2011	8.8	13
04/16/2003	8.68	5.7	05/03/2011	6.8	1
07/16/2003	8.55	4.9	08/04/2011	8.2	4
10/15/2003	8.38	22	11/15/2011	8.4	12
01/14/2004	8.52	15.6	02/02/2012	8	3
04/14/2004	8.65	5.2	05/03/2012	8.3	7
07/14/2004	8.35	7	08/01/2012	8.2	22
10/13/2004	8.6	20.1	11/01/2012	8.2	12
10/13/2004	8.56	16	02/14/2013	6.8	1
01/12/2005	8.8	16.3	05/01/2013	8.3	4
01/12/2005	8.75	4	08/01/2013	7.5	17
04/13/2005	8.6	3.9	11/07/2013	8.2	12
07/13/2005	7.9	6	02/14/2014	8.1	1
10/18/2005	8	22	05/01/2014	8.2	5
01/31/2006	8.3	17.8	08/14/2014	8.1	15

pH (SU)		Temperature (°C)		Temperature (°F)	
Average	8.32	Average	10.67	Average	51.21
50th Percentile	8.39	50th Percentile	10	50th Percentile	50
80th Percentile	**8.6**	**80th Percentile**	**17.88**	**80th Percentile**	**64.18**

RECEIVING STREAM HARDNESS CONCENTRATION

WQM #71 – Missouri River, upstream of the city of Pierre WWTF, 1991-2014

Date	Hardness (mg/L)	Date	Hardness (mg/L)
04/22/1991	930	10/17/2007	220
10/15/2003	250	01/22/2008	220
01/14/2004	330	04/10/2008	290
04/14/2004	260	02/18/2009	290
07/14/2004	221	05/14/2009	300
10/13/2004	150	11/04/2009	340
10/13/2004	150	02/24/2010	200
01/12/2005	290	11/03/2010	260
01/12/2005	290	02/03/2011	240
04/13/2005	220	11/15/2011	260
07/13/2005	218	02/02/2012	240
01/31/2006	220	11/01/2012	280
04/24/2006	260	02/14/2013	340
10/23/2006	280	11/07/2013	300
01/17/2007	310	02/14/2014	320
04/18/2007	220		

Hardness, carbonate (mg/L)	
Average	280.61
20th Percentile	**220**
50th Percentile	260

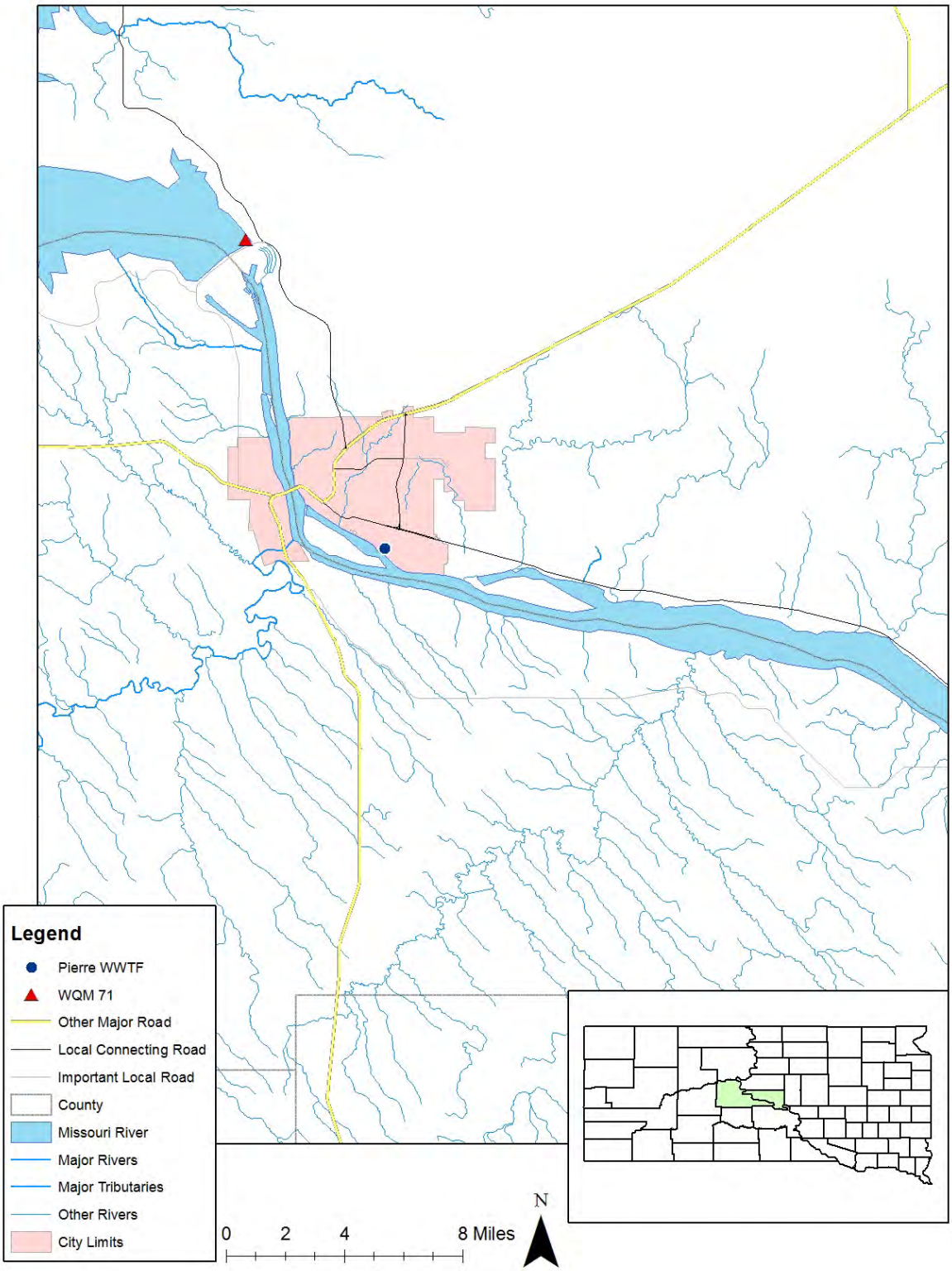
RECEIVING STREAM AMMONIA CONCENTRATIONS (mg/L)

WQM #71 – Missouri River, upstream of the city of Pierre WWTF, 2004-2014

Date	Value Reported [1]	Value Used [2]	Date	Value Reported [1]	Value Used [2]
10/13/2004	BD	0.05	05/17/2010	BD	0.05
01/12/2005	BD	0.05	08/05/2010	BD	0.05
04/13/2005	BD	0.05	11/03/2010	BD	0.05
07/13/2005	BD	0.05	02/03/2011	BD	0.05
01/31/2006	BD	0.05	05/03/2011	BD	0.05
04/24/2006	BD	0.05	08/04/2011	BD	0.05
07/20/2006	BD	0.05	11/15/2011	BD	0.05
01/17/2007	BD	0.05	02/02/2012	BD	0.05
04/18/2007	BD	0.05	05/03/2012	BD	0.05
07/19/2007	BD	0.05	08/01/2012	BD	0.05
10/17/2007	BD	0.05	11/01/2012	BD	0.05
01/22/2008	BD	0.05	02/14/2013	BD	0.05
04/10/2008	BD	0.05	05/01/2013	BD	0.05
07/24/2008	BD	0.05	08/01/2013	BD	0.05
02/18/2009	BD	0.05	11/07/2013	BD	0.05
05/14/2009	BD	0.05	02/14/2014	BD	0.05
08/20/2009	BD	0.05	05/01/2014	BD	0.05
11/04/2009	BD	0.05	08/14/2014	BD	0.05
02/24/2010	BD	0.05			

Ammonia-nitrogen (mg/L)	
Average	0.05
50th Percentile	0.05
80th Percentile	**0.05**

***Bold values were used for reasonable potential analysis calculations.**


Legend
Pierre WWTF
WQM 71
Other Major Road
Local Connecting Road
Important Local Road
County
Missouri River
Major Rivers
Major Tributaries
Other Rivers
City Limits
0
2
4
8 Miles
N

Attachment 7
Approved Land Application Locations

Approved Land Application Locations

The city of Pierre has requested the addition of a land application outfall. The land application sites include the following city-owned properties: Hillsview Golf Club (Latitude 44.350207°, Longitude -100.297772°, Satellite Imagery Map Estimation), PILC Soccer Complex (Latitude 44.354717°, Longitude -100.312625°, Satellite Imagery Map Estimation), Oahe Softball Complex (Latitude 44.353015°, Longitude -100.323630°, Satellite Imagery Map Estimation), and Riverside Cemetery (Latitude 44.360336°, Longitude -100.307020°, Satellite Imagery Map Estimation). The image below shows the location of each land application site, as well as the proximity to the city of Pierre WWTF.

APPENDIX B

SDDENR BIOSOLIDS MANAGEMENT PERMIT AND STATEMENT OF BASIS

Permit No: SDL020176

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SD 57501-3182

BIOSOLIDS MANAGEMENT PERMIT

AUTHORIZING DISPOSAL OF BIOSOLIDS

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the City of Pierre

is authorized under this permit to landfill biosolids from its wastewater treatment works on the southeast side of the city in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44.350661º, Longitude -100.323538º) in accordance with specific limits, monitoring requirements, management practices, and other conditions set forth herein. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modifications; or for denial of a permit renewal application.

This permit shall become effective **April 1, 2013.**

This permit and the authorization to discharge shall expire at midnight, **March 31, 2018.**

Signed this 25th day of March, 2013.

_____
Authorizing Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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DEFINITIONS

30-day (and monthly) average means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting.

ARSD means the Administrative Rules of South Dakota**.**

Agronomic Rate is the whole biosolids application rate (dry weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation growth on the land; and (2) minimize the amount of nitrogen in the biosolids that passes below the root zone of the crop or vegetation grown on the land to the ground water.

The **Approval Authority** is the Secretary of the South Dakota Department of Environment and Natural Resources, or designated representative.

Animals for the purposes of this permit are domestic livestock.

Annual Pollutant Loading Rate is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

Annual Whole Biosolids Application Rate is the amount of biosolids (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.

Application Site or Land Application Site means all contiguous areas of a users' property intended for biosolids application.

Batch is when a pile of biosolids is created, allowed to sit for a specific period of time and then removed from the site. A batch of biosolids could be a compost pile or long-term treatment piles.

Biosolids means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

Bulk Biosolids is biosolids that is not sold or given away in a bag or other container for application to the land.

Ceiling Concentration is the maximum concentration limits for 9 heavy metal pollutants in biosolids; specifically arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc. If a limit for any one of the pollutants is exceeded, the biosolids cannot be applied to the land.

CFU/gram is the number of colony forming fecal coliform units per gram of biosolids on a dry weight basis.

Composite Biosolids Sample is a sample taken either in a wastewater treatment process, dewatering facility, or application device consisting of a series of individual grab samples. For liquid biosolids, a minimum of three grab samples of 500 milliliters taken during the first one-third, second one-third and final one-third of a pumping cycle and combined in equal volumetric amounts. For semi-dewatered, dewatered or dried biosolids, a composite sample consisting of a minimum of three grab samples of 0.5 pounds taken over a period of 24 hours not less than two hours apart or another representative sample as defined or approved by the permitting authority.

Cumulative Pollutant Loading Rate is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

CWA means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92-500, as amended by Pub. L 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4.

Daily Maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

Dry Weight Basis means 100 percent solids (i.e. zero percent moisture).

A **geometric mean**, unlike an arithmetic mean, tends to dampen the effect of very high or low values, which might bias the mean if a straight average (arithmetic mean) were calculated. This is helpful when analyzing bacteria concentrations, because levels may vary anywhere from 10 to 10,000 fold over a given period.

A **Grab Sample**, for monitoring requirements, is a single "dip and take" sample collected at a representative point in wastewater treatment or biosolids land application processes.

Grit and Screenings are sand, gravel, cinders, or other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to 40 CFR 258.

Ha means hectare. One hectare equals 2.47 acres.

High Potential for Public Contact Site includes but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

IU means industrial user.

An **Instantaneous Measurement**, for monitoring requirements, is a single reading, observation, or measurement either taken instantaneously at the facility or within 15 minutes of the sample.

Kg/Ha is kilogram of pollutants per hectare of land.

Kg/Ha/Yr is the kilograms of pollutants applied to a hectare of land in a single calendar year.

Land Application is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so the biosolids can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of biosolids).

Low Potential for Public Contact Site includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are generally not accessible to or used by the public.

MPN/gram is the most probable number of fecal coliform bacteria per gram of biosolids on a dry weight basis.

Monthly Average is the arithmetic mean of all measurements taken during the month.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

Pathogen means an organism that is capable of producing an infection or disease in a susceptible host.

PFRP means Processes to Further Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of composting, heat drying, heat treatment, thermophilic aerobic digestion, irradiation or pasteurization.

Pollutant for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly through the food-chain, could, on the basis of information available, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organism or offspring of the organisms.

Pollutant Limit is a numerical value that describes the maximum amount of a pollutant allowed per unit amount of biosolids (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of microorganisms per unit amount of biosolids (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of a pollutant allowed in plant tissue (e.g., parts per million).

PSRP means Processes to Significantly Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of aerobic digestion, air drying, anaerobic digestion, composting, or lime stabilization.

A **Publicly-owned Treatment Works** or **POTW** is any device or system used in the treatment, including recycling and reclamation of municipal sewage or industrial waste of a liquid nature, which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off over the land surface.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or other authorized representative.

Severe Property Damage is substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources, which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sludge is any solid, semi-solid, or liquid residue generated during the treatment of municipal wastewater or domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in the Treatment Works. Sludge includes but is not limited to domestic septage, scum or solids removed during primary, secondary, or advanced wastewater treatment, portable toilet pumpings, and sludge products. Sludge does not include grit, screenings, or ash generated during the incineration of biosolids.

Similar Container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Specific Oxygen Uptake Rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the biosolids.

Total Solids are the materials in the biosolids that remain as residue if the biosolids is dried at 103 to 105 degrees Celsius.

TSS means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

Unstabilized Solids are organic materials in biosolids that have not been treated in either an aerobic or anaerobic treatment process.

Vector Attraction is the characteristic of biosolids that attracts rodents, flies, mosquitoes or other organism capable of transporting infectious agents.

Volatile Solids is the amount of the total solids in biosolids lost when the biosolids is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

1.0 BIOSOLIDS LIMITS AND MONITORING REQUIREMENTS

1.1. Description of Biosolids Generating Facilities

The authorization to land apply treated biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee specifically designated below.

Outfall Number	Description of Biosolids Source(s)
201	Biosolids produced at the City of Pierre's wastewater treatment facility that are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered, and then disposed of at the city's municipal landfill.

1.2. Change in Treatment System or Use/Disposal Practices

The permittee must inform the SDDENR in writing at least 180 days prior to any significant change in the biosolids generation and handling processes at the plant and any major change in use/disposal practices. This includes, but is not limited to, the addition or removal of biosolids treatment units (e.g., digesters, drying beds, etc.) and/or any other change which would require a major modification of the permit (e.g., changing from landfill disposal to land application).

1.3. Biosolids Limits – *Outfall 201*

Effective immediately and lasting through the life of this permit, all biosolids generated by this facility to be disposed of at an appropriate permitted landfill shall meet the requirements listed.

1.3.1 Chemical

Biosolids disposed in an approved landfill shall pass the paint filter and Toxicity Characterization Leaching Procedure (TCLP) tests. In addition, the permittee shall comply with any additional testing requirements imposed by the landfill.

1.3.2 Vector Attraction Reduction

The permittee is required to reduce the potential for attracting vectors such as mosquitoes. The biosolids shall meet the following alternative for vector attraction reduction (VAR):

- Biosolids disposed at a landfill shall be covered with soil or other material at the end of each operating day.

There are additional approved alternatives for reducing vector attraction available in 40 CFR 503.33 (a.b.r. in ARSD Chapter 74:52:09). If the permittee intends to use one of these alternatives, SDDENR must be informed in writing at least 30 days prior to its use. ***This change may be made without additional public notice.***

1.4. Self-Monitoring Requirements

1.4.1 *Biosolids Monitoring*

Effective immediately and lasting throughout the life of the permit, all biosolids disposed of at an appropriate permitted landfill shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the nature of the biosolids.

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test[1]	Annually or prior to disposal at landfill	Pass or Fail	Grab
Toxicity Characterization Leaching Procedure (TCLP)[1]	Once every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

1.5. Best Management Practices

Therefore, the facility shall operate in accordance with the following requirements:

1. The permittee has an approved biosolids management plan. If the permittee would like to amend its Biosolids Management Plan, it must notify SDDENR in writing at least 30 days prior to the change for review and approval.
2. Landfill disposal shall be conducted in a manner that will not contaminate the groundwater underlying the site.
3. Landfill disposal shall be conducted in a manner that will not cause or contribute to a violation of any receiving water quality standard from discharges of surface runoff.
4. Landfill disposal shall not cause or contribute to the harm of threatened or endangered species or result in the destruction or modification of critical habitat of threatened or endangered species.
5. Landfill disposal shall not restrict the flow of a 100-year flood.
6. Public access to the site shall be restricted so the public is not exposed to potential health and safety hazards.

1.6. Recordkeeping Requirements

The permittee is to retain the following records for at least five years. These recordkeeping requirements are dependent upon the quality of biosolids produced by the permittee. At a minimum, the following records shall be kept:

1. A copy of the analytical results for the Paint Filter Tests, percent solids, and the TCLP.
2. A description of how the vector attraction reduction requirements were met;
3. A description of how the best management practices were met;

4. Yearly certification statements for landfilled biosolids stating that the vector attraction reduction and management practices were met. The certification statement shall be as follows:

   "I certify under penalty of law the vector attraction reduction method in Part 1.3.2 of the permit and best management practices in Part 1.5 of the permit have been met and that the biosolids were disposed at a facility in compliance with 40 CFR 258. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

1.7. Reporting Requirements

The permittee is required to monitor, collect, and provide the following information for each reporting year:

1. The total amount of biosolids, in dry metric tons, that is generated by the facility during the reporting year;
2. A summary of any biosolids received from other facilities:
   a) Summary of total amount of biosolids received, in dry metric tons;
   b) Summary of amount of biosolids received from each individual facility, in dry metric tons;
   c) Name of each facility sending biosolids; and
   d) Location of each facility.
3. A summary of any biosolids sent to other facilities/operations:
   a) Summary of total amount of biosolids sent to other facilities, in dry metric tons;
   b) Summary of amount of biosolids sent to each individual facility, in dry metric tons;
   c) Name of each facility receiving biosolids; and
   d) Location of each facility.
4. The amount of biosolids, in dry metric tons, placed in storage during the reporting year and the total amount of biosolids already in storage and how long it has been stored.
5. The amount of biosolids disposed of at the landfill during the reporting year.

The permittee shall develop an annual biosolids report. This report shall include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, information on best management practices, and certifications. This report shall be submitted to SDDENR no later than **February 19th of each year**. Each report is for the previous calendar year.

1.8. Special Conditions on Biosolids Storage

Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from SDDENR. Storage of biosolids for more than two years will only be allowed if it is determined that significant treatment is occurring. During the storage of biosolids, controls shall be put into place to prevent runoff of the biosolids from the storage site.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1. Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

2.2. Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under 40 CFR Part 503 (a.b.r in ARSD Chapter 74:52:09), unless other test procedures have been specified in this permit.

2.3. Reporting of Monitoring Results

The permittee is required to report annually as required in 40 CFR 503.18 (a.b.r in ARSD Chapter 74:52:09). This report is to include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, the required information on pathogen requirements, vector attraction reduction requirements, information on management practices, land application sites, site restrictions, and the required signed certification statements. This report shall be submitted no later than **February 19th of each year**. Each report is for the previous calendar year. If no biosolids were applied during the reporting period, "no biosolids were applied" shall be reported. Biosolids monitoring results may be reported in the testing laboratory's normal format. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary at the following addresses:

original to: South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
PMB 2020
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501-3182

copy to: Regional Biosolids Program
Wastewater Unit (8P-W-WW)
U.S. EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

2.4. Signatory Requirements

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a) The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

2.5. Additional Monitoring by the Permittee

If the permittee monitors, at the designated points, any pollutants more frequently than required by this permit, using test procedures approved under 40 CFR 503 (a.b.r. in ARSD, Section 74:52:09) or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit and shall be submitted in the Annual Biosolids report. Such increased frequency shall also be indicated.

2.6. Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses were initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7. Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9. Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of biosolids produced, or could result in noncompliance with permit conditions.

2.10. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all

reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Annual Biosolids Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. The following instances of noncompliance shall be reported by telephone to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances: violation of any of the Table 1 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that has been land applied.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a) A description of the noncompliance and its cause;
   b) The period of noncompliance, including exact dates and times;
   c) The estimated time noncompliance is expected to continue if it has not been corrected; and,
   d) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Section 2.3 of this permit.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12. Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11 paragraph 3.

2.13. Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the Secretary advance notice of any activity which may result in permit noncompliance.

3.2. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any land application of biosolids in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance. This may include but is not limited to, all treatment, transportation, and application equipment which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5. Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit including but not limited to biosolids treatment, collection, storage, facilities or area, transport vehicles and containers, and land application sites; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location including but not limited to digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites, or biosolids, soils, or any vegetation on land application sites.
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, so that the Secretary or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

3.6. Removed Substances

Collected screenings, grit, solids, biosolids, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to land apply biosolids under this permit.

3.8. Availability of Reports

Except for data determined to be confidential under ARSD, Section 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and biosolids data shall not be considered confidential.

3.9. Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, and exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation, or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state, or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state, or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.11. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedules, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit and/or it has been determined that the permittee's biosolids use and/or land application practices do not comply with existing applicable state or federal regulations.

3.12. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1. Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Nothing in this permit shall be construed to relieve the permittee of the civil of criminal penalties for noncompliance.

4.2. Penalties for Tampering

Any person who falsifies, tampers with, or knowingly render inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3. Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the federal Clean Water Act.

STATEMENT OF BASIS

Applicant:	City of Pierre
Permit Number:	SDL020176
Contact Person:	Laurie Gill, Mayor Leon Schochenmaier, City Administrator Greg Mohr, Wastewater Superintendent PO Box 1253 Pierre, SD 57501-1253
Phone:	(605) 773-7407 (city hall) (605) 773-7449 (wastewater facility)
Permit Type:	Biosolids Management Permit – Renewal

This document is intended to explain the basis for the requirements contained in the proposed Biosolids Management Permit. This document provides guidance to aid in complying with the permit regulations. This guidance is not a substitute for reading the proposed permit and understanding its requirements.

DESCRIPTION OF OPERATIONS

The wastewater treatment facility (WWTF) for the city of Pierre serves a population of 13,646 people (2010 census). The facility is located on the southeast side of the city in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44.350661º, Longitude -100.323538º - Navigational Quality, GPS.)

The city of Pierre's wastewater treatment facility was constructed and began operation in 1962. The facility consists of a gravity flow collection system, aided by nine lift stations, which transports wastewater to a mechanical treatment facility which was upgraded in 1989, in 1999, and 2000. The upgraded facility consists of the following processes: pretreatment, primary clarification, biofiltration, activated sludge, final clarification, disinfection, dechlorination, sludge digestion, sludge dewatering, and landfilling of sludge.

Pretreatment consists of debris removal via a mechanical bar screen, grinding by two comminutors, an aerated grit removal chamber, and influent flow monitoring by a Parshall flume. Grit and debris remove during pretreatment are hauled to the city of Pierre's landfill for disposal.

Primary clarification consists of two clarifiers, operated in parallel, with provision for the addition of a third. The clarifiers have a diameter of 60 ft. with a weir diameter of 53 ft. and a sidewater depth of 8 ft. They also have aluminum domes to reduce icing problems. The sludge and scum removed are pumped to the autothermal thermophilic aerobic digestion (ATAD) system.

Secondary treatment begins with a 52-ft. diameter trickling filter. This is followed by two complete-mix activated sludge aeration basins operated in parallel. These basins are equipped with fine bubble diffuser systems. The final step of the secondary treatment is final clarification. There are two final clarifiers, operated in parallel, with provision for the addition of a third. These clarifiers have an overall diameter of 67 ft. with a weir diameter of 60 ft. and a sidewater depth of 12 ft. Most

of the sludge from the final clarifiers is returned to the activated sludge process with a small amount diverted to the dissolved air flotation (DAF) thickener.

The wastewater flows through the effluent Parshall flume to the chlorine contact basin for disinfection and then to the discharge pipe where it is discharged to Lake Sharpe (Missouri River). Sulfur dioxide is added at the outlet of the chlorine contact basin for dechlorination.

DESCRIPTION OF BIOSOLIDS TREATMENT AND DISPOSAL

Solids handling consists of treating both primary and secondary sludge. The primary sludge is pumped from the primary clarifiers directly to the ATAD system. The secondary sludge is the thickened waste activated sludge from the 36-ft. diameter DAF unit. The DAF thickening process consists of adhering suspended solid particles to air bubbles causing them to float. These low-density solids are then removed and sent to the ATAD system.

The ATAD system begins with a pre-ATAD tank, which collects the sludge and stores it until there is enough sludge to process. Next, are three 30-ft. diameter reactor tanks with an 11-ft. sidewater depth that are operated in series. Sludge stabilization occurs in these tanks when the heat generated by the aerobic thermophilic microorganisms during the digestion process destroys the pathogens in the sludge. After stabilization, the sludge is pumped to the post-ATAD tanks for cooling prior to dewatering with a belt filter press. The finished biosolids are then landfilled.

The city also has two drying beds and two concrete storage basins by the airport that can be used for additional storage in case the belt filter press is offline or if biosolids cannot be immediately landfilled.

The permittee landfilled the following amounts of biosolids:

- 270.2 Dry Metric Tons (dmt) in 2011
- 173.8 dmt in 2010
- 161.0 dmt in 2009
- 169.9 dmt in 2008
- 139.4 dmt in 2007
- 152.6 dmt in 2006

Outfall Number	Description of Biosolids Sources
201	Biosolids produced at the City of Pierre's wastewater treatment facility that are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered, and then disposed of at the city's municipal landfill.

MONITORING DATA

Chemical

There are no metal limits on biosolids that are disposed of at the landfill. The facility is required to pass a paint filter test and toxicity characterization leaching procedure (TCLP). The city has

been submitting paint filter test results in the annual biosolids report. A TCLP was submitted to the department on January 25, 2013.

Pathogen Reduction
There are no Pathogen Reduction requirements for biosolids disposed of in a landfill.

Vector Attraction Reduction
The permittee has been certifying that biosolids disposed of at the landfill have met vector attraction reduction requirements by being covered daily at the disposal site.

INSPECTIONS

Personnel from South Dakota Department of Environment and Natural Resources (SDDENR) conducted an inspection of the city of Pierre wastewater treatment facility on September 26, 2012. Biosolids management was evaluated during this inspection. The following comment concerning biosolids were noted.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The city does not have a current biosolids management plan. ***This was mentioned in the previous biosolids inspection.***	Section 1.5 of the city's biosolids management permit requires the city to develop a Biosolids Management Plan. The city shall submit a biosolids best management plan to the department by **November 30, 2012** for review and approval**.** The plan shall include all of the information required in the city's permit. Once approved, the biosolids management plan becomes an enforceable part of the city's biosolids management permit. [The biosolids management plan was submitted and approved by the department on January 31, 2013]

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The facility is not sampling their biosolids for the Toxicity Characteristic Leaching Procedure (TCLP). ***This was mentioned in the previous biosolids inspection.***	The city is required by Section 1.4.1 of their permit to perform a TCLP analysis once every five years. The city needs to collect a sample of the biosolids and have it analyzed for the TCLP-metals. The sample results shall be submitted with the response due **November 30, 2012.** If the city cannot submit results of a TCLP test by November 30, 2012, an explanation shall be submitted with the November 30, 2012 report as to why a sample results could not be submitted. In this situation, the TCLP sample results shall be provided to SDDENR as soon as possible. [Results were submitted January 25, 2013]
The city submitted the 2008 and 2009 annual biosolids report late. The 2010 and 2011 annual reports were submitted on time.	The city is required to submit an annual report by **February 19th** of the year following the reporting year. The city needs to continue submitting their report on time.

BIOSOLIDS LIMITS

Effective immediately and lasting through the life of this permit, all biosolids generated by this facility and disposed of at an appropriate landfill shall meet the requirements listed below based on Best Professional Judgement (BPJ).

The facility shall dispose of its biosolids in an appropriate permitted landfill as defined in 40 CFR 258. This disposal must comply with the state's solid waste regulations. Not all landfills in the state are permitted to accept biosolids. For more information about disposing of biosolids in an appropriate landfill, please contact the Waste Management Program at (605)773-3153.

Chemical

There will be no metals limits in the proposed permit. However, the biosolids produced by the facility must comply with the monitoring requirements, including passing the paint filter test, the TCLP, and testing for percent solids. If the biosolids fail either the paint filter or the TCLP tests, the biosolids cannot be sent to the landfill. The facility must annually report the amount of biosolids disposed of at the landfill.

Pathogens

There will be no pathogen reduction requirements for biosolids that are disposed of at an appropriate landfill.

Vector Attraction Reduction
The permittee is required to reduce the potential for attracting vectors such as mosquitoes. The biosolids shall meet the following alternative for vector attraction reduction:

- Biosolids disposed of at a landfill shall be covered with soil or other material at the end of each operating day.

There are additional approved alternatives for reducing vector attraction available in 40 CFR 503.33 (a.b.r. in ARSD Chapter 74:52:09). If the permittee intends to use one of these alternatives, SDDENR must be informed in writing at least 30 days prior to its use. ***This change may be made without additional public notice.***

SELF MONITORING REQUIREMENTS

Biosolids Monitoring
Effective immediately and lasting through the life of the permit, all biosolids disposed of at an appropriate permitted landfill shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the nature of the biosolids.

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test[1]	Annually prior to disposal at landfill	Pass or Fail	Grab
TCLP[1]	Every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the 40 CFR Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

BEST MANAGEMENT PRACTICES

The facility shall operate in accordance with the following best management practices:

1. On January 31, 2013, the city of Pierre submitted a Biosolids Management Plan that was approved by SDDENR. Because the revised Biosolids Management Plan was submitted prior to permit issuance, SDDENR is waiving the requirement that the city of Watertown submit a current Biosolids Management Plan within 180 days of permit issuance. The current plan will be an enforceable part of the proposed permit. In general, the plan shall include all of the elements found in Attachment 1.

If the permittee would like to amend its Biosolids Management Plan, it must notify SDDENR in writing at least 30 days prior to the change for review and approval.

2. Landfill disposal shall be conducted in a manner that will not contaminate the groundwater underlying the site.
3. Landfill disposal shall be conducted in a manner that will not cause or contribute to a violation of any receiving water quality standard from discharges of surface runoff.
4. Landfill disposal shall not cause or contribute to the harm of threatened or endangered species or result in the destruction or modification of critical habitat of threatened or endangered species.
5. Landfill disposal shall not restrict the flow of a 100-year flood.
6. Public access to the site shall be restricted so the public is not exposed to potential health and safety hazards.

REQUIRED RECORDKEEPING

The permittee is to retain the following records for at least five years. These recordkeeping requirements are dependent upon the quality of biosolids produced by the permittee. At a minimum, the following records shall be kept:

1. A copy of the analytical results for the Paint Filter Tests, percent solids, and the TCLP.
2. A description of how the vector attraction reduction requirements were met;
3. A description of how the best management practices were met;
4. Yearly certification statements for landfilled biosolids stating that the vector attraction reduction and management practices were met. The certification statement shall be as follows:

> *"I certify under penalty of law the vector attraction reduction method in Part 1.3.2 of the permit and best management practices in Part 1.5 of the permit have been met and that the biosolids were disposed at a facility in compliance with 40 CFR 258. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."*

REPORTING REQUIREMENTS

The permittee is required to monitor, collect, and provide the following information for each reporting year:

1. The total amount of biosolids, in dry metric tons, that is generated by the facility during the reporting year;

2. A summary of any biosolids received from other facilities:
   a) Summary of total amount of biosolids received, in dry metric tons;
   b) Summary of amount of biosolids received from each individual facility, in dry metric tons;
   c) Name of each facility sending biosolids; and
   d) Location of each facility.
3. A summary of any biosolids sent to other facilities/operations:
   a) Summary of total amount of biosolids sent to other facilities, in dry metric tons;
   b) Summary of amount of biosolids sent to each individual facility, in dry metric tons;
   c) Name of each facility receiving biosolids; and
   d) Location of each facility.
4. The amount of biosolids, in dry metric tons, placed in storage during the reporting year and the total amount of biosolids already in storage and how long it has been stored.
5. The amount of biosolids disposed of at the landfill during the reporting year.

The permittee shall develop an annual biosolids report. This report shall include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, information on best management practices, and certifications. This report shall be submitted to SDDENR no later than **February 19th of each year**. Each report is for the previous calendar year.

SPECIAL CONDITIONS ON BIOSOLIDS STORAGE

Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from SDDENR. Storage of biosolids for more than two years will only be allowed if it is determined that significant treatment is occurring. During the storage of biosolids, controls shall be put into place to prevent runoff of the biosolids from the storage site.

CHANGE IN TREATMENT SYSTEM OR USE/DISPOSAL PRACTICES

The permittee must inform SDDENR in writing at least 180 days prior to any significant change in the biosolids generation and handling processes at the plant and any major change in use/disposal practices. This includes but is not limited to: the addition or removal of biosolids treatment units (e.g. digesters, drying beds, etc.) and/or any other change that would require a modification of the permit (e.g. changing from land application to surface disposal).

ENDANGERED SPECIES

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit. However, the table below shows the species that may be present in the city of Pierre's geographic area.

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE
HUGHES	BIRD	CRANE, WHOOPING	KNOWN
		TERN, LEAST	KNOWN
	FISH	STURGEON, PALLID	KNOWN

This information was accessible at the following U.S. Fish and Wildlife Service website as of January 31, 2013: http://www.fws.gov/southdakotafieldoffice/SpeciesByCounty.pdf.

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

Any questions pertaining to this statement of basis and proposed permit can be directed to Tina Piroutek, Engineer II for the Surface Water Quality Program, at (605) 773-3351.

January 31, 2013

Attachment 1 – Biosolids Management Plan

BIOSOLIDS MANAGEMENT PLAN

The permittee is responsible for the safe landfill disposal of biosolids. A Biosolids Management Plan (Plan) must include current biosolids practices and a 5-year biosolids operating plan that includes the following elements:

A. A description of the permittee's biosolids production and any current and known future disposal plans.

B. A description of the pathogen treatment, vector attraction control, record keeping, monitoring, certifications, and notifications as required by the permit.

C. Procedures the permittee intends to use to ensure that biosolids practices and limits outlined in the permit are followed.

D. A statement that the permittee will comply with the Biosolids Management Plan, as approved by SDDENR.

E. A statement that the Plan will be amended to reflect any applicable practices or limits EPA or SDDENR requires.

F. A description of the sample collection, preservation and analysis methods used for sampling and monitoring of parameters.

APPENDIX C

PIERRE WWTP LOADING DATA

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.81	2.15	1.92												
2	1.62	2.35	1.87												
3	1.53	2.20	1.63												
4	1.71	2.30	1.84	444	6336	131	1869	5	71	764	10901	71	1012	11	159
5	1.36	2.30	1.48	337	3811	139	1572	4	45	546	6173	100	1131	10	110
6	1.30	1.95	1.44	448	4853	141	1528	3	33	490	5308	79	858	10	109
7	1.46	2.30	1.64												
8	1.60	2.60	1.74												
9	1.95	2.35	2.07												
10	1.25	2.35	1.30												
11	1.76	2.35	1.96	577	8465	152	2230	6	88	861	12625	91	1329	12	177
12	1.10	2.35	1.23	547	5023			3	28	884	8117	2627	24119	16	149
13	1.44	2.40	1.54	160	1922	125	1501	3	36	130	1561	73	882	14	173
14	1.49	2.25	1.58												
15	0.85	2.20	1.56												
16	2.22	2.25	1.84												
17	1.68	2.30	1.89												
18	1.52	2.30	1.75	324	4102	105	1329	6	76	290	3677	55	701	13	165
19	1.17	2.30	1.31	223	2169	147	1429	5	49	262	2543	90	875	14	132
20	1.48	2.20	1.67	293	3604	151	1858	7	86	323	3970	61	752	10	119
21	1.39	2.30	1.46												
22	1.65	2.20	1.79												
23	1.45	2.35	1.59												
24	1.56	2.45	1.69												
25	1.51	2.35	1.58	232	2922	119	1499	5	63	269	3391	69	870	15	188
26	1.64	2.35	1.73	228	3111	160	2183	5	68	246	3359	81	1106	8	111
27	1.38	2.25	1.46	222	2555	123	1416	4	46	257	2954	61	707	7	84
28	1.47	2.25	1.57												
29	1.70	2.35	1.90												
30	1.49	2.35	1.60												
31	1.52	2.65	1.65												
TOTAL	47.02		51.27		48872		18414		689		64580		34341		1675
AVG	1.52	2.3	1.65	336	4073	136	1674	5	57	443	5382	288	2862	12	140
MAX	2.22	2.7	2.07	577	8465	160	2230	7	88	884	12625	2627	24119	16	188
MIN	0.85	2.0	1.23	160	1922	105	1329	3	28	130	1561	55	701	7	84

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	2.50	1.63	257	3209	154	1923	4	50	364	4539	87	1082	14	174
2	1.45	2.85	1.58	304	3669	161	1943	6	72	548	6609	67	813	11	136
3	1.62	2.10	1.74	290	3906	164	2209	5	67	256	3448	73	989	8	108
4	1.42	2.35	1.57												
5	1.40	2.40	1.50												
6	1.62	2.30	1.74												
7	1.52	2.40	1.68												
8	1.39	2.90	1.52	288	3348	131	1523	6	70	319	3714	58	677	10	116
9	1.52	2.30	1.63	210	2657	113	1430	4	51	293	3711	74	932	9	112
10	1.55	2.30	1.66	280	3615	167	2156	5	65	281	3631	83	1076	8	105
11	1.45	2.30	1.67												
12	1.47	2.30	1.55												
13	1.62	2.30	1.70												
14	1.54	2.35	1.63												
15	1.44	2.35	1.55	335	4009	152	1819	6	72	361	4322	157	1884	13	156
16	1.47	2.15	1.57	296	3626	159	1948	6	74	287	3512	118	1445	11	138
17	1.35	1.75	1.46	206	2318	121	1361	4	45	255	2867	74	833	11	129
18	1.42	2.17	1.50												
19	1.44	2.50	1.50												
20	1.75	2.50	1.86												
21	1.44	2.50	1.51												
22	1.48	2.20	1.53	425	5235	157	1934	12	148	474	5836	68	842	11	138
23	1.50	2.30	1.57	320	4009	172	2155	6	75	325	4071	77	961	4	51
24	1.36	2.30	1.45	430	4884	158	1795	5	57	468	5313	75	857	9	103
25	1.47	2.25	1.52												
26	1.69	2.30	1.82												
27	1.43	2.30	1.50												
28	1.63	2.35	1.69												
29	1.38	2.35	1.48	360	4137	117	1345	9	103	567	6520	68	780	10	119
30															
31															
TOTAL	43.30		46.29		48622		23540		948		58094		13171		1584
AVG	1.49	2.3	1.60	308	3740	148	1811	6	73	369	4469	83	1013	10	122
MAX	1.75	2.9	1.86	430	5235	172	2209	12	148	567	6609	157	1884	14	174
MIN	1.35	1.8	1.45	206	2318	113	1345	4	45	255	2867	58	677	4	51

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.62	2.20	1.65	339	4575	164	2213	6	81	289	3898	110	1487	22	303
2	1.45	2.15	1.50	392	4750	157	1903	6	73	463	5605	93	1122	11	129
3	1.52	2.30	1.53												
4	1.75	5.00	1.82												
5	1.81	4.90	1.93												
6	1.48	2.30	1.55												
7	1.46	2.30	1.65	576	7028	159	1940	7	85	977	11927	75	915	12	143
8	1.35	2.10	1.46	507	5708	172	1937	10	113	927	10440	115	1299	30	333
9	1.46	2.25	1.55	404	4919	170	2070	7	85	700	8523	82	998	8	102
10	1.47	2.35	1.55												
11	1.76	4.80	1.87												
12	1.63	5.00	1.72												
13	1.48	2.35	1.55												
14	1.58	2.75	1.63	338	4454	128	1687	7	92	458	6036	73	966	20	261
15	1.44	2.10	1.52	319	3818	114	1364	4	48	450	5386	66	785	18	215
16	1.36	2.00	1.39	269	3051	127	1440	3	34	533	6049	63	709	8	85
17	1.47	2.05	1.46												
18	1.53	2.25	1.53												
19	1.56	2.35	1.58												
20	1.44	2.20	1.47												
21	1.57	2.15	1.57	381	4976	154	2011	4	52	603	7871	76	991	8	108
22	1.72	2.20	1.69	320	4580	150	2147	5	72	386	5520	84	1202	10	149
23	1.20	2.60	1.18	305	3063	143	1436	4	40	432	4338	61	617	8	85
24	1.50	2.00	1.50												
25	1.54	2.10	1.53												
26	1.71	2.35	1.68												
27	1.59	2.30	1.61												
28	1.67	2.35	1.62	287	4004	130	1814	4	56	490	6832	62	859	13	182
29	1.43	2.35	1.40	330	3936	169	2016	5	60	400	4770	81	963	7	81
30	1.37	1.75	1.32	277	3160	163	1860	4	46	338	3862	68	780	4	50
31	1.52	2.05	1.47												
TOTAL	47.44		48.47		62022		25837		936		91058		13693		2224
AVG	1.53	2.6	1.56	360	4430	150	1845	5	67	532	6504	79	978	13	159
MAX	1.81	5.0	1.93	576	7028	172	2213	10	113	977	11927	115	1487	30	333
MIN	1.20	1.8	1.18	269	3051	114	1364	3	34	289	3862	61	617	4	50

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.70	2.30	1.67												
2	1.64	2.60	1.61												
3	1.86	4.35	1.89												
4	1.45	2.44	1.49	418	5055	122	1475	6	73	859	10392	79	953	6	67
5	1.49	2.20	1.45	290	3601	150	1863	4	50	400	4967	108	1347	10	126
6	1.39	2.10	1.35	380	4393	218	2520	4	46	444	5129	76	879	6	67
7	1.43	2.00	1.43												
8	1.65	2.00	1.64												
9	1.55	2.35	1.56												
10	1.64	2.35	1.60												
11	1.54	2.20	1.49	312	4018	144	1854	4	52	414	5329	60	778	5	65
12	1.45	2.75	1.48	296	3575	146	1763	4	48	481	5812	69	838	9	107
13	1.53	2.30	1.50	210	2681	136	1737	3	38	214	2736	59	749	4	51
14	1.53	2.10	1.46												
15	1.88	2.40	1.87												
16	1.70	4.35	1.69												
17	1.64	2.20	1.63												
18	1.58	2.20	1.59	316	4172	131	1729	6	79	506	6675	74	975	10	128
19	1.60	2.25	1.62	310	4126	103	1371	3	40	476	6342	66	877	7	89
20	1.37	2.25	1.36	262	3002	122	1398	3	34	438	5024	79	906	11	129
21	1.63	2.10	1.64												
22	1.50	2.30	1.53												
23	1.94	3.90	2.34												
24	1.53	3.75	1.56												
25	1.40	4.25	1.74	331	3868	130	1519			421	4924	69	806	6	65
26	1.58	4.50	1.59	244	3207	114	1498	7	92	412	5417	117	1543	12	156
27	1.56	2.25	1.57	280	3650	135	1760	5	65	359	4681	86	1120	11	137
28	1.54	2.20	1.54												
29	1.78	2.30	1.81												
30	1.58	2.30	1.59												
31															
TOTAL	47.68		48.30		45347		20488		617		67430		11771		1188
AVG	1.59	2.7	1.61	304	3779	138	1707	4	56	452	5619	79	981	8	99
MAX	1.94	4.5	2.34	418	5055	218	2520	7	92	859	10392	117	1543	12	156
MIN	1.37	2.0	1.35	210	2681	103	1371	3	34	214	2736	59	749	4	51

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.59	2.25	1.63												
2	1.67	2.30	1.69	269	3749	143	1993	6	84	549	7646	91	1267	17	235
3	1.51	2.30	1.56	314	3967	178	2249	6	76	363	4589	65	820	9	115
4	1.22	2.15	1.22	260	2635	149	1510	5	51	362	3667	72	726	11	110
5	1.66	2.15	1.69												
6	1.62	2.05	1.69												
7	1.55	2.30	1.62												
8	1.43	2.30	1.49												
9	1.51	2.35	1.55	236	2978	158	1994	5	63	453	5717	93	1172	16	199
10	1.54	2.10	1.57	228	2932	146	1878	4	51	291	3746	71	908	4	56
11	1.33	1.65	1.38	170	1887	160	1776	4	44	278	3091	97	1080	11	127
12	1.43	1.75	1.47												
13	1.83	2.25	1.88												
14	1.61	2.30	1.67												
15	1.29	2.80	1.34												
16	1.50	2.30	1.52	324	4045	169	2110	6	75	536	6695	82	1021	15	190
17	1.74	2.30	1.77	230	3342	156	2266	5	73	377	5481	71	1033	3	50
18	1.20	2.00	1.20	266	2667	172	1724	5	50	372	3729	79	793	8	80
19	1.52	2.25	1.52												
20	1.73	2.30	1.74												
21	1.75	2.35	1.74												
22	1.49	2.35	1.51												
23	1.70	2.10	1.73	275	3901	173	2454	6	85	445	6319	65	924	10	149
24	1.62	2.15	1.61	290	3913	184	2483	6	81	284	3837	75	1007	4	49
25	1.50	2.20	1.44	339	4227	318	3965	7	87	340	4239	64	797	15	183
26	1.50	2.00	1.45												
27	1.49	2.00	1.47												
28	1.99	3.15	1.97												
29	1.33	2.10	1.33												
30	1.63	2.20	1.63	294	3997	253	3439	7	95	380	5161	76	1031	13	175
31	1.49	2.00	1.45	314	3891	178	2206	6	74	384	4764	84	1040	22	267
TOTAL	47.97		48.49		48131		32047		990		68682		13619		1984
AVG	1.55	2.2	1.56	272	3438	181	2289	6	71	387	4906	77	973	11	142
MAX	1.99	3.2	1.97	339	4227	318	3965	7	95	549	7646	97	1267	22	267
MIN	1.20	1.7	1.20	170	1887	143	1510	4	44	278	3091	64	726	3	49

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.44	1.95	1.41	228	2729	229	2741	5	60	376	4500	53	634	12	140
2	1.48	1.95	1.44												
3	1.89	2.00	1.86												
4	1.53	2.15	1.52												
5	1.59	2.10	1.56												
6	1.62	2.10	1.58	440	5937	207	2793	6	81	679	9169	83	1125	6	84
7	1.56	2.70	1.54	403	5236	186	2417	6	78	550	7147	80	1034	6	82
8	1.48	2.70	1.40	365	4499	163	2009	6	74	482	5939	57	698	9	113
9	1.64	1.90	1.61												
10	1.79	2.00	1.80												
11	1.32	1.90	1.34												
12	1.81	2.10	1.76												
13	1.69	2.10	1.62	383	5395	265	3733	7	99	500	7043	39	552	7	99
14	1.62	2.60	1.65	310	4196	197	2667	6	81	372	5035	75	1009	8	109
15	1.40	2.25	1.37	298	3477	268	3127	6	70	336	3920	60	700	8	93
16	1.45	2.05	1.42												
17	1.75	2.20	1.77												
18	1.64	2.15	1.65												
19	1.41	2.15	1.43												
20	1.63	2.35	1.63	191	2593	130	1765			319	4328	65	879	2	27
21	1.53	2.00	1.52	191	2437	162	2067	3	38	354	4519	74	942	6	77
22	1.49	2.05	1.46	200	2489	155	1929	3	37	309	3840	70	873	5	57
23	1.50	2.00	1.52												
24	1.69	2.25	1.70												
25	1.72	2.50	1.73												
26	1.53	2.00	1.55												
27	1.84	2.20	1.89	344	5267	259	3966	4	61	642	9833	52	796	5	83
28	1.58	2.20	1.61	280	3697	176	2324	4	53	297	3922	67	880	3	39
29	1.30	1.95	1.31	223	2423	169	1837	4	43	348	3782	72	787	5	58
30	1.51	2.05	1.53												
31															
TOTAL	47.45		47.17		50376		33373		776		72976		10908		1063
AVG	1.58	2.2	1.57	297	3875	197	2567	5	65	428	5614	65	839	6	82
MAX	1.89	2.7	1.89	440	5937	268	3966	7	99	679	9833	83	1125	12	140
MIN	1.30	1.9	1.31	191	2423	130	1765	3	37	297	3782	39	552	2	27

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.67	2.10	1.74												
2	1.66	2.35	1.78												
3	1.38	2.00	1.44												
4	1.66	2.15	1.74	219	3025	176	2431	4	55	421	5809	40	548	6	80
5	1.71	2.00	1.75	215	3070	133	1899	3	43	343	4902	81	1156	17	245
6	1.34	2.10	1.39	242	2702	148	1653	4	45	271	3027	53	587	6	66
7	1.40	2.00	1.45												
8	1.75	1.95	1.78												
9	1.38	2.25	1.46												
10	1.72	2.25	1.74												
11	1.78	2.05	1.83	221	3277	128	1898	4	59	270	4001	47	700	8	116
12	1.31	2.00	1.35	1178	12841	139	1515	3	33	376	4099	78	846	18	197
13	1.35	2.00	1.43	285	3197	151	1694	4	45	290	3257	44	499	10	110
14	1.55	2.00	1.56												
15	1.63	2.10	1.69												
16	1.70	2.35	1.75												
17	1.87	2.10	1.87												
18	1.51	2.24	1.57	289	3649	159	2008	5	63	412	5205	91	1154	10	122
19	1.48	2.20	1.53	279	3439	145	1787	4	49	538	6635	91	1128	12	144
20	1.44	2.05	1.50	216	2596	163	1959	4	48	311	3739	70	843	5	60
21	1.49	2.05	1.53												
22	1.62	2.30	1.68												
23	1.88	2.35	1.92												
24	1.46	2.90	1.49												
25	1.77	4.05	1.80	281	4148	141	2081	3	44	550	8123	41	601	5	79
26	1.68	2.15	1.75	272	3820	187	2626	5	70	265	3725	24	330	3	48
27	1.38	2.00	1.39	302	3468	185	2125	5	57	461	5293	55	628	12	135
28	1.47	2.20	1.53												
29	1.45	2.30	1.53												
30	1.57	2.20	1.63												
31	1.59	2.40	1.67												
TOTAL	48.67		50.25		49232		23676		612		57813		9020		1403
AVG	1.57	2.2	1.62	333	4103	155	1973	4	51	376	4818	60	752	9	117
MAX	1.88	4.1	1.92	1178	12841	187	2626	5	70	550	8123	91	1156	18	245
MIN	1.31	2.0	1.35	215	2596	128	1515	3	33	265	3027	24	330	3	48

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.59	2.00	1.66	304	4029	244	3234	5	66	477	6317	42	550	3	35
2	1.62	2.25	1.62	262	3540	217	2932	4	54	343	4632	155	2099	11	149
3	1.43	2.00	1.46	289	3437	152	1808	4	48	336	3996	382	4545	9	104
4	1.48	2.20	1.54												
5	1.55	2.10	1.61												
6	1.81	2.50	1.86												
7	1.46	2.35	1.54												
8	1.47	2.20	1.55	263	3229	224	2750	4	49	487	5976	18	218	4	53
9	1.57	2.20	1.60	304	3981	134	1755	4	52	389	5097	79	1032	6	78
10	1.32	2.20	1.35	219	2416	133	1467	3	33	347	3833	61	669	5	53
11	1.41	2.20	1.49												
12	1.78	2.20	1.87												
13	1.33	2.45	1.39												
14	1.49	2.15	1.58												
15	1.61	2.20	1.68	309	4159	203	2733	6	81	642	8648	56	760	8	112
16	1.42	2.15	1.48	248	2939	133	1576	3	36	350	4148	162	1923	10	120
17	1.27	2.15	1.32	283	3007	282	2996	5	53	391	4153	39	416	6	61
18	1.32	2.00	1.39												
19	1.50	2.05	1.55												
20	1.60	2.10	1.69												
21	1.41	2.35	2.48												
22	1.49	2.35	0.56	320	3977	169	2100	4	50	629	7816	74	918	8	101
23	1.23	2.30	1.30	282	2893	178	1826	4	41	368	3775	119	1218	11	113
24	1.54	2.30	1.61	247	3162	192	2458	4	51	314	4015	61	786	7	96
25	1.32	2.05	1.44												
26	1.37	2.30	1.48												
27	1.42	2.40	1.49												
28	1.52	2.50	1.62												
29	1.45	2.20	1.58	297	3602	161	1952	5	61	558	6769	72	869	12	151
30	1.39	2.15	1.49	289	3343	172	1990	4	46	429	4963	84	972	7	80
31	1.55	2.10	1.62	166	2144	241	3113			316	4084	47	603	3	44
TOTAL	45.71		47.87		49857		34690		721		78223		17577		1348
AVG	1.47	2.2	1.54	272	3324	189	2313	4	51	425	5215	97	1172	7	90
MAX	1.81	2.5	2.48	320	4159	282	3234	6	81	642	8648	382	4545	12	151
MIN	1.23	2.0	0.56	166	2144	133	1467	3	33	314	3775	18	218	3	35

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.15	1.95	1.21												
2	1.40	1.45	1.51												
3	1.31	2.15	1.45												
4	1.74	3.70	1.86												
5	1.39	2.20	1.47	370	4305	243	2827	6	70	619	7207	51	592	4	46
6	1.53	2.15	1.61	312	3981	151	1927	3	38	426	5437	76	971	7	92
7	1.22	2.15	1.32	254	2595	145	1481	3	31	302	3089	91	933	21	216
8	1.48	2.00	1.51												
9	1.32	2.09	1.48												
10	1.43	2.25	1.51												
11	1.44	2.32	1.55												
12	1.39	2.00	1.52	279	3223	146	1686	4	46	640	7395	92	1061	13	151
13	1.53	2.10	1.64	277	3546	157	2010	4	51	426	5455	75	960	7	83
14	1.08	1.66	1.15	311	2793	172	1545	4	36	435	3905	81	724	9	79
15	1.34	1.91	1.48												
16	1.58	2.08	1.72												
17	1.29	2.05	1.43												
18	1.60	2.06	1.72												
19	1.29	3.04	1.42	300	3230	138	1486	3	32	608	6548	71	761	8	82
20	1.49	2.14	1.57	294	3663	162	2019	4	50	444	5532	80	997	2	31
21	1.00	2.05	1.07	346	2883	188	1566	5	42	468	3897	125	1038	15	124
22	1.33	2.04	1.42												
23	1.45	1.97	1.57												
24	1.53	2.08	1.64												
25	1.33	1.98	1.45												
26	1.44	2.30	1.49	307	3695	215	2587	4	48	546	6566	63	762	9	108
27	1.50	1.99	1.59	324	4056	179	2241	4	50	421	5266	67	844	4	50
28	1.21	1.94	1.29	279	2820	178	1799	4	40	424	4287	79	798	8	82
29	1.23	2.05	1.32												
30	1.81	2.01	1.94												
31															
TOTAL	41.86		44.91		40790		23175		535		64586		10441		1144
AVG	1.40	2.1	1.50	304	3399	173	1931	4	45	480	5382	79	870	9	95
MAX	1.81	3.7	1.94	370	4305	243	2827	6	70	640	7395	125	1061	21	216
MIN	1.00	1.5	1.07	254	2595	138	1481	3	31	302	3089	51	592	2	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.38	1.97	1.50												
2	1.29	2.14	1.39												
3	1.28	2.29	1.39	374	3993	300	3203	6	64	555	5927	50	534	7	75
4	1.30	1.95	1.44	343	3713	185	2003	4	43	365	3951	75	812	4	42
5	1.39	2.25	1.51	300	3473	167	1933	3	35	379	4391	79	915	14	157
6	1.24	2.00	1.38												
7	1.06	2.02	1.46												
8	1.92	2.10	1.74												
9	1.41	2.18	1.55												
10	1.39	2.11	1.47	434	5035	189	2193	5	58	817	9479	89	1034	11	129
11	1.14	2.09	1.26	249	2361	150	1422	3	28	382	3621	95	900	5	48
12	1.39	2.10	1.48	253	2939	152	1766			412	4792	70	816	13	156
13	1.31	1.95	1.41												
14	1.94	2.05	2.10												
15	1.06	1.90	0.94												
16	1.40	1.83	1.66												
17	1.47	1.91	1.57	363	4441	172	2104	5	61	517	6325	84	1026	6	78
18	1.25	1.69	1.30	337	3508	180	1873	3	31	396	4123	81	846	3	32
19	1.20	1.69	1.30	353	3542	191	1916	4	40	339	3398	71	711	5	54
20	1.15	1.98	1.18												
21	1.21	2.00	1.31												
22	1.76	2.33	1.88												
23	1.30	2.14	1.39												
24	1.52	3.00	1.62	367	4640	231	2921	5	63	576	7279	59	743	8	107
25	1.53	1.97	1.63	474	6048	247	3152	6	77	509	6500	97	1236	4	52
26	0.99	1.60	1.08	511	4223	231	1909	5	41	343	2836	62	512	4	31
27	1.38	1.60	1.48												
28	1.55	1.99	1.65												
29	1.42	1.91	1.50												
30	1.33	2.09	1.43												
31	1.52	2.47	1.60	387	4916	187	2375	5	64	632	8029				
TOTAL	42.46		45.57		52832		28770		606		70651		10084		961
AVG	1.37	2.0	1.47	365	4064	199	2213	5	50	479	5435	76	840	7	80
MAX	1.94	3.0	2.10	511	6048	300	3203	6	77	817	9479	97	1236	14	157
MIN	0.99	1.6	0.94	249	2361	150	1422	3	28	339	2836	50	512	3	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.27	2.18	1.36	298	3151	182	1925	5	53	376	3978	56	588	6	60
2	1.14	2.53	1.22	312	2959	155	1470	4	38	525	4978	80	756	10	95
3	1.36	1.82	1.47												
4	1.61	1.83	1.75												
5	1.55	1.99	1.63												
6	1.29	1.84	1.40												
7	1.21	2.06	1.29	378	3827	212	2146	5	51	639	6465	83	838	5	49
8	1.47	2.01	1.55	431	5277	212	2596	8	98	576	7052	94	1148	9	109
9	1.26	1.99	1.35	427	4505	221	2332	6	63	500	5275	86	909	10	105
10	1.26	2.22	1.38												
11	1.42	1.91	1.57												
12	1.51	1.99	1.66												
13	1.37	1.82	1.47												
14	1.47	2.18	1.53	459	5620	170	2081	8	98	760	9311	69	851	27	326
15	1.22	2.13	1.25	485	4923	213	2162	8	81	618	6271	55	556	5	55
16	1.32	1.92	1.36	545	5995	185	2035	5	55	658	7237	69	754	13	148
17	1.32	2.05	1.42												
18	1.65	2.11	1.76												
19	1.28	1.94	1.37												
20	1.51	2.00	1.60												
21	1.30	2.10	1.37	485	5271	194	2108	8	87	758	8239	103	1122	18	199
22	1.23	2.10	1.30	442	4519	244	2495	8	82	880	8998	56	574	9	88
23	1.37	2.00	1.46	309	3536	188	2151	7	80	436	4986	90	1035	12	135
24	1.21	2.40	1.23												
25	1.41	1.96	1.51												
26	1.36	1.96	1.44												
27	1.35	1.94	1.43												
28	1.30	1.94	1.37	321	3483	167	1812	8	87	627	6801	95	1027	21	231
29	1.35	1.87	1.42	394	4426	198	2224	8	90	629	7061	87	983	18	205
30	1.42	1.87	1.45	375	4429	185	2185	8	94	583	6889	71	844	14	160
31															
TOTAL	40.78		43.35		61920		29722		1057		93543		11983		1962
AVG	1.36	2.0	1.45	404	4423	195	2123	7	75	612	6682	78	856	13	140
MAX	1.65	2.5	1.76	545	5995	244	2596	8	98	880	9311	103	1148	27	326
MIN	1.14	1.8	1.22	298	2959	155	1470	4	38	376	3978	55	556	5	49

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.27	2.06	1.32												
2	1.44	1.94	1.45												
3	1.28	2.08	1.36												
4	1.38	1.91	1.43												
5	1.43	2.01	1.48	498	5935	227	2705	7	83	697	8305	77	921	13	151
6	1.44	1.97	1.51	415	4970	177	2120	6	72	670	8019	91	1087	16	188
7	1.07	1.97	1.11	397	3549	224	2003	5	45	486	4343	78	698	11	101
8	1.28	1.30	1.34												
9	1.48	1.88	1.69												
10	1.26	1.85	1.35												
11	1.33	1.89	1.40												
12	1.23	1.89	1.29	455	4652	157	1605	3	31	793	8112	84	857	12	125
13	1.54	2.06	1.64	454	5820	196	2512	5	64	741	9501	116	1487	9	120
14	0.92	1.88	1.00	554	4255	246	1890	7	54	473	3636	83	640	10	75
15	1.25	1.91	1.36												
16	1.46	1.91	1.56												
17	1.34	1.91	0.90												
18	1.30	1.96	2.01												
19	1.25	1.81	1.39	328	3422	136	1419			622	6490	96	1003	4	42
20	1.35	1.67	1.45	341	3845	184	2075	5	56	420	4736	100	1128	10	116
21	1.14	1.90	1.30	310	2960	170	1623	3	29	200	1910	93	885	3	27
22	1.25	2.05	1.40												
23	1.21	1.73	1.38												
24	1.09	1.92	1.24												
25	1.19	1.69	1.35												
26	1.24	1.74	1.35	331	3431	195	2021	5	52	263	2727	56	582	7	70
27	1.26	5.00	1.37	332	3480	159	1667	4	42	296	3108	84	878	4	42
28	1.03	1.80	1.26	369	3173	189	1625	7	60	307	2643	73	630	26	227
29	1.26	2.00	1.42												
30	1.40	1.90	1.55												
31	1.42	1.34	1.51												
TOTAL	39.79		43.15		49494		23266		588		63528		10795		1284
AVG	1.28	2.0	1.39	399	4125	188	1939	5	53	497	5294	86	900	10	107
MAX	1.54	5.0	2.01	554	5935	246	2705	7	83	793	9501	116	1487	26	227
MIN	0.92	1.3	0.90	310	2960	136	1419	3	29	200	1910	56	582	3	27

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.52	1.91	1.53												
2	1.27	1.89	1.52	296	3143	158	1677	5	53	268	2845	68	719	7	76
3	1.29	3.02	1.42	370	3968	196	2102	5	54	297	3183	83	894	8	85
4	1.30	2.00	1.40	341	3686	164	1773	5	54	323	3492	73	791	10	110
5	1.31	2.00	1.45												
6	1.51	1.85	1.63												
7	1.45	1.97	1.52												
8	1.44	1.90	1.50												
9	1.44	1.95	1.49	507	6068	188	2250	5	60	686	8204	81	967	7	80
10	1.19	1.88	1.25	434	4315	195	1939	5	50	475	4722	106	1058	6	57
11	1.24	1.78	1.35	413	4268	167	1726	3	31	520	5373	85	881	5	52
12	1.32	1.89	1.51												
13	1.42	1.82	1.63												
14	1.30	1.87	1.49												
15	1.46	2.67	1.49												
16	1.43	2.21	1.50	483	5740	218	2591	6	71	657	7808	74	875	3	34
17	1.47	1.85	1.52	275	3360	176	2150	4	49	329	4022	119	1448	7	82
18	1.11	1.37	1.14	519	4792	182	1680	5	46	828	7646	55	510	6	60
19	1.29	1.30	1.40												
20	1.84	1.77	1.42												
21	1.12	2.00	1.52												
22	1.12	1.84	1.54												
23	1.54	1.92	1.65	421	5404	161	2066	4	51	632	8111	70	903	3	39
24	1.42	1.87	1.51	167	1982	140	1661	4	47						
25	1.11	1.81	1.16	372	3456	144	1338	4	37	366	3398	71	659	7	70
26	1.36	1.90	1.44												
27	1.47	1.89	1.58												
28	1.60	1.97	1.70												
29	1.35	1.84	1.45												
30	1.40	1.82	1.52	382	4470	197	2305	5	59	338	3958	62	731	12	145
31	1.39	1.89	1.47	378	4385	192	2227	5	58	360	4176	30	342	4	44
TOTAL	42.46		45.71		59035		27486		720		66939		10778		934
AVG	1.37	1.9	1.47	383	4217	177	1963	5	51	468	5149	75	829	7	72
MAX	1.84	3.0	1.70	519	6068	218	2591	6	71	828	8204	119	1448	12	145
MIN	1.11	1.3	1.14	167	1982	140	1338	3	31	268	2845	30	342	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.13	1.84	1.19	183	1719	185	1737	4	38	326	3058	72	680	6	53
2	1.45	1.90	1.51												
3	1.64	2.44	1.74												
4	1.53	2.70	1.59												
5	1.40	3.37	1.48												
6	1.47	2.07	1.57	194	2370	152	1857	3	37	265	3240	63	769	7	91
7	1.39	3.34	1.44	206	2388	136	1577	4	46	243	2815	88	1021	6	69
8	1.83	1.39	1.23	186	2845	129	1973			233	3569	83	1275	5	70
9	1.34	1.36	1.42												
10	1.02	2.08	1.76												
11	1.45	2.60	1.55												
12	1.25	2.15	1.27												
13	1.56	2.34	1.57	327	4241	239	3100	5	65	273	3544	92	1197	3	36
14	1.46	1.95	1.54		322	173	2101	4	49	309	3753	94	1144	4	43
15	1.28	1.80	1.32	235	2505	154	1641	3	32	240	2558	74	790	3	37
16	1.50	2.00	1.54												
17	1.58	2.05	1.61												
18	1.49	2.14	1.59												
19	1.14	1.96	1.20												
20	1.50	2.01	1.56	316	3958	201	2518	6	75	250	3132	113	1421	2	23
21	1.30	1.95	1.39	256	2767	162	1751	3	32	186	2007	65	699	2	20
22	1.24	1.59	1.32	294	3053	170	1765	3	31	278	2889	71	742	2	23
23	1.31	2.08	1.36												
24	1.86	2.09	1.92												
25	1.39	3.16	1.46												
26	1.39	2.16	1.39												
27	1.42	1.84	1.45	248	2937	158	1871	3	36	279	3299	62	740	2	28
28	1.36	1.86	1.41	175	1981	151	1709	3	34	258	2925	81	920	6	67
29															
30															
31															
TOTAL	39.67		41.35		31085		23600		474		36790		11398		560
AVG	1.42	2.2	1.48	238	2590	168	1967	4	43	262	3066	80	950	4	47
MAX	1.86	3.4	1.92	327	4241	239	3100	6	75	326	3753	113	1421	7	91
MIN	1.02	1.4	1.19	175	322	129	1577	3	31	186	2007	62	680	2	20

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.18	1.92	1.20	221	2175	176	1732	6	59	289	2847	110	1079	4	40
2	1.46	2.23	1.46												
3	1.71	2.07	1.76												
4	1.48	3.50	1.51												
5	1.50	2.07	1.55												
6	1.21	1.86	1.19	247	2482	160	1608	5	50	316	3175	102	1025	6	61
7	1.64	1.89	1.64	210	2876	147	2013	3	41	307	4210	88	1207	6	87
8	0.60	2.21	1.12	291	1456	153	766	3	15	376	1881	86	433	6	31
9	1.88	2.02	1.38												
10	1.45	2.04	1.49												
11	1.66	1.99	1.65												
12	1.56	2.22	1.59												
13	1.44	2.23	1.40	270	3236	191	2289	5	60	279	3349	91	1090	9	108
14	1.08	2.22	1.08	224	2012	144	1293	3	27	373	3348	81	727	6	49
15	1.37	1.81	1.37	182	2083	139	1591			243	2784	78	887	6	74
16	1.22	1.88	1.22												
17	1.55	1.87	1.55												
18	1.46	2.15	1.48												
19	1.46	2.19	1.50												
20	1.38	2.16	1.37	280	3220	179	2059	4	46	324	3730	81	934	7	83
21	1.37	1.99	1.37	200	2290	162	1855	3	34	269	3080	164	1881	3	32
22	1.19	2.00	1.19	187	1859	158	1571			277	2750	91	907	8	79
23	1.39	1.95	1.40												
24	1.53	2.09	1.56												
25	1.74	2.15	1.76												
26	1.34	2.17	1.35												
27	1.38	1.85	1.39	347	4002	211	2434	5	58	372	4285	65	748	8	97
28	1.44	2.15	1.44	315	3778	170	2039	4	48	328	3931	86	1031	4	51
29	1.39	1.80	1.39	292	3373	194	2241	5	58	261	3013	53	616	6	71
30	1.41	2.00	1.42												
31	1.40	1.96	1.43												
TOTAL	43.85		44.18		34842		23489		496		42384		12565		863
AVG	1.41	2.1	1.43	251	2680	168	1807	4	45	309	3260	91	967	6	66
MAX	1.88	3.5	1.76	347	4002	211	2434	6	60	376	4285	164	1881	9	108
MIN	0.60	1.8	1.08	182	1456	139	766	3	15	243	1881	53	433	3	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.61	2.93	1.66												
2	1.38	3.43	1.37												
3	1.51	2.15	1.50	284	3581	163	2055	4	50	315	3973	59	745	7	85
4	1.50	2.11	1.50	235	2946	181	2269	4	50	325	4074	79	992	3	39
5	1.53	2.14	1.53	281	3586	172	2195	5	64	650	8294	73	928	5	67
6	1.33	2.24	1.33												
7	1.70	2.30	1.73												
8	1.46	2.29	1.52												
9	1.32	2.20	1.36												
10	1.67	1.84	1.71	378	5252	164	2279	5	69	463	6433	60	827	8	106
11	1.25	2.22	1.29	295	3083	136	1421	4	42	346	3614	57	600	6	65
12	1.29	2.29	1.29	327	3513	206	2213	4	43	537	5774	144	1546	13	143
13	1.56	2.36	1.57												
14	2.03	2.56	2.11												
15	1.55	2.43	1.62												
16	1.42	2.94	1.47												
17	1.49	2.94	1.57	125	1556	146	1818	4	50	3487	43420	194	2411	10	120
18	1.66	3.27	1.72			112	1555	2	28	1858	25799	172	2390	8	104
19	1.20	2.31	1.24	100	997	141	1406	3	30	1650	16458	396	3951	14	142
20	1.47	2.13	1.52												
21	1.85	2.13	1.91												
22	1.53	2.37	1.59												
23	1.57	2.43	1.59												
24	1.67	3.56	1.73	405	5654	181	2527	5	70	1965	27434	100	1396	6	89
25	1.53	2.20	1.56	252	3213	126	1607			1430	18235	100	1275	6	72
26	1.31	2.21	1.31	130	1415	117	1273	4	44	3800	41358	137	1489	6	66
27	1.46	2.26	1.52												
28	1.77	2.34	1.83												
29	1.66	2.47	1.70												
30	1.30	2.19	1.33												
31															
TOTAL	45.59		46.67		34797		22618		539		204865		18552		1099
AVG	1.52	2.4	1.56	256	3163	154	1885	4	49	1402	17072	131	1546	8	92
MAX	2.03	3.6	2.11	405	5654	206	2527	5	70	3800	43420	396	3951	14	143
MIN	1.20	1.8	1.24	100	997	112	1273	2	28	315	3614	57	600	3	39

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.55	2.35	1.58	336	4341	190	2455	5	209	2100	27129	148	1918	11	143
2	1.88	3.45	1.86	309	4835	123	1924	3	75	8700	136119	250	3911	10	155
3	1.11	2.42	1.27	457	4219	181	1671	4	133	9118	84183	331	3059	11	99
4	1.56	5.00	1.56												
5	1.95	2.33	1.95												
6	1.69	3.71	1.86												
7	1.58	3.07	1.58												
8	1.62	2.72	1.64	216	2926	94	1273	4	133	410	5559	118	1595	10	130
9	1.63	3.03	1.65	231	3150	188	2564	3	75	354	4825	174	2367	6	88
10	0.77	2.33	0.92	358	2290	133	851	3	75	591	3780	92	588	3	19
11	1.48	2.00	1.49												
12	1.63	2.15	1.61												
13	1.75	2.41	1.76												
14	1.61	3.17	1.61												
15	1.41	2.39	1.38	354	4160	153	1798	6	300	488	5735	103	1214	9	107
16	1.79	2.32	1.76	413	6176	135	2019	4	133	567	8474	127	1897	9	135
17	1.60	2.37	1.51	394	5254	135	1800	4	133	323	4304	84	1122	8	110
18	1.64	2.43	1.56												
19	1.72	3.33	1.73												
20	1.73	2.69	1.77												
21	1.86	2.48	1.79												
22	1.58	2.51	1.52	793	10463	116	1530	4	133	1580	20847	87	1145	12	162
23	1.64	2.45	1.67	437	5963	120	1637	4	133	1052	14359	112	1526	10	140
24	1.36	2.26	1.21	203	2299	117	1325	4	133	276	3126	107	1212	11	126
25	1.49	2.24	1.43												
26	1.49	2.25	1.44												
27	2.17	2.21	2.13												
28	1.45	2.67	1.46												
29	1.76	2.74	1.75							756	11085	573	8404	15	221
30	1.85	2.47	1.83							537	8266	298	4596	15	231
31	1.22	2.23	1.20							478	4841	51	515	11	109
TOTAL	49.56		49.48		56074		20847		1668		342630		35068		1976
AVG	1.60	2.7	1.60	375	4673	140	1737	4	139	1822	22842	177	2338	10	132
MAX	2.17	5.0	2.13	793	10463	190	2564	6	300	9118	136119	573	8404	15	231
MIN	0.77	2.0	0.92	203	2290	94	851	3	75	276	3126	51	515	3	19

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	1.50	1.52												
2	1.82	1.82	1.80												
3	1.73	1.73	1.75												
4	1.39	1.39	1.40												
5	1.72	1.72	1.75	323	4641	142	2041	4	57	733	10529	106	1523	12	174
6	1.56	1.56	1.58	351	4578	114	1487	4	52	504	6572	82	1071	12	159
7	1.45	1.45	1.42	447	5391	142	1712	5	60	593	7146	91	1103	10	115
8	1.57	1.58	1.57												
9	1.69	1.69	1.70												
10	1.55	1.55	1.59												
11	1.53	1.53	1.55												
12	2.03	7.89	2.07	435	7372	94	1593	3	51	922	15625	135	2296	8	144
13	1.67	2.45	1.69	225	3139	117	1632	5	70	454	6329	100	1395	8	119
14	1.17	2.40	1.20	305	2976	138	1347	3	29	383	3733	69	678	3	30
15	1.52	2.20	1.57												
16	1.93	2.17	1.97												
17	1.79	2.45	1.80												
18	1.41	2.46	1.43												
19	1.72	2.47	1.76	167	2389	116	1659	4	57	265	3790	86	1233	7	95
20	1.46	2.53	1.67	211	2562	120	1457	3	36	472	5732	92	1113	11	128
21	1.50	2.75	1.51	202	2527	109	1364	3	38	374	4678	71	894	7	86
22	1.54	2.30	1.57												
23	1.80	2.50	1.82												
24	1.54	2.55	1.56												
25	1.76	2.71	1.86												
26	1.61	2.92	1.68	442	5946	140	1883	4	54	620	8339	106	1427	10	136
27	1.77	3.03	1.84	155	2288	131	1934	4	59	179	2636	91	1342	10	148
28	1.23	5.68	1.29	243	2487	157	1607	5	51	227	2322	112	1142	7	68
29	1.43	2.32	1.51												
30	1.75	2.16	1.82												
31															
TOTAL	48.14		49.23		46296		19716		615		77432		15217		1401
AVG	1.60	2.4	1.64	292	3858	127	1643	4	51	477	6453	95	1268	9	117
MAX	2.03	7.9	2.07	447	7372	157	2041	5	70	922	15625	135	2296	12	174
MIN	1.17	1.4	1.20	155	2288	94	1347	3	29	179	2322	69	678	3	30

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.63	2.64	1.69												
2	1.51	2.68	1.56												
3	1.78	2.54	1.85	282	4196	170	2529	5	74	399	5943	140	2077	10	143
4	1.35	2.22	1.44	233	2623	151	1700	3	34	500	5630	108	1216	7	81
5	1.20	2.28	1.26	166	1661	84	841			292	2925	55	549	9	86
6	1.50	2.19	1.59												
7	2.17	3.01	2.15												
8	1.59	2.35	1.56												
9	1.95	2.66	1.91												
10	1.48	2.76	1.46	190	2340	109	1343	3	37	335	4130	89	1100	7	85
11	1.75	3.59	1.77	277	4043	280	4087	7	102	159	2321	160	2339	16	235
12	1.04	2.43	1.00	190	1642	154	1331	5	43	216	1867	101	876	11	99
13	1.67	2.27	1.71												
14	1.72	2.46	1.66												
15	1.70	2.46	1.68												
16	1.95	2.57	1.95												
17	1.61	2.33	1.61	3888	52076	82	1098	3	40	573	7679	61	821	9	117
18	1.45	2.41	1.48	278	3369	135	1636	5	61	388	4702	56	683	5	60
19	1.59	2.01	1.54	379	5019	189	2503	7	93	307	4061	76	1009	6	86
20	1.59	2.38	1.47												
21	1.79	2.64	1.71												
22	1.65	2.64	1.58												
23	1.77	2.80	1.65												
24	1.51	2.74	1.46	424	5325	112	1407	7	88	768	9650	89	1123	17	212
25	1.76	2.75	1.66	281	4118	235	3444	6	88	300	4396	85	1253	18	267
26	1.14	2.10	1.09	206	1950	130	1231	5	47	254	2400	117	1106	29	278
27	1.51	2.85	1.42												
28	1.67	2.60	1.61												
29	1.94	2.94	1.87												
30	1.69	2.83	1.60												
31	1.48	2.64	1.43	277	3421	120	1482	5	62	447	5517	99	1217	23	283
TOTAL	50.11		49.38		91784		24630		769		61222		15369		2032
AVG	1.62	2.6	1.59	544	7060	150	1895	5	64	380	4709	95	1182	13	156
MAX	2.17	3.6	2.15	3888	52076	280	4087	7	102	768	9650	160	2339	29	283
MIN	1.04	2.0	1.00	166	1642	82	841	3	34	159	1867	55	549	5	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.88	4.37	1.75	265	4157	137	2149	5	78	336	5267	95	1490	21	324
2	1.44	4.12	1.33	393	4733	157	1891	7	84	376	4528	112	1348	22	264
3	1.78	4.53	1.67												
4	1.90	4.37	1.76												
5	1.90	4.26	1.80												
6	1.84	4.29	1.71												
7	1.73	4.03	1.62	234	3384	106	1533	4	58	571	8264	54	787	10	139
8	1.65	3.58	1.54	258	3557	135	1861	4	55	400	5514	87	1203	10	139
9	1.37	4.50	1.25	308	3522	130	1486	4	46	511	5837	85	969	9	100
10	1.65	4.09	1.52												
11	1.74	4.22	1.66												
12	1.72	3.81	1.62												
13	1.69	4.07	1.57												
14	1.71	3.87	1.57	547	7801	149	2125	6	86	1308	18655	104	1479	15	219
15	1.66	4.30	1.53	383	5290	142	1961	4	55	604	8342	76	1048	4	50
16	1.33	4.56	1.21	311	3439	115	1272	3	33	575	6359	61	677	8	92
17	1.62	4.99	1.52												
18	2.01	3.99	1.94												
19	1.42	3.91	1.41												
20	1.90	4.37	1.76												
21	1.72	4.20	1.68	536	7707	241	3465	5	72	1144	16449	230	3302	13	190
22	1.41	3.93	1.36	334	3933	155	1825	3	35	564	6645	93	1096	12	136
23	1.42	5.05	1.32	341	4036	142	1680	4	47	884	10464	67	789	12	141
24	1.51	3.81	1.51												
25	1.89	4.12	1.95												
26	1.35	4.12	1.39												
27	1.77	3.64	1.81												
28	1.84	3.74	1.79	308	4729	126	1935	6	92	807	12385	135	2075	16	242
29	1.36	3.63	1.38	230	2607	109	1235	4	45	445	5049	60	684	3	34
30	1.43	4.76	1.35	176	2092	127	1509	3	36	463	5497	71	841	9	111
31	1.61	6.25	1.50												
TOTAL	51.25		48.80		60985		25929		823		119255		17788		2178
AVG	1.65	4.2	1.57	330	4356	141	1852	4	59	642	8518	95	1271	12	156
MAX	2.01	6.3	1.95	547	7801	241	3465	7	92	1308	18655	230	3302	22	324
MIN	1.33	3.6	1.21	176	2092	106	1235	3	33	336	4528	54	677	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.44	3.98	1.36												
2	1.94	4.39	1.91												
3	1.63	5.21	1.57												
4	1.48	4.96	1.39	349	4308	127	1568	6	74	812	10019	71	874	12	148
5	1.92	4.42	1.83	253	4051	142	2274	4	64	473	7575	95	1520	8	124
6	1.20	4.15	1.12	288	2873	155	1546	4	40	418	4166	85	853	12	115
7	1.60	4.16	1.51												
8	2.02	5.06	1.96												
9	1.71	4.88	1.61												
10	1.56	4.71	1.54												
11	1.60	4.45	1.54	444	5921	152	2027	8	107	1002	13367	107	1422	14	182
12	1.63	4.77	1.55	342	4644	166	2254	4	54	500	6789	79	1072	5	73
13	1.28	4.64	1.21	348	3721	15	160	3	32	439	4697	81	869	4	47
14	1.46	4.14	1.42												
15	1.73	4.37	1.81												
16	1.61	4.44	1.64												
17	1.53	4.62	1.56												
18	1.49	4.86	1.53	425	5292	138	1718	5	62	863	10742	71	882	11	134
19	1.44	4.33	1.45	394	4745	194	2336	5	60	567	6824	96	1160	9	114
20	1.17	4.50	1.17	195	1903	104	1015			384	3747	79	774	8	76
21	1.49	4.93	1.43												
22	1.86	5.49	1.84												
23	1.70	5.72	1.66												
24	1.68	4.91	1.57												
25	1.53	4.77	1.52	279	3553	158	2012	8	102	487	6196	106	1347	22	284
26	1.52	4.27	1.49	227	2885	146	1856	5	64	308	3915	182	2319	9	113
27	1.28	4.35	1.25	200	2128	132	1405	5	53	293	3119	86	917	12	125
28	1.49	5.20	1.42												
29	1.85	4.95	1.83												
30	1.52	4.84	1.48												
31															
TOTAL	47.33		46.18		46023		20171		712		81157		14008		1534
AVG	1.58	4.7	1.54	312	3835	136	1681	5	65	545	6763	95	1167	10	128
MAX	2.02	5.7	1.96	444	5921	194	2336	8	107	1002	13367	182	2319	22	284
MIN	1.17	4.0	1.12	195	1903	15	160	3	32	293	3119	71	774	4	47

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.58	4.35	1.54												
2	1.64	5.69	1.55	332	4533	132	1802	9	123	637	8690	81	1106	42	576
3	1.67	5.60	1.58	270	3756	152	2114	3	42	184	2560	196	2727	9	121
4	1.47	5.29	1.48	130	1592	104	1273	4	49	121	1482	238	2910	37	454
5	1.62	5.29	1.63												
6	2.09	4.79*	2.03												
7	1.71	4.33	1.58												
8	1.71	4.95	1.59												
9	1.62	5.43	1.57	287	3887	121	1639	5	68	851	11531	153	2075	22	297
10	1.42	4.70	1.34	385	4553	172	2034	5	59	500	5913	104	1225	10	121
11	1.68	5.13	1.59	473	6612	183	2558	4	56	448	6262	90	1256	14	197
12	1.49	4.97	1.44												
13	1.64	4.57	1.61												
14	2.27	4.87	2.39												
15	1.70	4.23	1.83												
16	1.58	3.96	1.60	456	6020	169	2231	6	79	629	8308	104	1372	15	198
17	1.76	4.29	1.87	278	4090	124	1824	4	59	568	8352	86	1272	15	224
18	1.20	7.26	1.28	434	4347	152	1522	6	60	572	5733	90	900	14	145
19	1.64	4.18	1.69												
20	1.87	4.83	1.99												
21	1.54	4.01	1.69												
22	1.38	4.00	1.52												
23	2.04	4.03	2.15	343	5830	127	2159	10	170	785	13340	81	1381	16	264
24	1.14	4.92	1.21	226	2154	145	1382	4	38	414	3945	100	953	10	91
25	1.50	4.25	1.47	239	2988	127	1588	4	50	331	4135	55	682	17	210
26	1.60	4.29	1.67												
27	1.73	5.17	1.81												
28	1.40	4.01	1.54												
29	1.51	4.50	1.73												
30	1.41	3.54	1.59	548	6462	165	1946	7	83	789	9300	86	1017	18	210
31	1.49	4.03	1.56	411	5111	181	2251	6	75	535	6648	102	1266	15	184
TOTAL	50.08		51.12		61935		26324		1010		96201		20142		3292
AVG	1.62	4.7	1.65	344	4424	147	1880	6	72	526	6872	112	1439	18	235
MAX	2.27	7.3	2.39	548	6612	183	2558	10	170	851	13340	238	2910	42	576
MIN	1.14	3.5	1.21	130	1592	104	1273	3	38	121	1482	55	682	9	91

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.13	4.07	1.19	287	2700	140	1317	3	28	389	3662	109	1026	9	84
2	1.60	4.46	1.68												
3	1.66	5.71	1.76												
4	1.48	4.75	1.62												
5	1.45	3.76	1.58												
6	1.48	4.13	1.57	510	6274	197	2423	6	74	782	9615	111	1367	18	223
7	1.42	4.10	1.52	369	4367	175	2071	6	71	481	5695	80	947	14	162
8	1.12	4.10	1.19	269	2506	182	1695	3	28	368	3424	184	1718	19	172
9	1.40	3.71	1.52												
10	1.43	4.47	1.54												
11	1.59	3.71	1.91												
12	1.38	4.49	1.50												
13	1.64	4.11	1.72	363	4962	144	1968	7	96	745	10182	100	1367	21	292
14	1.65	4.02	1.75	423	5807	135	1853	5	69	648	8898	64	874	12	166
15	0.90	4.02	0.99	319	2397	149	1120	4	30	403	3030	81	606	14	102
16	1.37	4.29	1.51												
17	1.71	4.79	1.91												
18	1.57	4.11	1.71												
19	1.72	3.88	1.85												
20	0.90	4.46	1.04	559	4182	191	1429	6	45	656	4906	113	849	16	122
21	1.51	3.91	1.86	337	4252	145	1830	4	50	495	6249	101	1280	13	159
22	0.92	4.17	1.10	230	1770	176	1355	3	23	517	3977	108	829	16	124
23	1.28	4.30	1.52												
24	1.89	4.08	2.11												
25	0.95	3.98	1.12												
26	1.38	3.66	1.59												
27	1.22	4.08	1.29	486	4941	194	1972	14	142	660	6706	76	775	51	514
28	1.23	3.94	1.39	383	3919	130	1330	6	61	583	5963	61	622	19	194
29	1.29	4.06	1.41	540	5814	200	2153	6	65	500	5383	103	1113	16	170
30	1.35	4.50	1.45												
31															
TOTAL	41.59		45.89		53892		22518		782		77692		13373		2484
AVG	1.39	4.2	1.53	390	4146	166	1732	6	60	556	5976	99	1029	18	191
MAX	1.89	5.7	2.11	559	6274	200	2423	14	142	782	10182	184	1718	51	514
MIN	0.90	3.7	0.99	230	1770	130	1120	3	23	368	3030	61	606	9	84

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.70	5.25	1.79												
2	1.49	5.09	1.58												
3	1.19	3.63	1.37												
4	1.34	3.58	1.47	550	6151	143	1599	6	67	880	9842	113	1268	25	283
5	1.02	3.28	1.46	871	7395	171	1452	8	68	1040	8830	110	931	22	190
6	0.90	3.24	1.22	338	2529	166	1242	6	45	486	3634	88	655	10	78
7	1.20	3.13	1.51												
8	1.39	3.65	1.84												
9	1.28	4.13	1.54												
10	1.22	5.11	1.50												
11	1.22	3.28	1.49	328	3337	359	3653	8	81	274	2786	933	9496	33	339
12	1.13	3.78	1.34	169	1598	156	1475	5	47	226	2133	110	1045	11	108
13	0.99	4.11	1.23	163	1344	121	998	4	33	221	1819	97	803	10	82
14	1.21	4.01	1.45												
15	1.57	4.10	1.84												
16	1.29	4.50	1.53												
17	1.47	4.13	1.51												
18	1.38	3.77	1.50	438	5023	189	2167	7	80	391	4480	89	1021	12	141
19	1.24	4.16	1.51	293	3033	207	2142	6	62	347	3590	111	1144	16	165
20	0.89	3.70	1.13	403	3001	203	1512	5	37	300	2234	95	705	8	60
21	1.13	2.80	1.41												
22	1.45	3.34	1.86												
23	1.24	3.76	1.43												
24	1.03	3.72	1.18												
25	1.45	3.87	1.63	177	2143	148	1792	5	61	181	2189	109	1325	13	161
26	1.17	3.44	1.34	238	2326	139	1359	5	49	218	2133	85	829	12	114
27	1.14	4.10	1.24	317	3017	184	1751	7	67	211	2005	84	799	9	87
28	1.24	3.99	1.43												
29	1.51	3.03	1.80												
30	1.28	3.76	1.53												
31	1.01	3.73	1.20												
TOTAL	38.77		45.87		40898		21143		697		45676		20020		1808
AVG	1.25	3.8	1.48	357	3408	182	1762	6	58	398	3806	169	1668	15	151
MAX	1.70	5.3	1.86	871	7395	359	3653	8	81	1040	9842	933	9496	33	339
MIN	0.89	2.8	1.13	163	1344	121	998	4	33	181	1819	84	655	8	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.41	2.83	1.79	256	3822	206	3075	7	105	210	3135	87	1299	14	209
2	1.20	2.85	1.44	277	3327	155	1861	7	84	215	2582	76	913	10	120
3	1.25	4.29	1.38	294	3384	129	1485	4	46	330	3798	80	921	10	115
4	1.26	3.39	1.49												
5	1.55	3.07	1.86												
6	1.22	3.15	1.47												
7	1.38	2.79	1.68												
8	1.27	2.71	1.54	260	3339	153	1965	7	90	211	2710	74	950	8	103
9	1.30	4.27	1.49	396	4921			7	87	228	2833	95	1181	11	137
10	1.20	4.53	1.30	262	2841	191	2071	6	65	196	2125	80	867	11	119
11	1.45	4.18	1.55												
12	1.43	4.29	1.56												
13	1.69	4.05	1.88												
14	1.58	7.10	1.79												
15	1.47	4.66	1.59	331	4389	185	2453	5	66	319	4230	94	1246	6	80
16	1.13	4.24	1.38	259	2981	146	1680	4	46	237	2728	114	1312	8	92
17	1.37	4.19	1.48	215	2654	150	1851	4	49	191	2358	101	1247	10	123
18	1.34	4.31	1.48												
19	1.47	4.43	1.59												
20	1.58	3.94	1.90												
21	1.25	4.04	1.44												
22	1.36	2.94	1.68	227	3181	161	2256	3	42	217	3040	102	1429	9	126
23	1.33	3.14	1.54	225	2890	210	2697	4	51	187	2402	82	1053	8	103
24	1.14	3.80	1.25	234	2439	175	1824	4	42	221	2304	89	928	8	83
25	1.56	3.87	1.78												
26	1.44	4.24	1.76												
27	1.21	3.11	1.52												
28	1.67	3.20	1.98												
29	1.19	3.63	1.43	284	3387	184	2194	7	83	255	3041	100	1193	15	179
30	1.11	2.84	1.40	266	3106	146	1705	4	47	472	5511	71	829	8	93
31	0.98	2.72	1.16	229	2215			4	39	210	2032	1066	10313	11	106
TOTAL	41.79		48.58		48875		27119		942		44829		25680		1789
AVG	1.35	3.8	1.57	268	3258	169	2086	5	63	247	2989	154	1712	10	119
MAX	1.69	7.1	1.98	396	4921	210	3075	7	105	472	5511	1066	10313	15	209
MIN	0.98	2.7	1.16	215	2215	129	1485	3	39	187	2032	71	829	6	80

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.17	3.24	1.47												
2	1.58	4.24	1.92												
3	1.34	2.49	1.67												
4	1.42	2.74	1.77												
5	0.94	2.92	1.22	336	2631	176	1378	4	31	285	2230	95	744	9	72
6	1.40	2.65	1.76	360	4212	213	2492	4	47	240	2808	67	780	5	58
7	0.90	2.78	1.10	224	1689	145	1093	3	23	306	2304	131	989	6	47
8	1.22	2.70	1.54												
9	1.51	2.73	1.93												
10	1.37	2.68	1.66												
11	1.33	2.81	1.57												
12	1.35	2.98	1.51	312	3508	190	2136	6	67	270	3033	108	1211	10	116
13	1.35	2.97	1.61	304	3413	166	1863	7	79	255	2864	93	1042	9	105
14	0.99	2.66	1.16	250	2060	148	1220	4	33	209	1723	85	697	11	88
15	1.27	3.58	1.46												
16	1.34	2.96	1.53												
17	1.73	3.52	1.90												
18	1.23	7.26	1.41												
19	1.42	3.84	1.57	313	3709	170	2015	10	119	245	2908	91	1079	12	144
20	1.24	4.07	1.49	211	2184	138	1428	4	41	255	2635	70	721	7	75
21	1.15	3.69	1.31	196	1878	136	1303	3	29	193	1848	82	787	10	96
22	1.24	2.70	1.48												
23	1.30	2.84	1.65												
24	1.57	2.32	1.83												
25	1.28	2.73	1.56												
26	1.32	2.76	1.55	317	3485	204	2242	9	99	312	3434	81	890	23	258
27	1.34	2.37	1.53	280	3134	183	2048	6	67	286	3203	91	1016	18	200
28	0.91	2.94	1.06	265	2000	365	2755	4	30	230	1738	140	1055	8	63
29															
30															
31															
TOTAL	36.18		43.19		33903		21975		665		30728		11010		1322
AVG	1.29	3.15	1.54	281	2825	186	1831	5	55	257	2561	94	918	11	110
MAX	1.73	7.26	1.93	360	4212	365	2755	10	119	312	3434	140	1211	23	258
MIN	0.90	2.32	1.06	196	1689	136	1093	3	23	193	1723	67	697	5	47

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.43	2.70	1.77												
2	1.44	2.77	1.68												
3	1.32	2.52	1.55												
4	1.20	2.35	1.43												
5	1.44	2.53	1.59	356	4269	200	2399	7	84	293	3514	94	1124	10	121
6	1.45	3.93	1.56	360	4359	160	1938	5	61	336	4065	90	1086	9	108
7	1.17	2.60	1.35	294	2869	188	1834	4	39	259	2530	107	1045	8	77
8	1.32	3.46	1.41												
9	1.66	4.06	1.77												
10	1.43	4.95	1.53												
11	1.46	3.72	1.56												
12	1.50	3.82	1.59	284	3541	154	1920	5	62	267	3324	92	1143	7	84
13	1.49	3.25	1.57	225	2794	153	1900	4	50	265	3285	103	1277	8	105
14	1.15	3.86	1.20	302	2891	131	1254	5	48	273	2611	54	518	5	53
15	1.33	2.82	1.49												
16	1.88	4.10	1.99												
17	1.46	3.37	1.53												
18	1.47	3.52	1.58												
19	1.48	3.98	1.56	273	3370	271	3345	8	99	266	3284	253	3119	8	95
20	1.17	3.17	1.20	287	2800	253	2469	8	78	203	1983	295	2882	37	364
21	1.12	2.75	1.19	210	1963	136	1271	3	28	244	2284	99	925	20	184
22	1.28	3.13	1.37												
23	1.65	3.12	1.76												
24	1.64	2.95	1.74												
25	1.49	2.95	1.51												
26	1.66	3.22	1.69	412	5704	198	2741	8	111	356	4927	93	1291	3	37
27	1.21	3.24	1.26	308	3100	154	1550	5	50	314	3159	76	769	8	77
28	1.16	3.44	1.21	281	2723	219	2122	5	48	246	2385	97	940	8	74
29	1.46	3.26	1.47												
30	1.87	3.39	1.91												
31	1.37	3.48	1.45												
TOTAL	44.15		47.46		40385		24744		758		37352		16120		1378
AVG	1.42	3.30	1.53	299	3365	185	2062	6	63	277	3113	121	1343	11	115
MAX	1.88	4.95	1.99	412	5704	271	3345	8	111	356	4927	295	3119	37	364
MIN	1.12	2.35	1.19	210	1963	131	1254	3	28	203	1983	54	518	3	37

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.32		1.35												
2	1.43		1.43	310	3707	166	1985			279	3332	80	953	18	212
3	1.86		1.81	370	5740	207	3211			302	4689	97	1507	21	332
4	1.16		1.12	268	2591	144	1392			233	2255	86	831	22	216
5	1.56		1.53												
6	1.79		1.77												
7	1.82		1.78												
8	1.48		1.47												
9	1.52		1.49	298	3780	131	1662	13	165	325	4119	71	906	22	280
10	1.55		1.51	292	3765	172	2218	13	168	275	3546	95	1227	22	290
11	1.25		1.21	314	3284	191	1998	13	136	304	3176	122	1276	29	304
12	1.63		1.56												
13	1.60		1.57												
14	1.78		1.71												
15	1.63		1.54												
16	1.57		1.50	239	3137	129	1693	14	184	263	3451	69	912	34	443
17	1.56		1.46	243	3157	185	2404	13	169	229	2978	77	1006	16	205
18	1.50		1.33	396	4941	177	2208	15	187	474	5913	127	1582	34	425
19	1.94		1.75												
20	1.59		1.42												
21	1.96		1.76												
22	1.62		1.43												
23	1.76		1.56	288	4235	157	2308	11	162	273	4014	117	1715	19	272
24	1.88		1.64	319	5012	169	2655	9	141	242	3804	100	1571	16	246
25	1.26		1.08	230	2409	142	1487	9	94	225	2357	98	1025	18	189
26	1.78		1.52												
27	2.50		2.19												
28	2.03		1.80												
29	2.13		1.95												
30	2.30		1.87	285	5464	159	3049	9	173	221	4231	102	1950	18	347
31															
TOTAL	50.76		47.10		51223		28271		1578		47865		16461		3761
AVG	1.69		1.57	296	3940	164	2175	12	158	280	3682	95	1266	22	289
MAX	2.50		2.19	396	5740	207	3211	15	187	474	5913	127	1950	34	443
MIN	1.16		1.08	230	2409	129	1392	9	94	221	2255	69	831	16	189

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.55	2.71	1.35	344	4453	184	2382	8	104	319	4126	109	1412	20	252
2	1.43	2.82	1.22	202	2407	113	1347	6	72	230	2741	83	986	21	246
3	1.86	2.49	1.57												
4	2.27	2.50	1.96												
5	1.70	2.69	1.46												
6	2.00	2.68	1.75												
7	1.98	2.66	1.74	280	4619	137	2260	7	115	213	3512	87	1432	20	330
8	2.08	2.70	1.86	261	4525	170	2948	7	121	387	6704	93	1614	18	306
9	1.57	2.62	1.35	210	2743	179	2338	7	91	180	2351	110	1437	22	286
10	1.79	1.93	1.58												
11	2.29	2.53	2.07												
12	1.82	2.73	1.64												
13	2.01	2.73	1.82												
14	1.86	3.12	1.69	214	3321	146	2266	6	93	175	2716	95	1477	11	167
15	1.63	2.36	1.48	320	4339	176	2387	6	81	265	3594	94	1279	8	102
16	1.61	2.28	1.46	237	3186	154	2070	7	94	159	2141	77	1033	12	159
17	1.78	2.23	1.61												
18	2.14	2.05	1.96												
19	1.93	2.81	1.79												
20	1.96	3.15	1.83												
21	1.66	2.66	1.55	445	6150	121	1672	9	124	1154	15945	80	1110	11	150
22	1.78	2.82	1.63	228	3383	147	2181	6	89	180	2664	90	1335	14	205
23	1.54	2.21	1.42	210	2688	146	1869	5	64	164	2101	90	1157	10	129
24	1.60	1.95	1.47												
25	1.84	2.37	1.75												
26	2.07	2.37	1.93												
27	1.75	2.72	1.66												
28	1.99	2.64	1.84	236	3909	238	3942	7	116	192	3175	49	816	11	177
29	1.99	2.46	1.87	218	3622	132	2193	5	83	207	3441	97	1611	8	138
30	1.35	2.57	1.27	257	2904	129	1458	6	68	224	2535	62	700	11	127
31	1.99	2.81	1.86												
TOTAL	56.80		51.42		52250		31312		1316		57746		17398		2775
AVG	1.83	2.56	1.66	262	3732	155	2237	7	94	289	4125	87	1243	14	198
MAX	2.29	3.15	2.07	445	6150	238	3942	9	124	1154	15945	110	1614	22	330
MIN	1.35	1.93	1.22	202	2407	113	1347	5	64	159	2101	49	700	8	102

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	2.51	2.53	2.36												
2	1.51	2.93	1.47												
3	2.11	2.99	1.99												
4	1.82	2.80	1.71	180	2737	119	1809	5	76	213	3240	79	1197	13	197
5	1.81	2.53	1.72	284	4292	147	2221	6	91	310	4690	112	1696	10	158
6	1.47	2.56	1.38	192	2347	108	1320	4	49	222	2717	75	912	10	122
7	1.62	2.22	1.55												
8	2.39	2.41	2.27												
9	1.35	2.86	1.30												
10	2.03	2.67	1.92												
11	1.71	2.70	1.61	225	3211	128	1827	6	86	222	3161	88	1253	9	128
12	1.93	2.71	1.82	198	3194	135	2177	4	65	207	3333	75	1202	10	155
13	1.47	2.98	1.37	224	2754	151	1856	5	61	174	2144	110	1354	12	147
14	1.86	2.66	1.74												
15	2.16	2.30	2.05												
16	1.89	2.94	1.79												
17	1.89	2.80	1.78												
18	1.86	2.72	1.80	200	3099	129	1999	4	62	197	3051	102	1573	9	137
19	1.89	7.25	1.82	184	2894	172	2705	4	63	170	2680	119	1878	10	157
20	1.49	2.67	1.45	162	2008	113	1400	3	37	159	1976	75	929	5	60
21	1.76	2.38	1.64												
22	2.16	2.45	2.07												
23	1.76	3.84	1.68												
24	1.74	2.90	1.67												
25	1.90	3.06	1.81	272	4317	158	2508	5	79	187	2967	81	1288	6	97
26	1.99	2.65	1.87	203	3371	133	2208	4	66	205	3404	86	1427	7	118
27	1.59	2.91	1.48	278	3679	130	1721	4	53	257	3403	47	623	11	149
28	1.74	2.64	1.62												
29	2.07	2.63	1.96												
30	1.83	2.59	1.73												
31															
TOTAL	55.31		52.41		37902		23753		788		36767		15334		1623
AVG	1.84	2.88	1.75	217	3159	135	1979	5	66	210	3064	87	1278	9	135
MAX	2.51	7.25	2.36	284	4317	172	2705	6	91	310	4690	119	1878	13	197
MIN	1.35	2.22	1.30	162	2008	108	1320	3	37	159	1976	47	623	5	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.90	2.61	1.77												
2	1.56	2.59	1.48	211	2740	126	1636	3	39	229	2980	103	1336	7	87
3	1.52	1.88	1.42	231	2921	129	1631	4	51	172	2181	69	872	3	41
4	1.64	2.43	1.60	210	2869	113	1544	3	41	221	3022	64	871	10	137
5	1.47	2.23	1.49												
6	1.95	2.20	1.96												
7	1.71	2.39	1.69												
8	1.44	2.51	1.45												
9	1.65	2.53	1.61	286	3928	140	1923	4	55	271	3720	94	1290	8	105
10	1.95	2.41	1.92	194	3152	129	2096	3	49	189	3069	77	1255	6	90
11	1.32	2.84	1.31	379	4188	182	2011	4	44	240	2647	108	1193	4	48
12	1.60	2.59	1.56												
13	1.82	2.70	1.80												
14	1.69	2.41	1.70												
15	1.63	3.63	1.63												
16	1.55	2.23	1.54	221	2864	110	1426	5	65	242	3135	82	1058	3	45
17	1.63	2.03	1.60	232	3156	143	1945	5	68	218	2968	94	1279	10	136
18	1.28	2.59	1.25	225	2406	130	1390	4	43	224	2398	82	873	8	84
19	1.54	2.03	1.50												
20	1.95	1.91	1.92												
21	1.67	2.44	1.64												
22	1.52	2.55	1.49												
23	2.13	2.67	2.07	148	2628	123	2184	5	89	267	4744	67	1194	10	175
24	1.11	2.48	1.10	322	2986	170	1577	5	46	253	2348	84	780	8	79
25	1.47	7.28	1.42	357	4368	110	1346	4	49	496	6070	68	828	10	121
26	1.60	1.98	1.55												
27	1.96	2.70	1.94												
28	1.30	2.84	1.26												
29	1.94	2.47	1.97												
30	1.44	2.76	1.50	349	4197	143	1720	5	60	355	4266	82	982	10	118
31	1.66	3.35	1.65	238	3285	159	2195	5	69	171	2362	92	1274	3	36
TOTAL	50.59		49.80		45688		24622		767		45909		15086		1301
AVG	1.63	2.65	1.61	257	3263	136	1759	4	55	254	3279	83	1078	7	93
MAX	2.13	7.28	2.07	379	4368	182	2195	5	89	496	6070	108	1336	10	175
MIN	1.11	1.88	1.10	148	2406	110	1346	3	39	171	2181	64	780	3	36

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.28	2.88	1.30	209	2226	160	1704	5	53	209	2223	89	944	10	111
2	1.45	2.70	1.48												
3	1.76	2.38	1.78												
4	1.70	2.48	1.68												
5	1.76	7.24	1.62												
6	1.06	7.58	1.19	233	2062	132	1168	3	27	262	2316	145	1280	23	205
7	1.42	2.25	1.52	222	2638	127	1509	3	36	202	2405	95	1127	25	293
8	1.43	2.20	1.52	213	2533	114	1356	3	36	230	2735	79	938	16	187
9	1.30	2.20	1.40												
10	1.56	2.80	1.74												
11	1.40	2.48	1.52												
12	1.51	2.18	1.63												
13	1.21	2.08	1.32	234	2359	135	1361	6	60	268	2700	75	761	16	163
14	1.49	1.93	1.61	204	2530	144	1786	5	62	222	2756	79	985	5	58
15	1.17	1.87	1.28	215	2093	132	1285	4	39	203	1978	82	799	7	69
16	1.17	1.91	1.27												
17	1.56	1.87	1.73												
18	1.67	2.60	1.81												
19	1.12	2.31	1.22												
20	1.30	2.03	1.40	201	2176	122	1321	4	43	262	2832	88	949	6	64
21	1.53	2.25	1.66	286	3649	144	1837	4	51	216	2751	63	798	4	53
22	1.08	1.95	1.14	213	1917	120	1080	3	27	212	1904	86	777	7	62
23	1.38	2.05	1.49												
24	1.53	2.02	1.66												
25	1.22	2.18	1.33												
26	1.58	2.09	1.70												
27	1.52	2.10	1.61	241	3047	130	1644	3	38	627	7933	98	1242	7	95
28	1.17	2.22	1.24	192	1867	135	1313			422	4102	138	1343	4	34
29	1.32	1.92	1.40	266	2933	128	1411	3	33	192	2113	35	385	3	38
30	1.32	1.80	1.39												
31	1.26	1.75	1.37												
TOTAL	43.21		46.04		32030		18775		505		38748		12328		1431
AVG	1.39	2.53	1.49	225	2464	133	1444	4	42	271	2981	89	948	10	110
MAX	1.76	7.58	1.81	286	3649	160	1837	6	62	627	7933	145	1343	25	293
MIN	1.06	1.75	1.14	192	1867	114	1080	3	27	192	1904	35	385	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	1.79	1.37												
2	1.35	1.83	1.35												
3	1.34	2.57	1.44	338	3777	132	1475	3	34	587	6560	79	883	8	89
4	1.58	6.03	1.70	328	4322	171	2253	4	53	333	4388	85	1120	3	40
5	0.84	1.87	0.83	250	1751	166	1163			378	2648	94	659	7	49
6	1.31	2.10	1.39												
7	1.62	2.03	1.74												
8	1.45	2.08	1.55												
9	1.30	2.32	1.26												
10	1.23	2.36	1.06	267	2739	160	1641	4	41	231	2370	86	882	3	31
11	1.53	1.98	1.34	196	2501	167	2131			280	3573	139	1774	2	26
12	1.14	2.00	0.94	234	2225	182	1730	3	29	235	2234	93	884	6	57
13	1.29	2.05	1.22												
14	1.58	1.97	1.56												
15	1.46	2.11	1.48												
16	1.32	2.28	1.36												
17	1.46	2.79	1.54	238	2898	137	1668	3	37	247	3008	59	718	14	170
18	1.41	1.98	1.48	248	2916	174	2046	4	47	297	3493	94	1105	7	82
19	1.08	2.00	1.13	218	1964	151	1360	3	27	211	1901	90	811	4	36
20	1.27	2.01	1.35												
21	1.69	2.00	1.79												
22	1.32	2.05	1.40												
23	1.35	2.12	1.46												
24	1.39	2.13	1.49	216	2504	165	1913	4	46	184	2133	121	1403	7	81
25	1.36	2.13	1.44	171	1940	112	1270	3	34	176	1996	70	794	6	68
26	1.15	9.99	1.18	209	2005	107	1026	3	29	166	1592	82	786	5	48
27	1.90	1.87	1.40												
28	1.70	1.99	1.83												
29	1.42	9.98	1.51												
30	1.76	1.97	1.88												
31															
TOTAL	42.10		42.47		31542		19678		376		35895		11819		777
AVG	1.40	2.75	1.42	243	2628	152	1640	3	38	277	2991	91	985	6	65
MAX	1.90	9.99	1.88	338	4322	182	2253	4	53	587	6560	139	1774	14	170
MIN	0.84	1.79	0.83	171	1751	107	1026	3	27	166	1592	59	659	2	26

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.35		1.44	252	2837	127	1430	4	45	210	2364	71	799	3	34
2	1.08		1.02	165	1486	127	1144	3	27	258	2324	106	955	5	45
3	1.09	2.11	1.02	231	2100	124	1127	4	36	210	1909	34	309	6	55
4	1.33	1.94	1.25												
5	1.52	2.05	1.65												
6	1.42		1.53												
7	1.24	2.10	1.25												
8	1.40		1.34	295	3444	170	1985	5	58	294	3433	82	957	3	35
9	1.35	2.07	1.21	214	2409	197	2218	3	34	253	2849	83	934	5	56
10	1.22	2.26	1.21	287	2920	130	1323	4	41	196	1994	67	682	4	41
11	1.30	1.85	1.37												
12	1.31	1.83	1.31												
13	1.52		1.45												
14	1.31	2.04	1.35												
15	1.64	2.48	1.77	347	4746	153	2093	6	82	256	3501	84	1149	6	82
16	1.36	1.93	1.48	268	3040	143	1622	6	68	226	2563	91	1032	8	91
17	0.95	1.92	0.92	327	2591	154	1220	4	32	254	2012	67	531	5	40
18	1.29	1.90	1.28												
19	1.47	2.04	1.55												
20	1.52		1.65												
21	1.35		1.40												
22	1.35	2.42	1.30	260	2927	126	1419	8	90	395	4447	87	980	9	101
23	1.15	1.98	1.08	297	2849	183	1755	6	58	765	7337	111	1065	5	48
24	1.31	1.98	1.31	239	2611	145	1584	6	66	503	5495	106	1158	12	131
25	1.36	2.03	1.47												
26	1.35	2.03	1.47												
27	1.44	2.22	1.53												
28	1.77	2.22	1.90												
29	1.28	4.74	1.38	405	4323	126	1345	6	64	582	6213	48	512	6	64
30	0.94	2.30	0.96	438	3434	141	1105	5	39	282	2211	41	321	5	39
31	1.09	2.09	1.49	457	4154	248	2254	6	55	332	3018	110	1000	4	36
TOTAL	41.06		42.34		45873		23624		794		51672		12385		898
AVG	1.32	2.19	1.37	299	3058	153	1575	5	53	334	3445	79	826	6	60
MAX	1.77	4.74	1.90	457	4746	248	2254	8	90	765	7337	111	1158	12	131
MIN	0.94	1.83	0.92	165	1486	124	1105	3	27	196	1909	34	309	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.30	1.78	1.46												
2	1.57	1.86	1.77												
3	1.23	2.21	1.39												
4	1.29	2.26	1.36												
5	1.20	2.07	1.21	387	3873	188	1882	8	80	312	3122	119	1191	7	70
6	1.32	2.09	1.49	262	2884	210	2312	3	33	270	2972	150	1651	9	99
7	1.26	2.24	1.25	376	3951	160	1681	5	53	271	2848	65	683	5	53
8	1.16	1.61	1.00												
9	1.39	1.66	1.06												
10	1.11	2.24	1.23												
11	1.73	1.87	1.97												
12	0.86	1.97	1.03	217	1556	117	839	7	50	251	1800	65	466	16	115
13	1.17		1.39	234	2283	128	1249	6	59	192	1873	43	420	8	78
14	1.29	2.10	1.19	255	2743	146	1571	6	65	217	2335	72	775	3	32
15	1.09	1.73	1.25												
16	1.31	1.93	1.29												
17	1.19	2.36	1.37												
18	1.35	2.13	1.29												
19	1.07	2.02	1.14	238	2124	138	1231	7	62	271	2418	110	982	13	116
20	1.19	2.05	1.37	382	3791	171	1697	6	60	352	3493	116	1151	12	119
21	1.13	2.25	1.26	409	3854	162	1527	6	57	192	1809	78	735	7	66
22	1.24	2.27	1.35												
23	1.35	2.10	1.55												
24	1.42	2.24	1.61												
25	1.20	1.28	1.37												
26	1.16	2.08	1.32	297	2873	151	1461	5	48	338	3270	110	1064	8	77
27	1.14	1.94	1.29	327	3109	196	1863	6	57	313	2976	94	894	7	67
28	1.21	1.89	1.35	373	3764	252	2543	6	61	304	3068	111	1120	10	101
29	1.20	1.75	1.37												
30	1.36	1.79	1.61												
31															
TOTAL	37.49		40.59		36808		19856		683		31986		11132		993
AVG	1.25	1.99	1.35	313	3067	168	1655	6	57	274	2665	94	928	9	83
MAX	1.73	2.36	1.97	409	3951	252	2543	8	80	352	3493	150	1651	16	119
MIN	0.86	1.28	1.00	217	1556	117	839	3	33	192	1800	43	420	3	32

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.36	2.31	1.49												
2	1.14	2.07	1.26												
3	1.56	2.29	1.70	640	9074	132	1871	4	57	959	13597	96	1361	4	57
4	1.21	1.85	1.30	676	7329	164	1778	5	54	914	9910	132	1431	3	33
5	0.98	2.23	1.08	519	4675	151	1360	4	36	761	6854	94	847	6	54
6	1.40	1.78	1.53												
7	1.25	1.78	1.39												
8	1.21	2.33	1.32												
9	1.35	2.01	1.52												
10	1.15	1.81	1.25	374	3899	200	2085	6	63	350	3649	113	1178	12	125
11	1.25	1.83	1.38	203	2336	151	1738	3	35	296	3407	197	2267	22	253
12	1.09	1.78	1.20	225	2252	152	1521	4	40	244	2442	127	1271	10	100
13	1.10	1.71	1.25												
14	1.28	1.74	1.46												
15	1.21	2.32	1.36												
16	1.25	1.77	1.42												
17	0.89	1.77	1.01	358	3016	154	1297	6	51	421	3546	82	691	7	59
18	1.13	1.64	1.32	563	6198	205	2257	5	55	691	7607	110	1211	6	66
19	1.09	1.67	1.23	493	5057	185	1898	5	51	537	5509	94	964	8	82
20	1.15	1.75	1.30												
21	1.38	1.84	1.55												
22	1.17	2.70	1.30												
23	1.07	1.64	1.12												
24	1.12	1.64	1.37	397	4536	176	2011	7	80	364	4159	51	583	5	57
25	0.98	1.49	1.11	314	2907	153	1416	5	46	231	2138	61	565	3	28
26	0.99	1.61	1.18	359	3533	163	1604	5	49	335	3297	44	433	6	59
27	1.10	1.71	1.27												
28	0.95	1.67	1.09												
29	1.12	2.09	1.34												
30	1.06	1.70	1.30												
31	0.79	1.80	0.88	446	3273	168	1233	10	73	1387	10179	67	492	7	51
TOTAL	35.78		40.28		58085		22070		690		76294		13293		1024
AVG	1.15	1.9	1.30	428	4468	166	1698	5	53	576	5869	98	1023	8	79
MAX	1.56	2.7	1.70	676	9074	205	2257	10	80	1387	13597	197	2267	22	253
MIN	0.79	1.5	0.88	203	2252	132	1233	3	35	231	2138	44	433	3	28

APPENDIX D

COST ESTIMATE

Opinion of Probable Project Costs

BANNER
Engineering | Architecture | Surveying
Banner Associates, Inc. | 2307 W 57th St, Ste 102
Sioux Falls, South Dakota 57108
Toll Free | 1.855.323.6342
www.bannerassociates.com

Location: Pierre, SD
Date: February 10, 2015
Project: Wastewater Treatment Study
BAI 21693.00

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$140,000	$145,000
Primary Clarifier Rehabilitation					
2	Remove Primary Clarifier Drive, Launders, Bridge, etc.	2	Ea	$6,000	$12,000
3	Tank Cleaning and Debris Removal	1	Lump Sum	$1,500	$1,500
4	Remove & Replace Primary Clarifier Aluminum Dome	2	Ea	$9,000	$18,000
5	60' diam SS Primary Clarifier Drive, Launders, Bridge, etc.	2	Ea	$326,250	$652,500
6	Concrete Special Coatings Repair	1	Lump Sum	$100,000	$100,000
7	Concrete Testing & Repair	1	Lump Sum	$20,000	$20,000
8	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$809,000
Grit Removal Rehabilitation					
9	Remove Existing Grit Removal and Classifier Equipment	1	Lump Sum	$4,500	$4,500
10	Tank/Channel Cleaning and Debris Removal	1	Lump Sum	$750	$750
11	Grit Removal and Grit Classifer Equipment	1	Lump Sum	$198,000	$198,000
12	Pipe and Valve Replacement	1	Lump Sum	$74,679	$74,679
13	Concrete Special Coatings Repair	1	Lump Sum	$35,000	$35,000
14	Concrete Testing & Repair	1	Lump Sum	$50,000	$50,000
15	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$368,000
Air Line Replacement (Blower Building to Air Lift Station)					
16	Remove Existing Piping/Supports/Equipment	1	Lump Sum	$5,000	$5,000
17	Double Link Seal for 14" Wall Sleeve	1	EA	$1,200	$1,200
18	10" Flexible Expansion Joint	3	EA	$800	$2,400
19	Thrust Blocks	1	Lump Sum	$1,800	$1,800
20	10" MJ DI Pipe	180	LF	$35	$6,300
21	10" MJ Long Body Sleeve	2	EA	$820	1640
22	10" MJ 45 Deg Bend DIP	2	EA	$410	$820
23	10" MJ 90 Deg Bend DIP	3	EA	$470	$1,410
24	Pipe Bedding Material	54	TONS	$35	$1,890
25	Brick Exterior/Surface Repair	1	Lump Sum	$1,200	$1,200
26	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$29,000
				Contingencies (10% Construction Costs)	$135,100
				Opinion of Probable Construction Costs	$1,486,100
				Engineering, Surveying, and Construction Services =	$256,200
				Administration and Legal =	$29,800
				Opinion of Total Project Costs (2015) =	**$1,772,100**

Opinion of Probable
Project Cost - Phase II

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	**Div. 01 - General Requirements**					
2		- Mobilization, Bonds and Insurance	1	L.S.	$130,400	$130,400
3		- 20% Conceptual Project Contingencies	1	L.S.	$286,700	$286,700
4						
5	**Div. 02 - Existing Conditions**					
6	02 4119	Selective Demolition				
7		- Miscellaneous Site Demolition	1	L.S.	$5,000	$5,000
8						
9	**Div. 03 - Concrete**					
10	03 3053	Cast-In-Place Concrete				
11		- Disinfection Slabs	75	C.Y.	$600	$45,000
12		- Disinfection Walls	135	C.Y.	$750	$101,250
13		- Disinfection Channel Concrete Fill	4	C.Y.	$400	$1,600
14						
15	03 4100	Precast Structural Concrete				
16		- Building Roof Corefloor	1,125	S.F.	$31	$34,875
17						
18	03 4500	Precast Architectural Concrete				
19		- Building Walls	1,800	S.F.	$65	$117,000
20						
21	**Div. 04 - Masonry**					
22	04 2000	Unit Masonry	250	S.F.	$20	$5,000
23						
24	**Div. 05 - Metals**					
25	05 5000	Metal Fabrications	1	L.S.	$5,000	$5,000
26	05 5100	Metal Stairs	1	Each	$5,500	$5,500
27	05 5213	Pipe and Tube Railings - Handrails	20	L.F.	$60	$1,200
28	05 5300	Metal Gratings & Channel Covers	384	S.F.	$170	$65,280
29						
30	**Div. 06 - Wood, Plastics and Composites**					
31	06 1053	Miscellaneous Rough Carpentry	1	L.S.	$2,400	$2,400
32						
33	**Div. 07 - Thermal and Moisture Protection**					
34	07 1613	Dampproofing	550	S.F.	$5.30	$2,915
35	07 2100	Thermal Insulation	1,500	S.F.	$4.20	$6,300
36	07 5323	EPDM Roofing	1,500	S.F.	$16.30	$24,450
37	07 6200	Sheet Metal Flashing and Trim	1	L.S.	$5,775	$5,775
38	07 9200	Joint Sealants	1	L.S.	$2,310	$2,310
39						

Opinion of Probable Project Cost - Phase II

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
40	**Div. 08 - Openings**					
41	08 1116	Aluminum Doors and Frames	3	Each	$3,500	$10,500
42	08 7100	Door Hardware	3	Each	$2,900	$8,700
43						
44	**Div. 22 - Plumbing**					
45	22 0000	Plumbing Improvements	1	L.S.	$31,500	$31,500
46						
47	**Div. 23 - HVAC**					
48	23 0000	Mechanical Improvements	1	L.S.	$31,500	$31,500
49						
50	**Div. 26 - Electrical**					
51	26 0000	Electrical Improvements	1	L.S.	$63,000	$63,000
52						
53	**Div. 31 - Earthwork**					
54	31 1000	Site Clearing	1	L.S.	$5,000	$5,000
55	31 1500	Stormwater Pollution Prevention Requirements	1	L.S.	$5,000	$5,000
56	31 2000	Earth Moving				
57		- Disinfection Excavation	2,000	C.Y. (CV)	$12.00	$24,000
58		- Disinfection Engineered Fill	1,150	Ton	$20.00	$23,000
59		- Disinfection Native Backfill	1,750	C.Y. (LV)	$15.00	$26,250
60						
61	**Div. 32 - Exterior Improvements**					
62	32 1313	Paving	1	L.S.	$7,500	$7,500
63	32 9200	Turf and Grasses	1.0	Acre	$2,700	$2,700
64						
65	**Div. 33 - Utilities**					
66	33 4150	Site Piping				
67		- Process Site Piping	1	L.S.	$109,000	$109,000
68						
69	**Div. 40 - Process Integration**					
70	40 0000	Process Integration	1	L.S.	$21,000	$21,000
71	40 9100	Primary Process Measurement Devices	1	L.S.	$5,300	$5,300
72						
73	**Div. 41 - Material Handling Equipment**					
74	41 2223	Jib Crane	1	Each	$3,700	$3,700
75						

Opinion of Probable Project Cost - Phase II

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
76	**Div. 44 - Process Piping**					
77	44 6013	Process Piping and Valves				
78		- Disinfection Piping	1	L.S.	$2,500	$2,500
79		- Aluminum Slide Gates	4	Each	$5,200	$20,800
80						
81	**Div. 46 - Wastewater Equipment**					
82	46 6653	Open Channel UV System	1	Each	$365,200	$365,200
83		Ancillary Equipment Repalcement	1	L.S.	$106,000	$106,000
					Opinion of Probable Construction Costs =	$1,721,000
					Adminsitration and Legal =	$34,500
					Engineering, Construction Administration and Observation =	$292,600
					Opinion of Probable Project Costs =	**$2,049,000**

Opinion of Probable
Project Cost - UV Disinfection

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	**Div. 01 - General Requirements**					
2		- Mobilization, Bonds and Insurance	1	L.S.	$119,800	$119,800
3		- 20% Conceptual Project Contingencies	1	L.S.	$263,400	$263,400
4						
5	**Div. 02 - Existing Conditions**					
6	02 4119	Selective Demolition				
7		- Miscellaneous Site Demolition	1	L.S.	$5,000	$5,000
8						
9	**Div. 03 - Concrete**					
10	03 3053	Cast-In-Place Concrete				
11		- Disinfection Slabs	75	C.Y.	$600	$45,000
12		- Disinfection Walls	135	C.Y.	$750	$101,250
13		- Disinfection Channel Concrete Fill	4	C.Y.	$400	$1,600
14						
15	03 4100	Precast Structural Concrete				
16		- Building Roof Corefloor	1,125	S.F.	$31	$34,875
17						
18	03 4500	Precast Architectural Concrete				
19		- Building Walls	1,800	S.F.	$65	$117,000
20						
21	**Div. 04 - Masonry**					
22	04 2000	Unit Masonry	250	S.F.	$20	$5,000
23						
24	**Div. 05 - Metals**					
25	05 5000	Metal Fabrications	1	L.S.	$5,000	$5,000
26	05 5100	Metal Stairs	1	Each	$5,500	$5,500
27	05 5213	Pipe and Tube Railings - Handrails	20	L.F.	$60	$1,200
28	05 5300	Metal Gratings & Channel Covers	384	S.F.	$170	$65,280
29						
30	**Div. 06 - Wood, Plastics and Composites**					
31	06 1053	Miscellaneous Rough Carpentry	1	L.S.	$2,400	$2,400
32						
33	**Div. 07 - Thermal and Moisture Protection**					
34	07 1613	Dampproofing	550	S.F.	$5.30	$2,915
35	07 2100	Thermal Insulation	1,500	S.F.	$4.20	$6,300
36	07 5323	EPDM Roofing	1,500	S.F.	$16.30	$24,450
37	07 6200	Sheet Metal Flashing and Trim	1	L.S.	$5,775	$5,775
38	07 9200	Joint Sealants	1	L.S.	$2,310	$2,310
39						

Opinion of Probable
Project Cost - UV Disinfection

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
40	**Div. 08 - Openings**					
41	08 1116	Aluminum Doors and Frames	3	Each	$3,500	$10,500
42	08 7100	Door Hardware	3	Each	$2,900	$8,700
43						
44	**Div. 22 - Plumbing**					
45	22 0000	Plumbing Improvements	1	L.S.	$31,500	$31,500
46						
47	**Div. 23 - HVAC**					
48	23 0000	Mechanical Improvements	1	L.S.	$31,500	$31,500
49						
50	**Div. 26 - Electrical**					
51	26 0000	Electrical Improvements	1	L.S.	$63,000	$63,000
52						
53	**Div. 31 - Earthwork**					
54	31 1000	Site Clearing	1	L.S.	$5,000	$5,000
55	31 1500	Stormwater Pollution Prevention Requirements	1	L.S.	$5,000	$5,000
56	31 2000	Earth Moving				
57		- Disinfection Excavation	2,000	C.Y. (CV)	$12.00	$24,000
58		- Disinfection Engineered Fill	1,150	Ton	$20.00	$23,000
59		- Disinfection Native Backfill	1,750	C.Y. (LV)	$15.00	$26,250
60						
61	**Div. 32 - Exterior Improvements**					
62	32 1313	Paving	1	L.S.	$7,500	$7,500
63	32 9200	Turf and Grasses	1.0	Acre	$2,700	$2,700
64						
65	**Div. 33 - Utilities**					
66	33 4150	Site Piping				
67		- Process Site Piping	1	L.S.	$109,000	$109,000
68						
69	**Div. 40 - Process Integration**					
70	40 0000	Process Integration	1	L.S.	$21,000	$21,000
71	40 9100	Primary Process Measurement Devices	1	L.S.	$5,300	$5,300
72						
73	**Div. 41 - Material Handling Equipment**					
74	41 2223	Jib Crane	1	Each	$3,700	$3,700
75						

Opinion of Probable
Project Cost - UV Disinfection

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
76	**Div. 44 - Process Piping**					
77	44 6013	Process Piping and Valves				
78		- Disinfection Piping	1	L.S.	$2,500	$2,500
79		- Aluminum Slide Gates	4	Each	$5,200	$20,800
80						
81	**Div. 46 - Wastewater Equipment**					
82	46 6653	Open Channel UV System	1	Each	$365,200	$365,200
					Opinion of Probable Construction Costs =	$1,581,000
					Adminsitration and Legal =	$31,700
					Engineering, Construction Administration and Observation =	$268,800
					Opinion of Probable Project Costs =	**$1,882,000**

Opinion of Probable
Project Cost - Liquid Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	**Div. 01 - General Requirements**					
2		- Mobilization, Bonds and Insurance	1	L.S.	$131,400	$131,400
3		- 20% Conceptual Project Contingencies	1	L.S.	$289,000	$289,000
4						
5	**Div. 02 - Existing Conditions**					
6	02 4119	Selective Demolition				
7		- Miscellaneous Site Demolition	1	L.S.	$5,000	$5,000
8						
9	**Div. 03 - Concrete**					
10	03 3053	Cast-In-Place Concrete				
11		- Disinfection Slabs	230	C.Y.	$600	$138,000
12		- Disinfection Walls	430	C.Y.	$750	$322,500
13		- Disinfection Channel Concrete Fill	4	C.Y.	$400	$1,600
14						
15	03 4100	Precast Structural Concrete				
16		- Building Roof Corefloor	1,125	S.F.	$31	$34,875
17						
18	03 4500	Precast Architectural Concrete				
19		- Building Walls	1,800	S.F.	$65	$117,000
20						
21	**Div. 04 - Masonry**					
22	04 2000	Unit Masonry	500	S.F.	$20	$10,000
23						
24	**Div. 05 - Metals**					
25	05 5000	Metal Fabrications	1	L.S.	$5,000	$5,000
26	05 5100	Metal Stairs	2	Each	$5,500	$11,000
27	05 5213	Pipe and Tube Railings - Handrails	20	L.F.	$60	$1,200
28	05 5213	Pipe and Tube Railings - Guardrails	230	L.F.	$120	$27,600
29						
30	**Div. 06 - Wood, Plastics and Composites**					
31	06 1053	Miscellaneous Rough Carpentry	1	L.S.	$2,400	$2,400
32						
33	**Div. 07 - Thermal and Moisture Protection**					
34	07 1613	Dampproofing	550	S.F.	$5.30	$2,915
35	07 2100	Thermal Insulation	1,500	S.F.	$4.20	$6,300
36	07 5323	EPDM Roofing	1,500	S.F.	$16.30	$24,450
37	07 6200	Sheet Metal Flashing and Trim	1	L.S.	$5,775	$5,775
38	07 9200	Joint Sealants	1	L.S.	$2,310	$2,310
39						

Opinion of Probable
Project Cost - Liquid Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
40	**Div. 08 - Openings**					
41	08 1116	Aluminum Doors and Frames	7	Each	$3,500	$24,500
42	08 7100	Door Hardware	7	Each	$2,900	$20,300
43						
44	**Div. 22 - Plumbing**					
45	22 0000	Plumbing Improvements	1	L.S.	$31,500	$31,500
46						
47	**Div. 23 - HVAC**					
48	23 0000	Mechanical Improvements	1	L.S.	$31,500	$31,500
49						
50	**Div. 26 - Electrical**					
51	26 0000	Electrical Improvements	1	L.S.	$63,000	$63,000
52						
53	**Div. 31 - Earthwork**					
54	31 1000	Site Clearing	1	L.S.	$5,000	$5,000
55	31 1500	Stormwater Pollution Prevention Requirements	1	L.S.	$5,000	$5,000
56	31 2000	Earth Moving				
57		- Disinfection Excavation	3,900	C.Y. (CV)	$12.00	$46,800
58		- Disinfection Engineered Fill	850	Ton	$20.00	$17,000
59		- Disinfection Native Backfill	2,400	C.Y. (LV)	$15.00	$36,000
60						
61	**Div. 32 - Exterior Improvements**					
62	32 1313	Paving	1	L.S.	$36,300	$36,300
63	32 9200	Turf and Grasses	1.0	Acre	$2,700	$2,700
64						
65	**Div. 33 - Utilities**					
66	33 4150	Site Piping				
67		- Process Site Piping	1	L.S.	$109,000	$109,000
68						
69	**Div. 40 - Process Integration**					
70	40 0000	Process Integration	1	L.S.	$52,500	$52,500
71	40 9100	Primary Process Measurement Devices	1	L.S.	$5,300	$5,300
72						

Opinion of Probable
Project Cost - Liquid Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
73	**Div. 44 - Process Piping**					
74	44 6013	Process Piping and Valves				
75		- Disinfection Piping	1	L.S.	$2,500	$2,500
76		- Aluminum Slide Gates	2	Each	$5,200	$10,400
77						
78	**Div. 46 - Wastewater Equipment**					
79	46 3383	Liquid Chlorination/Dechlorination Systems	1	L.S.	$96,200	$96,200
					Opinion of Probable Construction Costs =	$1,734,000
					Adminsitration and Legal =	$34,700
					Engineering, Construction Administration and Observation =	$294,800
					Opinion of Probable Project Costs =	**$2,064,000**

Opinion of Probable
Project Cost - Gas Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	**Div. 01 - General Requirements**					
2		- Mobilization, Bonds and Insurance	1	L.S.	$123,500	$123,500
3		- 20% Conceptual Project Contingencies	1	L.S.	$271,600	$271,600
4						
5	**Div. 02 - Existing Conditions**					
6	02 4119	Selective Demolition				
7		- Miscellaneous Site Demolition	1	L.S.	$5,000	$5,000
8						
9	**Div. 03 - Concrete**					
10	03 3053	Cast-In-Place Concrete				
11		- Disinfection Slabs	230	C.Y.	$600	$138,000
12		- Disinfection Walls	430	C.Y.	$750	$322,500
13		- Disinfection Channel Concrete Fill	4	C.Y.	$400	$1,600
14						
15	03 4100	Precast Structural Concrete				
16		- Building Roof Corefloor	1,125	S.F.	$31	$34,875
17						
18	03 4500	Precast Architectural Concrete				
19		- Building Walls	1,800	S.F.	$65	$117,000
20						
21	**Div. 04 - Masonry**					
22	04 2000	Unit Masonry	500	S.F.	$20	$10,000
23						
24	**Div. 05 - Metals**					
25	05 5000	Metal Fabrications	1	L.S.	$5,000	$5,000
26	05 5213	Pipe and Tube Railings - Guardrails	230	L.F.	$120	$27,600
27						
28	**Div. 06 - Wood, Plastics and Composites**					
29	06 1053	Miscellaneous Rough Carpentry	1	L.S.	$2,400	$2,400
30						
31	**Div. 07 - Thermal and Moisture Protection**					
32	07 1613	Dampproofing	550	S.F.	$5.30	$2,915
33	07 2100	Thermal Insulation	1,500	S.F.	$4.20	$6,300
34	07 5323	EPDM Roofing	1,500	S.F.	$16.30	$24,450
35	07 6200	Sheet Metal Flashing and Trim	1	L.S.	$5,775	$5,775
36	07 9200	Joint Sealants	1	L.S.	$2,310	$2,310
37						
38	**Div. 08 - Openings**					
39	08 1116	Aluminum Doors and Frames	5	Each	$3,500	$17,500
40	08 7100	Door Hardware	5	Each	$2,900	$14,500

Opinion of Probable
Project Cost - Gas Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

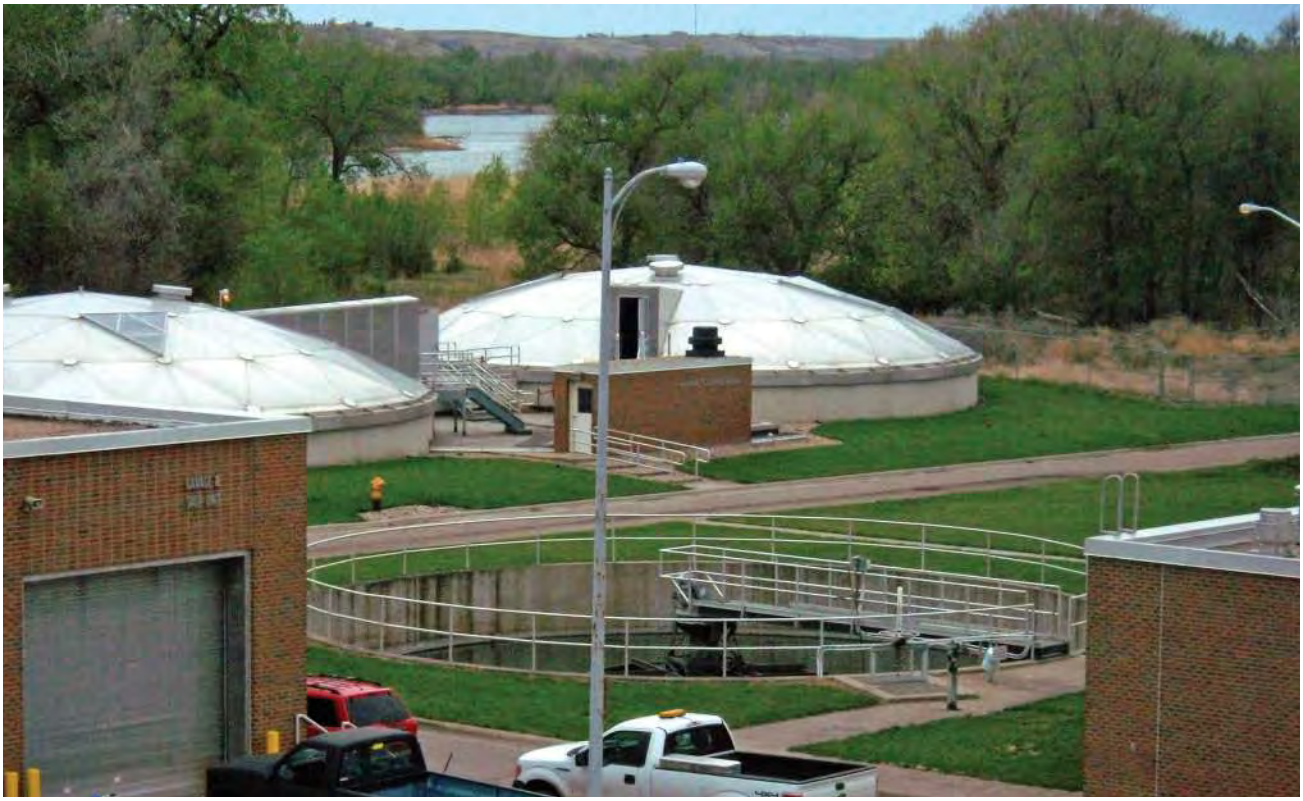
LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
41						
42	**Div. 22 - Plumbing**					
43	22 0000	Plumbing Improvements	1	L.S.	$42,000	$42,000
44						
45	**Div. 23 - HVAC**					
46	23 0000	Mechanical Improvements	1	L.S.	$31,500	$31,500
47						
48	**Div. 26 - Electrical**					
49	26 0000	Electrical Improvements	1	L.S.	$73,500	$73,500
50						
51	**Div. 31 - Earthwork**					
52	31 1000	Site Clearing	1	L.S.	$5,000	$5,000
53	31 1500	Stormwater Pollution Prevention Requirements	1	L.S.	$5,000	$5,000
54	31 2000	Earth Moving				
55		- Disinfection Excavation	3,900	C.Y. (CV)	$12.00	$46,800
56		- Disinfection Engineered Fill	850	Ton	$20.00	$17,000
57		- Disinfection Native Backfill	2,400	C.Y. (LV)	$15.00	$36,000
58						
59	**Div. 32 - Exterior Improvements**					
60	32 1313	Paving	1	L.S.	$36,300	$36,300
61	32 9200	Turf and Grasses	1.0	Acre	$2,700	$2,700
62						
63	**Div. 33 - Utilities**					
64	33 4150	Site Piping				
65		- Process Site Piping	1	L.S.	$109,000	$109,000
66						
67	**Div. 40 - Process Integration**					
68	40 0000	Process Integration	1	L.S.	$52,500	$52,500
69	40 9100	Primary Process Measurement Devices	1	L.S.	$5,300	$5,300
70						
71	**Div. 41 - Material Handling Equipment**					
72	41 2223	Monorail Hoist	2	Each	$10,500	$21,000
73						

Opinion of Probable
Project Cost - Gas Chlor/Dechlor

Location: Pierre, South Dakota
Date: March 7, 2016
Project: Pierre WWTF Disinfection Improvements
BAI 22693.00.20

LINE NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
74	**Div. 44 - Process Piping**					
75	44 6013	Process Piping and Valves				
76		- Disinfection Piping	1	L.S.	$2,500	$2,500
77		- Aluminum Slide Gates	2	Each	$5,200	$10,400
78						
79	**Div. 46 - Wastewater Equipment**					
80	46 3311	Gas Chlorination/Dechlorination Systems				
81		- Chlorination/Dechlorination Feed System	1	L.S.	$91,700	$91,700
82		- Chlorine Gas Scrubber System	1	Each	$195,900	$195,900
					Opinion of Probable Construction Costs =	$1,917,000
					Adminsitration and Legal =	$38,400
					Risk Management Plan =	$15,000
					Engineering, Construction Administration and Observation =	$325,900
					Opinion of Probable Project Costs =	**$2,297,000**

FACILITY PLAN



Pierre Wastewater Treatment Plant
Specific Equipment Replacement Facility Plan

(Primary Clarifier, Grit Removal, Airlift Pump Feed Pipe)

Pierre, SD

February 2015

Submitted by

Banner Associates, Inc.
www.bannerassociates.com

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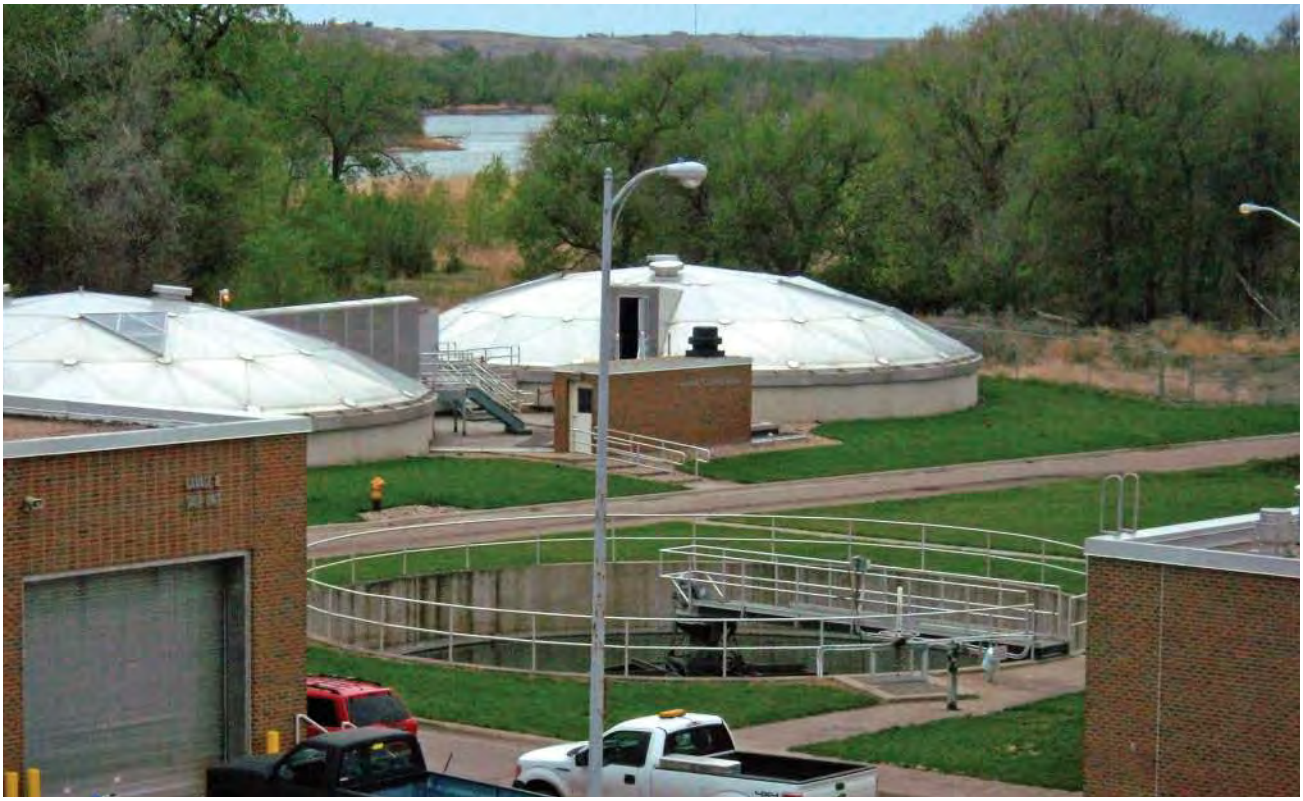
FACILITY PLAN

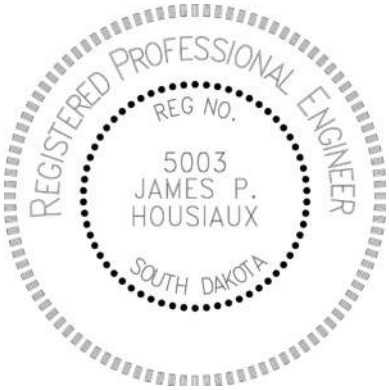


Pierre Wastewater Treatment Plant
Specific Equipment Replacement Facility Plan

(Primary Clarifier, Grit Removal, Airlift Pump Feed Pipe)

Pierre, SD

February 2015



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SECTION 1: INTRODUCTION, AUTHORIZATION, PURPOSE, AND REPORT ORGANIZATION

1.1. INTRODUCTION, AUTHORIZATION, AND PURPOSE

After the completion of the 2014 Wastewater Treatment Plant System Analysis by Banner Associates, the City of Pierre requested a proposal and agreement for the preparation of a Wastewater Facilities Plan which would address the items identified to be in need of immediate replacement. This Wastewater Facilities Plan is in response to deteriorated pieces of equipment at the Pierre Wastewater Treatment Plant. The facilities evaluation will examine alternatives to effectively and reliably replace the equipment to continue to treat the current and projected future flows and loads.

Preparation of the wastewater system facilities plan was authorized by the City of Pierre in an Employment Agreement for Engineering Services dated November 7, 2014 with Banner Associates, Inc.

The Wastewater System Facilities Plan will serve as a guide for preparation of capital improvements plans for the wastewater treatment plant for the next several years. The scope of this report will address the following:

- Review of the current Pierre Surface Water Discharge (SWD) and Biosolids Management Permits;
- Preparation of an Environmental Information Document;
- Evaluation of the present conditions and future needs;
- Evaluation and alternative selection for the grit removal system, primary clarifiers, and compressed air pipeline; and
- Preparation of a plan for improvements including cost estimates, implementation schedule, and probable impacts on sewer rates.

1.2. ORGANIZATION OF THE REPORT

This report is organized into a total of six sections. The topics covered in each of the sections are summarized as follows:

Section 1	Introduction, Authorization, Purpose, and Report Organization
Section 2	Permit Conditions and Requirements
Section 3	Environmental Information Document
Section 4	Evaluation of Present Conditions and Future Needs
Section 5	Wastewater Treatment Alternatives
Section 6	Recommendations and Capital Improvements Plan

1.3. ABBREVIATIONS

ARSD	Administrative Rules of South Dakota
ATAD	autothermal thermophilic aerobic digestion
BOD_5	Biochemical Oxygen Demand (5-day)
fps	feet per second
gpcd	gallons per capita per day
gpm	gallons per minute
I/I	infiltration and inflow
MGD	million gallons per day
NWI	National Wetlands Inventory
SDDENR	South Dakota Department of Environment & Natural Resources
SWD	surface water discharge
TSS	Total Suspended Solids
VAR	vector attraction reduction
WET	whole effluent toxicity
WWTP	wastewater treatment plant

END OF SECTION 1

SECTION 2: PERMIT CONDITIONS AND REQUIREMENTS

The City of Pierre possesses two permits that are reviewed in this section. They include a Surface Water Discharge (SWD) Permit issued by the State of South Dakota and a Biosolids Management Permit that provides authorization to landfill dispose sludge generated at the Pierre wastewater treatment plant (WWTP).

2.1 SURFACE WATER DISCHARGE PERMIT

The City of Pierre currently possesses a Surface Water Discharge (SWD) Permit from the South Dakota Department of Environmental and Natural Resources (SDDENR) permit number SD0020176. The current discharge permit became effective July 01, 2007 and is in effect until a new one is generated by the SDDENR. This permit was scheduled to expire on December 31, 2011 but was administratively extended by the SDDENR. The current SWD permit authorizes the discharge of wastewater effluent from the Pierre WWTP to Lake Sharpe of the Missouri River (Outfall 001). The current SDDENR SWD permit and associated Statement of Basis for the City of Pierre are presented in Appendix A.

2.1.1 Effluent limits: The City's current permit allows discharges of treated WWTP effluent via pipeline to Lake Sharpe of the Missouri River. The permit requires that the City's WWTP operations personnel perform routine monitoring to verify compliance with various parameters regulated under the permit. The wastewater quality parameters regulated by the permit include biochemical oxygen demand (BOD_5), total suspended solids (TSS), oil and grease, fecal coliforms, total coliforms, total residual chlorine, pH, and acute whole effluent toxicity (WET). The specific permit limits in effect at this time are presented in Table 2-1: Effluent Limitations at the Pierre WWTP.

Table 2-1: Effluent Limitations at the Pierre WWTP

Effluent Characteristic	Effluent Limit		
	30-Day Average [1]	7-Day Average	Daily Maximum
BOD_5, mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
Fecal Coliforms, no./100 mL [2] (May - September 30)	200	N/A	400
Total Coliforms, no./100mL [3]	5,000	N/A	20,000
Oil and Grease, mg/L	N/A	N/A	10
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	N/A	N/A	0.019
The pH of the discharge shall not be less than 6.6 nor greater than 8.3 in any sample.			
There shall be no Acute Whole Effluent Toxicity in the discharge, as measured by the WET test.			
Percentage Removal Requirements (TSS and BOD_5 Limit): In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of thirty (30) consecutive days shall not exceed fifteen (15) percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).			

[1] See Definitions

[2] Fecal Coliform organisms from May 1 to September 30 shall not exceed a concentration of 1,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 2,000 per 100 milliliters in any one sample from May 1 to September 30.

[3] Total Coliform organisms shall not be exceed a MPN of MF of 5,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 20,000 per 100 milliliters in any one sample.

2.1.2 Self-Monitoring Requirements: In addition to the parameters regulated in Table 2-1, the City of Pierre's SWD permit also requires the monitoring and reporting of rate of discharge, influent BOD_5, influent TSS, ammonia-nitrogen, dissolved oxygen, temperature, molybdenum, and the parameters listed in the Administrative Rules of South Dakota (ARSD), Section 74:52:02:42. All wastewater characteristics that must be monitored and reported under the SWD

permit are listed in Table 2-2, as well as their required testing frequency, reporting values, and sample type. These characteristics must be monitored for all discharges, unauthorized releases, and sanitary sewer overflows.

Table 2-2: SWD Permit Self-Monitoring Requirements at the Pierre WWTP

Effluent Characteristic	Frequency	Reporting Values [1]	Sample Type [1]
Rate of Discharge, MGD	Continuous	Daily Maximum; 30-day Average	Instantaneous
pH, Standard Units	Daily	Daily Minimum; Daily Maximum	Instantaneous [2]
Oil and Grease, mg/L [3]	Daily	Presence or absence of sheen; Daily Maximum	Visual/Grab
BOD_5, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
BOD_5, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Total Suspended Solids, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
Total Suspended Solids, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Fecal Coliform, no./100 mL (May 1 - September 30)	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Total Coliform, no./100 mL	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Ammonia-Nitrogen, mg/L (as N) [6]	Weekly	Daily Maximum; 30-day Average	Grab
Total Residual Chlorine, mg/L (Required only if effluent is chlorinated)	Daily	Daily Maximum [7]	Grab
Dissolved Oxygen, mg/L	Weekly	Daily Minimum	Grab
Water Temperature, °C	Weekly	Daily Maximum; 30-day Average	Instantaneous [8]
Percent Removal (TSS and BOD_5)	Monthly	30-day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [9]	Pass/Fail	Grab
Parameters listed in ARSD, Section 74:52:02:42 and Molybdenum	Annually	Actual Results	As Required [10]

[1] See Definitions

[2] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[3] Oil and grease shall be visually monitored during discharge. In the event that an oil sheen or floating oil is observed during discharge, grab samples shall be taken immediately, analyzed and reported.

[4] The percent removal between the influent and effluent values for this parameter shall also be reported.

[5] For fecal and total coliforms, if a minimum of five samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. *This sampling protocol for fecal coliforms, only applies if the discharge occurs between May 1 and September 30.*

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[7] EPA considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "0" shall be used for reporting and averaging purposes.

[8] The water temperature of the effluent shall be taken as a field measurement at the time of sampling. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[9] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[10] See Section 2.1 for sampling requirements.

The SWD permit outlines the testing procedure required for the whole effluent toxicity (WET) test for acute toxicity. The City of Pierre is required to conduct this test at least once per calendar quarter, with samples collected on a two day progression (i.e., if the first quarterly sample is collected on a Wednesday, during

the next quarter sampling shall be on a Friday, etc.). The WET test for acute toxicity shall follow the procedure from the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, October 2002, EPA-821-R-02-012, and the "Region VIII EPA NPDES Acute Test Conditions – Static Renewal Whole Effluent Toxicity Test." If conflicts arise, the Region VIII document should be used. The City needs to conduct an acute 96-hour static toxicity test using *Pimephales promelas* (fathead minnows) and an acute 48-hour static toxicity test using *Ceriodaphnia dubia* (daphia). The WWTP effluent is considered to be toxic if 50 percent or more mortality is observed at any effluent concentration for either species. If more than 10 percent mortality occurs in the control group, the test needs to be repeated until satisfactory survival is achieved in the control group. See Section 1.5 of the City of Pierre's SWD permit for a detailed discussion on the procedures to be followed if toxicity occurs during a WET test.

2.2 BIOSOLIDS MANAGEMENT PERMIT

The City of Pierre currently possesses a Biosolids Management permit from the SDDENR, permit number SDL020176. The permit became effective April 01, 2013 and is in effect until March 31, 2018. The current Biosolids Management permit authorizes the landiflling of biosolids from the Pierre WWTP (Outfall 201). The current SDDENR Biosolids Management permit and associated Statement of Basis for the City of Pierre are presented in Appendix B.

2.2.1 Biosolids Limits: Biosolids produced at the City of Pierre's WWTP are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered with a belt filter press, and finally disposed of at the City's municipal landfill. All biosolids produced and disposed of at an appropriate permitted landfill shall meet the following requirements:

2.2.1.1 Chemical: Biosolids are required to pass the paint filter and Toxicity Characterization Leaching Procedure (TCLP) tests as well as any other tests required by the landfill.

2.2.1.2 Vector Attraction Reduction (VAR): The potential for attracting vectors, such as mosquitoes, must be reduced by the City of Pierre. To do this, the biosolids that are disposed of at a landfill need to be covered by soil or other material at the end of each operating day.

2.2.2 Self-Monitoring Requirements: In addition to the chemical and VAR requirements listed in Section 2.2.1, the City of Pierre's Biosolids Management permit also requires the monitoring and reporting of total solids and the total amount of biosolids disposed of in landfills. All biosolids characteristics that must be monitored and reported under the Biosolids Management permit are listed in Table 2-3, as well as their required testing frequency, reporting values, and sample type.

Table 2-3: Biosolids Self-Monitoring Requirements at the Pierre WWTP

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test [1]	Annually or prior to disposal at landfill	Pass or Fail	Grab
Toxicity Characterization Leaching Procedure (TCLP) [1]	Once every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

END OF SECTION 2

SECTION 3: ENVIRONMENTAL INFORMATION DOCUMENT

3.1 PROJECT AREA ENVIRONMENT

3.1.1 General Description of Project Area: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. The topography of the Pierre area ranges from rolling hills in the immediate vicinity of the river to relatively flat in areas at a distance of a mile or more from the river. The proposed treatment plant improvements associated with this Report will replace existing equipment that was found to be in poor condition during the 2014 Wastewater Treatment Plant System Analysis completed by Banner Associates, Inc. Expansion to increase the capacity of the treatment plant is not considered at this time since the current loadings are below the design capacity of the treatment plant as discussed in Subsection 4.2 of this report.

The existing WWTP includes screening, raw wastewater pumping, comminutors, grit removal, primary clarification, a trickling filter, activated sludge, final clarification, chlorine disinfection, sulfur dioxide dechlorination, aerobic digestion, and a belt filter press for dewatering of the biosolids before disposal. More details of the treatment processes can be found in Section 4 of this report. Effluent from the Pierre WWTP is continually discharged into the portion of the Missouri River known as Lake Sharpe. This discharge is authorized by the City's Surface Water Discharge (SWD) permit. The City of Pierre also possesses a Biosolids Management Permit which authorizes the disposal of treated biosolids. Both the SWD permit and the Biosolids Management permit are discussed in Section 2 of this report.

3.1.2 Historical, Cultural, and Archeological: The City of Pierre is located in the central region of South Dakota on the east bank of the Missouri River downstream of the Oahe Dam. Pierre is the Capitol of South Dakota and the county seat of Hughes County.

The City's transportation facilities include bus lines, the Rapid City, Pierre and Eastern (RCPE) Railroad, U.S. Highway No. 14 and No. 83, and S.D Highway No. 34. Airline service at the Pierre Regional Airport is provided by Great Lakes Airlines and multiple small commuter airlines.

The City of Pierre has established a strong economic base of agricultural trade, agricultural related industry, tourism, and retail business. Significant industrial, commercial and institutional establishments in the City of Pierre include the following:

- State Government
- Tourism, especially that related to hunting, fishing, and other outdoor recreation opportunities abundant in the area.
- Regional center for medical care services
- Regional center for shopping and commercial business
- Conventions

The development of the project will not adversely affect any sites listed in the register of National Historic Places. According to information available from the U.S. National Park Service, there are 28 registered historic places within the immediate vicinity of Pierre. The closest registered historic place to the existing WWTP is approximately 0.8 miles. Verification of historic sites may be requested from the South Dakota State Office of Cultural Preservation.

The land in the study area was originally rich in wild game and fur bearing animals. Prior to settlement, the area was frequented by nomadic Indians, fur trappers and traders. An archaeological review or inspection of the site will not be completed prior to initiation of construction since the proposed improvements will replace existing equipment only. No previously undisturbed soils will need to be disturbed during the construction phase of this project.

3.1.3 Floodplains, Wetlands, and Aquifers

3.1.3.1 Floodplains: The original wastewater treatment equipment that is proposed to be replaced was constructed above the 100 year flood elevation. The U.S. Army Corps of Engineers' "Flood Hazard Report - Missouri River" dated May, 1988 shows that the 100 year flood elevation for Lake Sharpe near La Framboise Island is approximately 1427.5. The "ice-affected" 100 year flood elevation is reported to be approximately 1428.5. These elevations are based on the datum used by the Corps of Engineers. The Pierre WWTP elevations are based on the City of Pierre elevation datum which is 2.56 ft. higher than the Corps of Engineer's datum. This means the 100 year "ice-affected" flood elevation at the wastewater treatment facility is 1431.06 on City of Pierre datum. Since this project involves replacing the internal primary clarifier and grit removal components, the elevations of the existing concrete tank structures will not be changed in any way. The water surface elevations within the treatment process are high enough to permit unobstructed discharge during high water conditions.

3.1.3.2 Wetlands: It is anticipated that construction of the proposed wastewater treatment plant improvements will not impact any area considered as

natural wetlands, as defined by the National Wetlands Inventory (NWI). All construction activity will take place within the extents of the existing facility.

3.1.3.3 Aquifers: The existing wastewater treatment plant is located over the Missouri River outwash aquifer. The aquifer is a shallow groundwater source for the City of Pierre as well as a number of irrigation systems in the area. The soil materials in the aquifer consist of fine-grained to coarse-grained glacial deposits of outwash. The aquifer thickness varies from less than 10 feet to more than 65 feet. The overburden soils consist of fine grained topsoil and lean clay materials. The aquifer is recharged primarily by movement of water from the Missouri River into the sand and gravel deposits.

3.1.4 Agricultural Lands: The proposed construction area will not affect agricultural lands. The land to be used for the proposed improvements is within the extents of the original wastewater treatment plant. The project will not have long term adverse impacts on agricultural land.

3.1.5 Wild and Scenic Rivers: The reach of the Missouri River near the existing treatment plant is controlled downstream by the Big Bend Dam at Fort Thompson and upstream by the Oahe Dam. The Missouri River at Pierre is a part of the mainstem reservoir system and is not a free flowing river. The area is heavily used as a recreational area for fishing, hunting, camping, boating, and other outdoor recreational activities. The construction of the improvements at the wastewater treatment plant is not expected to cause any permanent changes to the recreational use of the resources. The wastewater treatment

plant is screened from view from the river by trees standing between the treatment facility and the Missouri River.

3.1.6 Fish and Wildlife Resources: Fish and wildlife are abundant in the Pierre area and the tourism related to the fish and wildlife resources are a significant factor in the local economy. The impoundment of the Missouri River and the public lands in the area provide many opportunities for fishing, hunting, and other related activities.

3.1.6.1 Fish: Fish populations in the Missouri River impoundments are an important resource for the area and state. The species of fish found in the Missouri River impoundments and tributary creeks include walleye, lake trout, northern pike, perch, minnows, pan fish, sturgeon, paddlefish, catfish, bullheads, and assorted rough fish. The Missouri River is used for fishing throughout the year.

3.1.6.2 Wildlife

3.1.6.2.1 Aquatic and Semiaquatic Species: Hughes County and the study area lie within the central flyway of the north central United States which serves as a major migratory route for waterfowl. Commercial waterfowl hunting is widespread in the area and is an important source of income for numerous individuals in the Pierre area. The flyway is also known to be used by the whooping crane, an endangered species. The construction and operation of the WWTP improvements is not expected to have an impact on the migratory patterns of the waterfowl.

3.1.6.2.2 Terrestrial Species: Most species of wildlife which occur in eastern South Dakota are found in the proposed project area. Big game species are hunted with both gun and bow and include turkey, white-tailed deer, and mule deer. Furbearers in the area include fox, coyote, weasels, skunks, badgers, raccoons, squirrels, rabbits, and other wildlife during all seasons with moderate trapping taking place during the prime season.

Many bird species have been recorded by local bird clubs both during migration and also during nesting season. The pheasant population fluctuates but is generally above average compared to the rest of the state. They are heavily hunted each fall. Occasional coveys of partridge are also found.

3.1.6.3 Endangered Species: According to the U.S. Fish and Wildlife Service, endangered species known to occur within Hughes County include the whooping crane, bald, eagle, piping plover, least tern, and pallid sturgeon. The construction activities may limit the use of the trees by birds in the immediate vicinity of the construction site while construction activities are underway. No long term change to the area or impact on endangered species is expected as a result of the project.

3.1.7 Air Quality: The proposed project area and Hughes County in general have no major air quality problems. Local air quality problems occur due to odors from different sources such as wastewater treatment facilities, livestock feeding operations, manure pits, and numerous other sources. Dust storms also occur on occasion; particularly in dry years when inadequate soil cover has been

allowed to remain on the land surface. The proposed project is not expected to have any long term adverse impact on air quality on the area. The treatment plant improvements will not alter the present conditions regarding odors. There will be short-term impacts during construction due to fugitive dust and heavy equipment operation.

3.1.8 Water Quality and Quantity

3.1.8.1 Surface Water: The major surface water body near the existing WWTP and proposed improvements is the Lake Sharpe impoundment of the Missouri River. According to the 2014 South Dakota Integrated Report for Surface Water Quality Assessment, the beneficial use categories of Lake Sharpe of the Missouri River are as follows:

- (1) Domestic water supply
- (2) Coldwater permanent fish life propagation waters
- (7) Immersion recreation waters
- (8) Limited-contact recreation waters
- (9) Fish and wildlife propagation, recreation, and stock watering waters
- (10) Irrigation waters
- (11) Commerce and industry waters

The water quality requirements for the designated beneficial use categories are summarized in Table 3-1. The most restrictive beneficial use category is applied when determining water quality requirements for a discharge from a wastewater treatment facility.

Table 3-1: Beneficial Use Categories

Parameter	(1) Domestic Water Supply	(2) Coldwater Permanent Fish Life Propagation	(7) Immersion Contact Recreation	(8) Limited-Contact Recreation	(9) Fish & Wildlife Propagation, Stock Watering	(10) Irrigation	(11) Commerce and Industry
TDS, mg/L	1000				2,500		2,000
NO_3, mg/L as N	10.0				50		
pH, units	6.5 to 9.0	6.5 to 9.0			6.0 to 9.5		6.0 to 9.5
Coliform, total (per 100 mL)	5,000 (mean); 20,000 (single sample)						
Coliform, fecal (per 100 mL)			200 (mean); 400 (single sample)	1,000 (mean); 2,000 (single sample)			
Escherichia coli (per 100 mL)			126 (mean); 235 (single sample)	630 (mean); 1,178 (single sample)			
Barium, mg/L	1.0						
Chloride, mg/L	250	100					
Fluoride, mg/L	4.0						
Sulfate, mg/L	500						
Total Chlorine Res., mg/L		0.019 (acute) 0.011(chronic)			0.019 (acute) 0.011 (chronic)		
Nitrogen, Total Ammonia, mg/L as N		Equation-based standard					
Dissolved Oxygen, mg/L		≥6.0	≥5.0	≥5.0			
Undissoc. H_2S, mg/L		0.002					
TSS, mg/L		30					
Temp., °F		65					
Alkalinity, mg/L as $CaCO_3$					750		
Conductivity, mmhos/cm					4,000	2,500	
Sodium Adsorption Ratio						10	
Total Petrolium Hydrocarbons	≤ 1.0				≤ 10		
Oil and Grease					≤ 10		

3.1.9 Recreational Facilities: The Pierre wastewater treatment plant is located immediately adjacent to the softball complex used by the recreational leagues in the City of Pierre. Since this project will not consist of an expansion but rather an upgrade of select existing equipment, it is not anticipated that this project will interfere with the use of the softball complex.

3.2 PROJECT PURPOSE AND NEED

The proposed improvements will replace existing equipment at the Pierre WWTP that has reached the end of its useful life. The existing equipment proposed to be replaced is in bad condition and has the potential to fail which would cause multiple operational difficulties and potential problems with meeting the City of Pierre's SWD permit. The existing wastewater treatment plant is described in Section 4 of this report. The alternatives for upgrading the treatment plant are described in Section 7.

The proposed improvements will provide a treatment system with the reliability needed to handle the present and future flows and loads while meeting the requirements of the SWD permit as discussed in Subsection 2.1. The need for the project is demonstrated by the poor condition of the primary clarifier mechanisms and drives, grit removal equipment, and the leak that exists in the compressed air pipe between the blower building and the air lift pump station.

3.3 PROJECT IMPACT

3.3.1 Direct and Indirect Impacts on Environment: Previous portions of this section have addressed the impact of the proposed project on water quality, fish and wildlife, historical and archaeological sites and air quality. The remainder of this

section addresses other impacts of the proposed project and mitigation measures that may be necessary to limit adverse impacts.

3.3.1.1 Land Resources: Construction of the proposed improvements will require removal of existing primary clarifier and grit removal equipment, rehabilitation of the existing concrete tanks, and installation of new primary clarifier and grit removal equipment. Excavation and stock piling of excavated materials and site grading work may also be required, depending on whether or not the new air piping from the blower building to the air lift station is installed above or below ground. Potential adverse environmental impacts during construction include short term localized erosion and airborne dust from the construction site through wind action and heavy equipment use. Erosion and sediment control practices include both temporary measures such as temporary fencing, erosion control barriers, and seeding and grading of properly sloped drainage ways.

3.3.1.2 Air Resources: Air quality may be degraded by increased particulate levels during excavation and construction work associated with the proposed improvements. Temporary increases in construction equipment emissions are not expected to be significant to the general impacted area. Measures that can be taken during construction to control excessive airborne dust are listed below.

- Watering and/or the use of dust retardants before and during construction,
- Stabilizing temporary and permanent access roads to prevent erosion,

- Proper placement and compaction of stockpiled soil and excavated material to reduce particulates,
- Regrading, resurfacing, and/or reseeding dust-prone areas and disturbed terrain immediately, and
- Limiting construction activities during periods of high winds.

3.3.1.3 Wildlife Resources: The proposed project will result in construction activities within the extents of the existing WWTP. Wildlife will be deterred from occupying the area immediately adjacent to the site due to construction activities. No long term effects on wildlife are expected as a result of this project. It is doubtful that there will be a threat to any endangered species of animals or plants.

3.3.1.4 Cultural Resources: The construction and operation of the wastewater treatment plant improvements is not expected to have any significant adverse short or long-term impact on cultural resources of the area. All work covered in this project will take place within existing structures or within previously excavated trenches. In the event that archaeological or historic resources are unearthed during construction excavation, the immediate stoppage of work is dictated by a required condition in the contract specifications.

Construction should bring a slight economic boost to the area through the hiring of local labor, retail trade by construction employees, and purchase of miscellaneous building supplies and fuel.

3.3.2 Impact on the Environment with no Improvement Action Taken: If no action is taken to improve the existing wastewater treatment facility components

outlined in this report, there is a potential for the components to fail. The primary clarifier mechanisms and drives as well as the grit removal equipment should be replaced with new equipment to increase reliability. The leaking compressed air pipeline that supplies the air lift pump station should be replaced to save energy and maintenance costs with regard to the blowers. No action will result in continued and prolonged wasting of energy from the leaking compressed air pipe. No action will also increase the possibility of the grit removal and primary clarifier systems failing. If the grit removal system fails, it would result in damaged pumps and increased maintenance costs downstream of the grit chamber. If the primary clarifier mechanisms were to fail, the biological treatment systems could potentially be overloaded with solids and organics which could result in SWD permit violations. In summary, the WWTP should be upgraded to provide a long term safe means of handling wastewater.

END OF SECTION 3

SECTION 4: EVALUATION OF PRESENT CONDITIONS AND FUTURE NEEDS

4.1 PROJECT NEED AND PLANNING AREA IDENTIFICATION

Select improvements to the Pierre WWTP are necessary to ensure continued good performance of the treatment plant. In the 2014 Wastewater Treatment Plant System Analysis, multiple treatment components were identified to be in poor condition and were recommended for immediate replacement. The project improvement area is defined as the area within the city limits of the City of Pierre. This section will determine the present flows and loads and analyze the capacity and effectiveness of the existing WWTP treatment components to treat the present and future flows and loadings.

4.2 EXISTING FACILITIES DESCRIPTION

4.2.1 Existing Wastewater Treatment Plant: The Pierre Wastewater Treatment Plant is located on the southeast side of the City of Pierre near Lake Sharpe of the Missouri River. Wastewater is conveyed to the treatment plant through nine (9) lift stations located in and around the City of Pierre. The wastewater treatment plant provides both primary and secondary treatment of the influent wastewater. The pretreatment facility consists of screening, pumping, comminution, grit removal, and flow measurement. Primary treatment is provided by two (2) primary clarifiers with provisions for a third future primary clarifier. Primary effluent is pumped to secondary treatment, which consists of one (1) trickling filter unit followed by a complete mix activated sludge system. An air lift pump station is provided between the trickling filter and complete mix activated sludge basins in order to raise the hydraulic grade line to the necessary level for the activated sludge and final clarification units. Secondary clarification is achieved with two (2) final clarifiers with provisions for a third future final clarifier. Return activated sludge (RAS) is recycled to the air lift pump station and waste activated sludge (WAS) is thickened using a dissolved air flotation (DAF)

unit. Wastewater effluent is disinfected subsequent to secondary clarification using chlorine injection. Sulfur dioxide is then used to neutralize any residual chlorine. Finally, disinfected effluent from the plant flows by gravity to Lake Sharpe of the Missouri River. Figure 4.1 shows the location of the existing WWTP.

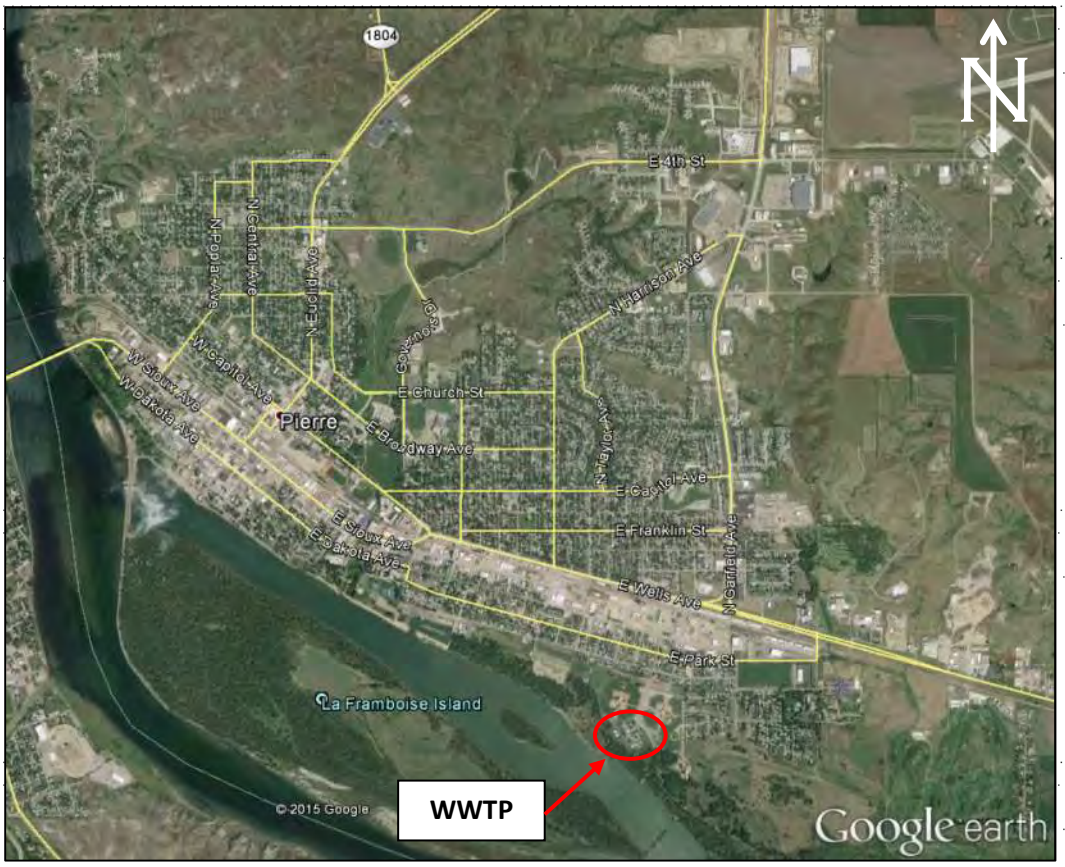

Figure 4-1: Wastewater Treatment Plant Location

4.2.2 Existing Wastewater Flows and Loads: The City of Pierre keeps and maintains flow and loading records for the WWTP. Flow at the Pierre WWTP is measured at two different locations with parshall flumes. The influent parshall flume has a 9-inch throat width and is located immediately downstream of the grit removal process. The effluent parshall flume has a throat width of 18 inches and is

located downstream of the final clarifiers. Both flumes use ultrasonic level detectors to monitor height of water in the flumes and calculate corresponding flow rate. The operations personnel track daily flow volumes and the peak flow records. For a complete list of the wastewater parameters that must be tracked and reported under the City's SWD permit, see Section 2.1 of this report.

Daily flow records and routine solids and organic loading data for the year 2014 were used to determine the existing loads to the facility. The 2014 data used to calculate the existing loads to the facility are provided in Appendix C. Data from 2014 was chosen for these calculations because of the adverse impacts the 2011 flood had on the data from 2011 through 2013. Although the flood had receded in 2011, the cleaning of sewers throughout the city in 2012 and 2013 resulted in unusually high solids and organics content in the raw wastewater. Using the data from 2011 through 2014 would give an unrealistic representation of the quality of the wastewater and result in WWTP components being designed for conditions that are unlikely to occur again in the future. Based on the data presented in Appendix C, the results of the analysis of the influent records are presented in Table 4-1.

Table 4-1: Present Conditions of Influent Flows and Loadings

Condition	Flow, MGD	BOD_5, mg/L	BOD_5, lb/d	TSS, mg/L	TSS, lb/d
Average Day	1.51	282	3,551	296	3,728
Peak Month	1.89	428	6,746	576	9,079
Peak Day	2.36	676	13,305	1,387	27,299

According to the US Census Bureau, the estimated population for the time frame represented by the records shown in Table 4-1 is 13,984. This population yields an average daily flow rate of 108 gallons per capita per day (gpcd). If the average

daily flow rate is greater than 125 gpcd, the cost of correction of inflow/infiltration (I/I) must be considered when developing treatment alternatives. Since the current average daily flow rate is less than 125 gpcd, inflow and infiltration mitigation is not discussed in this report.

Compared to the 1997 Facility Plan prepared by Banner Associates, the present influent flow conditions have slightly declined. The 1997 Facility Plan averaged the influent loading data from 1994, 1995, and 1996. This pervious data showed an average daily flow of 1.79 MGD or 132 gpcd compared to today's average daily flow of 1.51 MGD or 108 gpcd. The change in average daily flow from 1.79 MGD in 1997 to 1.51 MGD today represents a 15.6% reduction. With this reduction in flow, however, came an increase in the solids and organics concentration of the wastewater. The average TSS concentration increased from 214 mg/L in the 1997 Facility Plan to 296 mg/L today. The average BOD_5 concentration increased from 263 mg/L in the 1997 Facility Plan to 282 mg/L today. This increase in solids and organics content would be expected since the population of Pierre has increased from 13,600 at the time of the pervious Facility Plan to an estimated 13,984 today. When looking at the solids and organics loading on the WWTP in terms of pounds per day, the loading has not significantly changed since the 1997 Facility Plan.

4.2.3 Future Wastewater Flows and Loads: Since this Facility Plan outlines the need and options to replace existing pieces of equipment, an examination of anticipated future wastewater flows and loads was not completed. The present loading data presented in Table 4-1 shows a present average day flow of 1.51 MGD and a peak day flow of 2.36 MGD which are both below the design conditions used during the 1999/2000 major facility improvements. When designing the 1999/2000 facility improvements, an average day flow of 2.2 MGD and a peak day of 4.4 MGD were used. Because the influent loadings are not yet

reaching the facility's maximum capacity, expansion of the WWTP to increase capacity is not considered at this time.

4.3 EVALUATION OF TREATMENT PROCESS EQUIPMENT

This section details the process equipment that is recommended for immediate replacement, which includes the primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the underground compressed air pipeline between the blower building and the air lift pump station. Other treatment process equipment not described in this section should be monitored and included within a subsequent planning document.

4.3.1 Grit Removal System: Directly after passing through the comminutors, wastewater flows through a 20-inch pipe to the grit chamber. The grit removal system at the Pierre WWTP consists of an influent vault, a 10-foot diameter vortex grit removal chamber, an air lift grit removal system, and a grit classifier which cleans and dewaters the grit that is removed from the chamber. The grit removal equipment can be seen in Figure 4-2. A well-functioning grit removal system is an important part of the pretreatment process because it removes sand, small pebbles, and other dense material that can damage pumps and accumulate in tanks downstream which in turn increases maintenance costs.

Figure 4-2: Grit Removal System Components

The grit removal equipment has been weathered harshly, showing severe rust and corrosion on the exposed ferrous surfaces. It is recommended that the existing grit removal and classifier equipment be replaced to ensure proper grit removal from the wastewater into the future. In its current condition, it is likely that the performance of the grit removal system will be compromised at some point in the future.

4.3.2 Primary Clarifiers: After leaving the grit chamber, wastewater passes through the influent parshall flume for flow measurement and then flows through a 24-inch pipe into the primary clarifier distribution box which evenly splits the flow between the two (2) primary clarifiers. This distribution box also has a third piping stub so another clarifier can be easily added to the WWTP when it becomes necessary. Each primary clarifier has a weir diameter of 53 feet, an

overall diameter of 60 feet, and a side water depth of 8.09 feet. The primary clarifiers are covered with aluminum domes in order to reduce problems with icing in the winter and to improve performance during windy conditions. The clarifiers serve to separate solids from the wastewater by gravity settling and flotation. The solids that collect at the bottom of the clarifier are plowed to the center "sludge pocket" by scrapers on the clarifier mechanism. The clarifier mechanism is rotated by a small electric motor. The floating materials are removed by a scum skimmer that directs the scum to a scum box on the clarifier wall. The clarified wastewater flows over peripheral effluent weirs into a channel that directs the flow to an effluent box. The settled solids or "sludge" are pumped to the autothermal thermophilic aerobic digestion (ATAD) system for further treatment. The floating solids or "scum" are also pumped to the ATAD system. The present condition of the primary clarifiers can be seen in Figure 4-3.

The primary clarifiers were designed to remove 40 to 60 percent of TSS and 20 to 35 percent of BOD_5 in the raw wastewater. Laboratory data recorded by the City of Pierre shows that the primary clarifiers have performed well in recent years. In 2014, the primary clarifiers removed 60 to 70 percent of TSS and 40 to 50 percent of BOD_5 in the raw wastewater, which exceeds the original design conditions. Although provisions are in place to allow a third primary clarifier to be easily added, another clarifier is not needed at this point in time. The two existing primary clarifiers are capable of handling present loading conditions as well as the anticipated loading conditions of the foreseeable future.

Figure 4-3: Primary Clarifiers and Mechanisms

The clarifier mechanisms and drives are in poor condition and are recommended to be replaced. All ferrous metal surfaces have rusted severely in the humid environment and are at risk of failure. If the clarifier mechanisms were to fail, solids and organics would not be removed as efficiently as they are normally and more solids and organics would be sent to downstream processes, placing unnecessary stress on the trickling filter and activated sludge system.

4.3.3 Compressed Air Pipeline: The underground air pipeline between the blower building and the air lift pump station supplies compressed air from the air lift blowers to the air lift pump station. The air lift pump station is located downstream of the trickling filter and is used to raise the hydraulic grade line of the wastewater to the necessary level for the activated sludge and final clarification units. This pipe is known to leak by City staff and should be replaced. The air leak in this pipe means that more energy is required to supply air to the

air lift pump station than is necessary, which is increasing operation and maintenance costs of the air lift blowers. The air lift pump station and compressed air pipe in question can be seen in Figure 4-4. Please note that the portion of the pipe that is leaking is located underground, not the above ground portion shown in Figure 4-4.

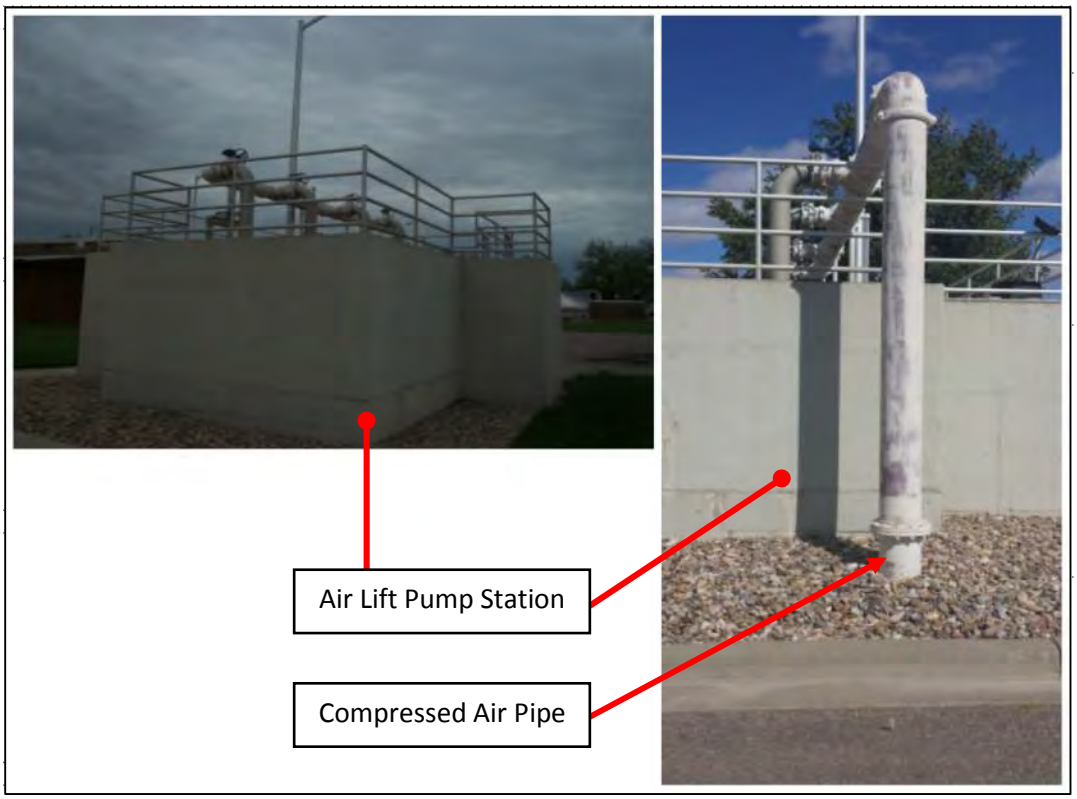

Figure 4-4: Air Lift Pump Station and Compressed Air Pipe

4.4 SUMMARY

The components listed in this section for replacement were originally identified for replacement in the 2014 Wastewater Treatment Plant System Analysis completed by Banner Associates. In this previous report the primary clarifier mechanisms and drives, grit removal and grit washing equipment, underground compressed air pipeline between the blower building and air lift pump station, and the trickling filter feed pump

were recommended for immediate replacement. The trickling filter feed pump was not discussed in this section because the City of Pierre indicated that it would be addressed through the maintenance budget rather than through a separate project. Along with the components that were recommended for immediate replacement, the previous report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. These items should be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

END OF SECTION 4

SECTION 5: WASTEWATER TREATMENT ALTERNATIVES

5.1 GENERAL REQUIREMENTS AND CONDITIONS

The purpose of this section of the report is to review alternatives to provide reliable treatment to meet existing and future planned hydraulic and organic loading conditions. Section 4 of this report includes a discussion of the existing wastewater treatment plant and loading conditions as well as an estimate of the future anticipated loading conditions.

5.1.1 Site Conditions: The proposed site for the improvements lies within the extents of the existing wastewater treatment plant. The existing WWTP is located on the southeast side of Pierre in the northwest quarter of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota. As mentioned in Section 4 of this report, three (3) items were identified for immediate replacement in the 2014 Wastewater Treatment Plant System Analysis: primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the compressed air pipeline between the blower building and air lift pump station. Along with the components that were recommended for immediate replacement, the previous report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. These items should be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

5.2 DESCRIPTION OF ALTERNATIVES

The alternatives considered for the equipment replacement are as follows.

Grit Removal Rehabilitation Alternatives:

- Grit Removal Alternative 1: Vortex Grit Removal
- Grit Removal Alternative 2: Grit Separator
- "No Action" Alternative

Primary Clarifier Rehabilitation Alternatives:

- Primary Clarifier Alternative 1: Stainless Steel Mechanisms and Drives
- Primary Clarifier Alternative 1: Carbon Steel Mechanisms and Drives
- "No Action" Alternative

Compressed Air Pipeline Replacement (Blower Building to Air Lift Station) Alternatives:

- Compressed Air Pipeline Replacement Alternative 1: Below Ground Pipe
- Compressed Air Pipeline Replacement Alternative 2: Above Ground Pipe
- "No Action" Alternative

5.3 EVALUATION OF ALTERNATIVES

5.3.1 Grit Removal Rehabilitation Alternatives

5.3.1.1 Grit Removal Rehabilitation Alternative 1: Vortex Grit Removal

The existing grit chamber is a vortex style chamber that is cylindrical in shape with a cone shaped bottom. Wastewater enters the chamber tangentially and flows around the tank with the help of a mechanically induced vortex while the grit settles around the cone and eventually falls into the center of the chamber where it is then removed by a pump. The pump transfers the grit to the grit classifier which dewaters the grit and conveys it to a disposal container.

This alternative would replace the old carbon steel vortex grit removal equipment as well as the classifier with new stainless steel equipment of the same style. This alternative would require little or no modifications to the existing concrete tank and would simply replace the old equipment with new equipment. The stainless steel material would give the grit removal equipment corrosion resistance to prevent shortened life of the system.

5.3.1.2 Grit Removal Rehabilitation Alternative 2: Grit Separator

A grit separator is a relatively new technology which is similar in principle to the vortex grit chamber. This system can achieve higher grit removal rates than the vortex grit chamber outlined in Alternative 1 because it prevents the wastewater from short circuiting and leaving the grit chamber before the grit has had time to settle. Another benefit of this system is that there are no moving parts inside the chamber, which would save money in terms of operation and maintenance costs. Like the vortex grit removal system, grit that has settled to the bottom of the tank would be removed by pumps and directed to a grit classifier for dewatering and disposal.

If this alternative were chosen, major modifications would need to be made to the existing concrete chamber structure. Also, this style of grit removal system would require a higher hydraulic grade on the influent side of the process than currently exists. A lift station would need to be added upstream of the grit removal process to achieve this higher hydraulic grade. As a result, this alternative was given no additional consideration.

5.3.1.3 "No Action" Alternative

If no action were taken on the grit removal system, it is likely that the performance of the grit removal system will be compromised at some point in the future. A well-functioning grit removal system is an important part of the pretreatment process because it removes sand, small pebbles, and other dense material that can damage pumps and accumulate in tanks downstream which would increase maintenance costs.

5.3.1.4 Probable Costs

The replacement of the existing internal grit removal equipment with new components including new grit mechanism, grit classifier, pipe and valve replacement, concrete repair and other ancillary work is estimated to be $293,000. No additional costs were estimated for the alternate grit removal system.

5.3.2 Primary Clarifier Rehabilitation Alternatives

5.3.2.1 Primary Clarifier Rehabilitation Alternative 1: Stainless Steel Mechanisms and Drives

As previously discussed, the existing primary clarifier mechanisms are severely corroded and need to be replaced. The analysis of the current flow and loading conditions influent to the wastewater treatment plant differs little from the existing conditions presented in the old facility plan. Based on the previous facility planning document, the planning to address higher flows, when they occur, will be to construct an additional primary clarifier of similar size. The current facility already has a structure and piping stubs in place for a third clarifier feed. Based on this information, it is appropriate to replace the current mechanisms to fit the current clarifier structures.

Under this alternative, the heavily corroded carbon steel equipment would be replaced with all stainless steel equipment, including the mechanisms, drives, launders, and bridges of both primary clarifiers. This alternative would have a higher initial cost than carbon steel but would also have lower maintenance costs than carbon steel because it would not have coatings to be maintained. This alternative would help ensure that the primary clarifier equipment lasts longer than the fifteen (15) years that the old equipment lasted.

5.3.2.2 Primary Clarifier Rehabilitation Alternative 2: Carbon Steel Mechanisms and Drives

This alternative would replace the existing primary clarifier equipment with new carbon steel equipment, and would include the mechanisms, drives, launders, and bridges in both primary clarifiers. This alternative would have a lower initial cost than the stainless steel in Alternative 1, but would also have a higher annual maintenance cost because the high performance coatings on the steel would have to be maintained to prevent corrosion. If the coatings are not maintained, the new carbon steel equipment could corrode quickly in the humid environment similar to the original equipment.

5.3.2.3 "No Action" Alternative

The existing primary clarifier mechanisms and drives are constructed of carbon steel and were originally coated to protect the steel from corrosion. Since the original installation during the 1999 and 2000 major facility improvements, the steel coatings were not properly maintained which led to major corrosion issues in the humid environment. This alternative would

leave the primary clarifiers as is with no improvements made. If the old clarifier mechanisms were to fail, solids and organics would not be removed as efficiently as they are normally and more solids and organics would be sent to downstream processes, placing unnecessary stress on the trickling filter and activated sludge system.

5.3.2.4 Probable Costs

Replacement of the existing primary clarifier mechanisms with new stainless steel mechanisms has an opinion of probable cost of $709,000. The cost for just the material and installation of each mechanism is estimated at $326,250. An equivalent opinion of probable cost for a carbon steel mechanism would be $260,000 without the high performance coatings. High performance coatings for each mechanism are expected to be in the range of $40,000 to $50,000. This brings the overall cost of the options close to each other.

5.3.3 Compressed Air Pipeline Replacement Alternatives:

5.3.3.1 Compressed Air Pipeline Replacement Alternative 1: Below Ground Pipe

This alternative would involve excavation to remove and replace the existing compressed air pipe that serves the air lift pump station from the blower building. The new pipe would be constructed of 10-inch mechanical joint ductile iron pipe with heat resistant gaskets. Advantages of this option include a lower price and the below ground pipe will not obstruct travel in the area.

5.3.3.2 Compressed Air Pipeline Replacement Alternative 2: Above Ground Pipe

This alternative would involve abandoning the existing compressed air pipe that serves the air lift pump station from the blower building and

installing a new pipeline above ground. This new pipeline would be constructed of 10-inch welded stainless steel pipe and installed twelve (12) to fourteen (14) feet above ground with the use of pipe supports. Advantages of this alternative over the below ground alternative would be that leaks in the piping would be easier to detect and that any leak found would be easier to repair.

5.3.3.3 "No Action" Alternative

If no action were taken on the compressed air pipe between the blower building and air lift pump station, air would continue to leak from the pipe and energy would continue to be wasted in the form of electricity used to power the air lift blowers. If the existing compressed air pipe were to completely collapse, air could no longer be supplied to the air lift pump station which would disrupt the treatment of wastewater and backup the treatment processes upstream.

5.3.3.4 Probable Costs

The replacement of the underground air piping with similar underground construction has an opinion of probable cost of $29,000. The replacement of the same airline with an above ground air piping system has an opinion of probable cost near $45,000.

5.4 SUMMARY AND RECOMMENDATIONS

The 2014 Wastewater Treatment Plant System Analysis identified three (3) items in need of immediate replacement at the City of Pierre's WWTP. These items include primary clarifier mechanisms and drives, grit removal and grit classifier equipment, and the compressed air pipe between the blower building and air lift pump station. This section described two (2) possible alternatives other than "No Action" for each of the

items in need of replacement which would ensure the reliable operation of the grit removal system, primary clarifiers, and the compressed air feed pipe to the air lift pump station.

Banner Associates, Inc. recommends Alternative 1 for each of the three (3) items in need of replacement. This includes the vortex grit removal and washing system, the stainless steel primary clarifier drives and mechanisms, and the below ground compressed air pipe between the blower building and the air lift pump station.

The vortex grit removal and grit washing system constructed of stainless steel is recommended because it would be a near exact replacement of the existing equipment. This ensures that no major modifications of the concrete grit tank would be needed to fit in the new equipment. The stainless steel material will give the grit removal equipment corrosion resistance to prevent shortened life of the system. Although a grit separator system may perform better that the recommended vortex grit removal system, the required modifications needed for the grit separator would increase the cost of the project substantially. In addition to modifications of the concrete tank, the grit separator would also require a lift station to be installed upstream to raise the hydraulic grade of the incoming wastewater to the level required by the grit separator.

The stainless steel primary clarifier mechanisms and drives are recommended because of their ability to resist corrosion in the humid environment of a primary clarifier that is equipped with a cover. Although the stainless steel will have a greater initial cost when compared to the same equipment constructed of carbon steel, the annual maintenance cost of the stainless steel equipment will be less than the carbon steel equipment. The high performance coating system of the carbon steel equipment would need to be thoroughly maintained to resist the harsh corrosion that appears on the existing

equipment. The recoating of carbon steel equipment would eventually offset the initial savings of installing carbon steel mechanisms and drives.

The below ground compressed air pipe is recommended because of the lower price compared to the stainless steel above ground option. A properly installed below ground pipeline will have a long service life. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

In addition to the three (3) components discussed in this report, the 2014 Wastewater Treatment Plant System Analysis also recognized the trickling filter feed pump as in need of immediate replacement. This item was not discussed because the City of Pierre indicated that it would be addressed through the maintenance budget rather than through a separate project. The 2014 report also identified multiple components that should be considered for replacement or repair in the near future. These components include the screening equipment and dewatering screw, the concrete issues with the post ATAD tanks, and the settlement issues of the Lab/Screening/Pump building. It is recommend that these items be closely monitored for any abrupt detrimental change in condition and should be included within a subsequent planning document.

END OF SECTION 5

SECTION 6: RECOMMENDATIONS AND CAPITAL IMPROVEMENT PLAN

6.1 GENERAL

Alternatives were presented and investigated in Section 5 of this report. Selection of the recommended alternatives was based on the current condition of the equipment in question and costs associated with replacing the equipment.

6.2 DESCRIPTION OF SELECTED IMPROVEMENTS

6.2.1 Grit Removal Rehabilitation: Of the alternatives for the grit removal system rehabilitation, Banner Associates recommends Alternative 1: vortex grit removal. The vortex grit removal and grit washing system is recommended because it would be a near exact replacement of the existing equipment. This ensures that no major modifications of the concrete grit tank would be needed to fit in the new equipment. The stainless steel material will give the grit removal equipment corrosion resistance to prevent shortened life of the system. Although a grit separator system may perform better that the recommended vortex grit removal system, the required modifications needed for the grit separator would increase the cost of the project substantially. In addition to modifications of the concrete tank, the grit separator would also require a lift station to be installed upstream to raise the hydraulic grade of the incoming wastewater to the level required by the grit separator.

6.2.2 Primary Clarifier Rehabilitation: From the alternatives to rehabilitate the primary clarifiers, Banner Associates recommends Alternative 1: stainless steel mechanisms and drives. The stainless steel primary clarifier mechanisms and drives are recommended because of their ability to resist corrosion in the humid environment of a primary clarifier that is equipped with a cover. Although the stainless steel will have a greater initial cost when compared to the same

equipment constructed of carbon steel, the annual maintenance cost of the stainless steel equipment will be less than the carbon steel equipment. The high performance coating system of the carbon steel equipment would need to be thoroughly maintained to resist the harsh corrosion that appears on the existing equipment. The recoating of carbon steel equipment would eventually offset the initial savings of installing carbon steel mechanisms and drives.

6.2.3 Compressed Air Pipeline Replacement: Banner Associates recommends replacing the existing leaking compressed air pipeline with a below ground pipeline. The below ground compressed air pipe is recommended because of the lower price compared to the stainless steel above ground option. A properly installed below ground pipeline will have a long service life. The known leak in the present underground compressed air pipe is resulting in higher than necessary operation and maintenance costs for the air lift blowers.

6.3 SUMMARY AND ESTIMATE OF PROBALBE COSTS

Costs associated with the recommended improvements summarized above are included in Table 6-1. A complete listing of probable costs can be found in Appendix D.

Table 6-1: Opinion of Total Project Cost

DESCRIPTION OF WORK AND MATERIALS	COST
Mobilization	$ 145,000
Primary Clarifier Rehabilitation	$ 809,000
Grit Removal Rehabilitation	$ 368,000
Air Pipeline Replacement (Blower Building to Air Lift Station)	$ 29,000
Contingencies (10% Construction Costs, 2015)	$ 135,100
Opinion of Probable Construction Costs (2015 Construction)	**$ 1,486,100**
Engineering, Surveying, and Construction Services	$ 256,200
Administration and Legal	$ 29,800
Opinion of Total Project Costs (2015)	**$ 1,772,100**

*Note: Opinion of Total Project Costs are for the 2015 construction year

6.4 MONETARY IMPACT EVALUATION

6.4.1 Operation and Maintenance Costs: The recommended alternatives will result in no change to the anticipated operation and maintenance costs for this facility. The improvements represent replacement of existing equipment and will have similar operation and maintenance needs as the previous equipment when it was installed.

6.4.2 User Rate Impact Evaluation: The City of Pierre recently completed a comprehensive Wastewater Rate Study conducted by Missouri River Energy Services. This study considers many factors outside the scope of this facility planning document. While the study takes into account this project it also considers prior recommendations to hire additional staff at the wastewater treatment plant as well additional improvements to the collection system and a

more defined reserve account. For short term recommendations, the Missouri River Energy Services study recommends an 18% user fee increase for 2015 and 4% increases each year from 2016 through 2018. These rate increases also account for potential future modifications of the rate structure based on retirement of old debt while considering potential new debt. This report is available upon request of the City of Pierre.

As to this planning document, the opinion of probable project cost is $1,679,600. The City of Pierre would be eligible to seek project funding through the State of South Dakota's State Revolving Grant and Loan Funds, funding through local resources, and other options. Current rates for loans from the State Revolving Loan fund include 3% for 11 to 20 years. Based on a 20 year loan at 3 percent financing (and including a requirement to charge 110 percent of the annual debt retirement cost) the anticipated annual debt retirement for this project would be approximately $131,000 per year. Pierre currently has 6,540 sewer user connections. Assuming the each user connection participates equally in debt retirement and the debt retirement is put into the base fee portion the user fee, the anticipated monthly impact to the user fee is $1.67 per account for this project.

6.5 IMPLEMENTATION PLAN AND SCHEDULE

A common implementation schedule for the recommended improvements is presented in Table 6-2. This schedule recognizes the City's desire for an aggressive schedule to design, bid and construct the project. It should be noted that several of the tasks listed in the schedule are sequential in nature. Failure to maintain the deadline dates for any task may result in delay of later task completion dates.

Table 6-2: Implementation Schedule

Task	Recommended Dates
Acceptance of the Wastewater Facility Plan	February, 2015
State Water Plan Application	February, 2015
Notice To Proceed On Design	February, 2015
Placement on the State Water Plan	March, 2015
Prepare Funding Applications	March, 2015
Submit Plans and Specifications for Review	May, 2015
DENR Approval for Funding Package	June, 2015
Open Bids for Improvements	June, 2015
Start Construction of Improvements	August, 2015
Substantial Completion of Improvements	March, 2016
Final Completion of Improvements	April, 2016
Complete One Year Warranty Period	April, 2017

END OF SECTION 6

APPENDIX A

SDDENR SWD PERMIT AND STATEMENT OF BASIS

Permit No: SD0020176

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SD 57501-3181

SURFACE WATER DISCHARGE PERMIT

AUTHORIZING DISCHARGE

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

City of Pierre

is authorized under this permit to discharge to

Lake Sharpe (Missouri River)

from its wastewater treatment facility located in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, Hughes County, South Dakota (Latitude 44º 21' 2.4", Longitude 100º 19' 24.7"), in accordance with discharge points, effluent limits, monitoring requirements, and other conditions set forth herein. Authorization is limited to those outfalls specifically listed in the permit. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modifications; or for denial of a permit renewal application.

This permit shall become effective **January 01, 2007.**

This permit and the authorization to discharge shall expire at midnight, **December 31, 2011.**

Signed this 27th day of November 2006.

Authorizing Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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DEFINITIONS

30-day (and monthly) average means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

7-day (and weekly) average means the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

ARSD means the Administrative Rules of South Dakota.

Acute Toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the effluent results to be considered valid.

The **Approval Authority** is the Secretary of the South Dakota Department of Environment and Natural Resources.

An **Authorized Release** is a discharge from a permitted outfall that meets all permit conditions and effluent limits.

BOD_5 means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **Bypass** is the intentional diversion of waste streams from any portion of a treatment facility. Bypasses do not include releases from the sanitary sewer collection system (see sanitary sewer overflow) or unauthorized releases from the treatment facility (see unauthorized release). Bypasses may result in a discharge or unauthorized release.

Chronic Toxicity occurs when the survival, growth, or reproduction, as applicable, for either test species, at the effluent dilution(s) designated in this permit, is significantly less (at the 95 percent confidence level) than that observed for the control specimens.

Composite Samples shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

1. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

2. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

3. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every “X” gallons of flow); and,

4. Continuous collection of sample, with sample collection rate proportional to flow rate.

Daily Maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

A **Grab Sample**, for monitoring requirements, is a single "dip and take" sample collected at a representative point in the discharge stream.

IC25 (Inhibition Concentration) is a point estimate of the toxicant concentration that would cause a 25% reduction in a nonlethal biological measurement of the test organism, such as reproduction or growth.

IU means industrial user.

An **Instantaneous Measurement**, for monitoring requirements, is a single reading, observation, or measurement either taken at the facility or within 15 minutes of the sample.

NOEC (No Observed Effect Concentration) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organism at a specific time of observation. Determined using hypothesis testing.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

A **Publicly-owned Treatment Works** or **POTW** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature, which is owned by the state, or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

A **Sanitary Sewer Overflow** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system; including sewer lines, manholes, lift stations, etc.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

Severe Property Damage is substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources, which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sewage Sludge is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

Significant Industrial User (SIU) is defined as an industrial user discharging to a publicly owned treatment works that satisfies any of the following:

1. has a process wastewater flow of 25,000 gallons or more per average work day or contributes five percent or more of the average dry weather hydraulic or organic capacity of the municipal system receiving the waste;

2. is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or

3. is determined by the Control Authority to have a reasonable potential to adversely impact the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

TSS means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

An **Unauthorized Release** is a discharge from the lower end of the treatment or containment system through a release structure or over or through retention dikes that does not meet all permit conditions or effluent limits. An unauthorized release is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to treatment or containment.

An **Upset** is an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

1.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1.1 Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under this permit is a violation of the South Dakota Water Pollution Control Act and could subject the person(s) responsible for such discharge to penalties under Section 34A-2-75 of the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from the permittee first learning of an unauthorized discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

Outfall Number	Description of Discharge Point(s)
001	Any discharge from the discharge pipeline that enters Lake Sharpe (Missouri River), (Latitude 44º 20' 45.2", Longitude 100º 19' 12.1").

1.2 Effluent Limits – *Outfall 001*

Effective immediately and lasting through the life of this permit, the quality of effluent discharged by the facility shall, as a minimum, meet the limits as set forth below:

Effluent Characteristic	Effluent Limit		
	30-Day Average [1]	7-Day Average	Daily Maximum
BOD_5, mg/L	30	45	N/A
Total Suspended Solids (TSS), mg/L	30	45	N/A
Fecal Coliform, no./100 mL [2] (May 1 – September 30)	200	N/A	400
Total Coliform, no./100 mL [3]	5,000	N/A	20,000
Oil and Grease, mg/L	N/A	N/A	10.0
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	N/A	N/A	0.019
The pH of the discharge shall not be less than 6.6 standard units or greater than 8.3 standard units in any sample.			
There shall be no Acute Whole Effluent Toxicity in the discharge, as measured by the WET test.			
Percentage Removal Requirements (TSS and BOD_5 Limit): In addition to the concentration limit on TSS and BOD_5 indicated above, the arithmetic mean of the TSS and BOD_5 concentration for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).			

[1] See Definitions.

[2] Fecal Coliform organisms from May 1 to September 30 shall not exceed a concentration of 1,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 2,000 per 100 milliliters in any one sample from May 1 to September 30.

[3] Total Coliform organisms shall not exceed a MPN or MF of 5,000 per 100 milliliters as a geometric mean based on a minimum of five samples obtained during separate 24-hour periods for any 30-day period. They shall not exceed 20,000 per 100 milliliters in any one sample.

1.3 Self-Monitoring Requirements

All discharges, sanitary sewer overflows, and unauthorized releases shall be monitored for the following parameters at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge.

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Rate of Discharge, MGD	Continuous	Daily Maximum; 30-day Average	Instantaneous
pH, standard units	Daily	Daily Minimum; Daily Maximum	Instantaneous [2]
Oil and Grease, mg/L [3]	Daily	Presence or absence of sheen; Daily Maximum	Visual/Grab
BOD_5, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
BOD_5, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Total Suspended Solids, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
Total Suspended Solids, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Fecal Coliform, no./100 mL (May 1 – September 30)	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Total Coliform, no./100 mL	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Ammonia-Nitrogen, mg/L (as N) [6]	Weekly	Daily Maximum; 30-day Average	Grab

[1] See Definitions.

[2] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[3] Oil and grease shall be visually monitored during discharge. In the event that an oil sheen or floating oil is observed during discharge, grab samples shall be taken immediately, analyzed and reported.

[4] The percent removal between the influent and effluent values for this parameter shall also be reported.

[5] For fecal and total coliforms, if a minimum of five samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. ***This sampling protocol for fecal coliforms, only applies if the discharge occurs between May 1 and September 30.***

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Total Residual Chlorine, mg/L (Required only if effluent is chlorinated)	Daily	Daily Maximum [7]	Grab
Dissolved Oxygen, mg/L	Weekly	Daily Minimum	Grab
Water Temperature, °C	Weekly	Daily Maximum; 30-day Average	Instantaneous [8]
Percent Removal (TSS and BOD_5)	Monthly	30-day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [9]	Pass/Fail	Grab
Parameters listed in ARSD, Section 74:52:02:42 and Molybdenum	Annually	Actual Results	As required[10]

[7] EPA considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "0" shall be used for reporting and averaging purposes.

[8] The water temperature of the effluent shall be taken as a field measurement at the time of sampling. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[9] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[10] See Section 2.1 for sampling requirements.

1.4 Whole Effluent Toxicity Testing – Acute Toxicity

Effective immediately, the permittee shall, at least once each calendar quarter, conduct acute static replacement toxicity tests on a sample of the discharge. Quarterly samples shall be collected on a two day progression; i.e., if the first quarterly sample is on a Monday, during the next quarter, sampling shall be on a Wednesday, etc.

The replacement static toxicity test shall be conducted in accordance with the procedure set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, October 2002. EPA-821-R-02-012, and the "Region VIII EPA NPDES Acute Test Conditions – Static Renewal Whole Effluent Toxicity Test". In the case of conflicts, the Region VIII Document will prevail. The permittee shall conduct an acute 48-hour static toxicity test using *Ceriodaphnia dubia* and an acute 96-hour static toxicity test using *Pimephales promelas* (fathead minnows).

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. If more than 10 percent control mortality occurs, the test shall be repeated until satisfactory control survival is achieved.

If acute toxicity occurs, an additional test shall be conducted within two weeks of the date of when the permittee learned of the test. If only one species fails, retesting may be limited to this species. Should acute toxicity occur in the second test, testing shall occur once a month until further notified by the permit issuing authority.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting calendar quarter (e.g., whole effluent results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with the latest revision of the "Region VIII Guidance for Acute Whole Effluent Reporting", and shall include all chemical and physical data as specified.

If the results for four consecutive quarters of testing indicate no acute toxicity, the permittee may request the permit issuing authority to allow a reduction to quarterly acute toxicity testing on only one species on an alternating basis. The permit issuing authority may approve or deny the request based on the results and other available information without an additional public notice. If the request is approved, the test procedures are to be the same as specified above for the test species.

1.5 Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE)

If acute and/or chronic toxicity occurs, an additional test shall be conducted within two weeks of the date of when the permittee learned of the test. If only one species fails, retesting may be limited to this species. Should acute toxicity and/or chronic toxicity occur in the second test, a TIE-TRE shall be undertaken by the permittee to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of, or treatment for the toxicity. Failure to initiate, or conduct an adequate TIE-TRE, or delays in the conduct of such tests, shall not be considered a justification for noncompliance with the whole effluent toxicity limits. A TRE plan needs to be submitted to the permitting authority within 45 days after confirmation of the continuance of effluent toxicity.

1.6 Chronic Toxicity Limit-Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include chronic whole effluent toxicity limits if any other information or data are developed indicating that chronic whole effluent toxicity limits are needed. Also see Section 3.15 of this permit for additional whole effluent toxicity reopener provisions.

If acceptable to the permit issuing authority, and if in compliance with current regulations, this permit may be reopened and modified to incorporate TRE conclusion relating to additional numerical limits, a modified compliance schedule, and or modified whole effluent protocol.

1.7 Inspection Requirements

The permittee shall inspect its wastewater treatment facility on at least a **daily** basis. In addition, the inspection shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility. Lift stations shall be inspected at least **twice per week**. The permittee shall maintain a notebook recording information obtained during the inspection. At a minimum, the notebook shall include the following:

1. Date and time of the inspection;
2. Name of the inspector(s);
3. The facility's discharge status;
4. Identification of operational problems and/or maintenance problems;
5. Recommendations, as appropriate, to remedy identified problems;
6. A brief description of any actions taken with regard to problems identified; and,
7. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the notebook available for inspection, upon request, by the Secretary or the U.S. Environmental Protection Agency.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1 Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2.2 Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under ARSD, Section 74:52:03:06, a.b.r. 40 CFR, Part 136, unless other test procedures have been specified in this permit.

2.3 Reporting of Monitoring Results

Effluent monitoring results obtained during the previous month shall be summarized and reported on separate Discharge Monitoring Report Forms (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Whole Effluent Toxicity (biomonitoring) results must be reported on the most recent version of EPA Region VIII's Guidance for Whole Effluent Reporting. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary at the following address:

original to: South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3181

2.4 Signatory Requirements

All applications, reports or information submitted to the Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,
   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2.5 Additional Monitoring by the Permittee

If the permittee monitors, at the designated points, any pollutants more frequently than required by this permit, using test procedures approved under ARSD, Section 74:52:03:06, a.b.r. 40 CFR 136 or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit.

2.6 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses were initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7 Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8 Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions.

2.10 Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11 Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any emergency related to this permit or permitted-facility which may endanger health or the environment as soon as possible, but no later than 24 hours after becoming aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. Instances of noncompliance, unanticipated bypasses, sanitary sewer overflows, unauthorized releases, and upsets shall be reported to the Secretary at (605) 773-3351 by the first workday (8:00

a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a. A description of the event and its cause;
   b. The period of the event, including exact dates and times;
   c. The estimated time the event is expected to continue if it has not been corrected; and,
   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Sections 2.3 and 2.4 of this permit.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12 Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11.

2.13 Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1 Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

3.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance. This may include the maintenance of freeboard levels of lagoons or holding ponds. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4 Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

3.6 Removed Substances

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7 Bypass of Treatment Facilities

1. Anticipated Bypass. Anticipated bypasses causing violation of effluent limits are prohibited, unless the Secretary approves the anticipated bypass after considering its adverse effects and determines that it will meet the following conditions:

    a. The bypass was unavoidable to prevent loss of life, threat to public health, personal injury, or sever property damage;
    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

c. The permittee submitted notices as required under paragraph three of this section.

2. Anticipated Bypass Not Causing Violations. The permittee may allow anticipated bypasses to occur which do not cause effluent limit violations, but only if for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs one and three of this section.

3. Notice of Bypass:

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 10 days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Section 2.11.

3.8 Sanitary Sewer Overflows

1. Reporting. Overflows from the sanitary sewer collection system shall be reported to the Secretary at (605) 773-3351 as soon as possible, but not later than the first business day after becoming aware of the sanitary sewer overflow. Anticipated overflows shall be reported in advance, if possible. In addition to verbal notification, the permittee shall submit to the Secretary a written report in accordance with Section 2.11, paragraphs three and four.

2. Sampling. Sanitary sewer overflows shall be sampled for the parameters of BOD_5, pH, TSS, ammonia-nitrogen, and fecal and total coliform bacteria. Overflows should be sampled on a daily basis until the overflow is terminated. The results shall be included with the written report required in paragraph one.

3. Plan Development. In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows, the permittee shall submit such a plan to the Secretary. The plan shall, at a minimum, address the following areas:

a. Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;

b. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational record keeping, and other appropriate items;

c. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance record keeping, parts and equipment inventory, and other appropriate items; and

d. Sewer system capacity evaluation: The capacity evaluation includes the following:

1. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);
2. Identification of problem areas (overflows, surcharged lines, basement backups, etc.)
3. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and
4. Sewer rehabilitation recommendations.

Upon the Secretary's approval of the plan, the permittee shall implement the plan.

3.9 Upset Conditions

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of paragraph two of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limits).

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;
   b. The permitted facility was at the time being properly operated;
   c. The permittee submitted notice of the upset as required under Section 2.11; and,
   d. The permittee complied with mitigation measures required under Section 3.2.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

3.10 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to discharge under this permit.

3.11 Availability of Reports

Except for data determined to be confidential under ARSD, Section 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and effluent data shall not be considered confidential.

3.12 Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, and exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation, or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state, or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state, or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.13 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.14 Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this general permit are modified in such a manner as to require different effluent limits than contained in this permit.

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limits than contained in this permit.

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this permit;

4. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA.

5. Whole Effluent Toxicity: Whole effluent toxicity is detected in the discharge.

6. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit; or

7. Other Changes: Other conditions or standards change so that the discharge no longer qualifies for this permit, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

3.15 Toxicity Limit-Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include a new compliance date, additional or modified numerical limits, a new or different compliance schedule, a change in the whole effluent protocol, or any other conditions related to the control of toxicants if one or more of the following events occur:

1. Toxicity was detected late in the life of the permit near or past the deadline for compliance.

2. The TRE results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the permit issuing authority agrees with the conclusion.

3. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits, and the permit issuing authority agrees that numerical controls are the most appropriate course of action.

4. Following the implementation of numerical controls on toxicants, the permit issuing authority agrees that a modified whole effluent protocol is necessary to compensate for those toxicants that are controlled numerically.

5. The TRE reveals other unique conditions or characteristics which, in the opinion of the permit issuing authority, justify the incorporation of unanticipated special conditions in the permit.

3.16 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

3.17 Industrial Wastes

1. Each significant industrial user must be identified as to qualitative and quantitative characteristics of the discharge as well as production data. A significant industrial user is defined as an industrial user discharging to a publicly owned treatment works (POTW) that satisfies any of the following: (1) has a process wastewater flow of 25,000 gallons or more per average work day or contributes

five percent or more of the average dry weather hydraulic or organic capacity of the municipal system receiving the waste; (2) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N or; (3) is determined by the Control Authority to have a reasonable potential to adversely impact the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

2. The permittee must notify the permitting authority of any new introductions by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user. Such notice must contain the information described in paragraph 1 above and be forwarded no later than sixty (60) days following the introduction or change.

3. Pretreatment Standards [ARSD 74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the waste treatment system from any source of nondomestic discharge:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in ARSD 74:28:22:01, a.b.r. 40 CFR 261.21;
   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.5, nor higher than 12.5, unless the works are specifically designed to accommodate such discharges;
   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;
   d. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;
   e. Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit);
   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
   g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;
   h. Any trucked or hauled pollutants, except at discharge points designated by the POTW;
   i. Any pollutant which causes pass through or interference; and,
   j. In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

4. The permittee shall provide adequate notice to the Secretary of the South Dakota Department of Environment and Natural Resources of:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to Sections 301 or 306 of the Federal Clean Water Act if it were directly discharging those pollutants;
   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by an industrial user introducing pollutants into the treatment works at the time of application of the SWD permit; and
   c. For the purposes of this section, adequate notice shall include information on:

      1. The quality and quantity of effluent to be introduced into such treatment works; and

2. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

5. The permittee shall sample and analyze the effluent for those parameters listed in ARSD 74:52:02:42. The sampling shall commence within thirty (30) days from the effective date of the permit and continue at a frequency of once per year.

   Sampling and analytical procedures shall be in accordance with guidelines established in ARSD 74:52:03:06, a.b.r. 40 CFR 136. Where sampling methods are not specified the effluent samples collected shall be composite samples consisting of at least twelve (12) aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Where composite samples are inappropriate, at least three (3) grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

   The results of these analyses shall be attached to, and reported along with the Discharge Monitoring Report (DMR) submitted for the end of that reporting period.

6. At such time as a specific pretreatment limit becomes applicable to an industrial user of the permittee, the permit issuing authority may, as appropriate, do the following:

   a. Amend the permittee's SWD discharge permit to specify the additional pollutant(s) and corresponding effluent limit(s) consistent with the applicable national pretreatment limit;
   b. Require the permittee to specify, by ordinance, contract, or other enforceable means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the General Pretreatment Regulations at [ARSD 74:52:11:01, a.b.r. 40 CFR 403]; and/or,
   c. Require the permittee to monitor its discharge for any pollutant which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste.

7. The permit issuing authority retains, at all times, the right to take legal action against the industrial user and/or the treatment works, in those cases where a SWD permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in Sections 3.6 and 3.8, nothing in this permit shall be construed to relieve the permittee of the civil of criminal penalties for noncompliance.

4.2 Penalties for Tampering

Any person who falsifies, tampers with, or knowingly render inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3 Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the federal Clean Water Act.

STATEMENT OF BASIS

Applicant:	City of Pierre
Permit Number:	SD-0020176
Contact Person:	Leon Schochenmaier – City Administrator Greg Mohr – Wastewater Superintendent PO Box 1253 Pierre, SD 57501-1253
Phone:	(605) 773-7449
Permit Type:	Major Municipal Wastewater Treatment Facility - Renewal

DESCRIPTION

The city of Pierre Wastewater Treatment Facility (WWTF) is located on the southeast side of the city in the northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44° 21′ 2.4″, Longitude 100° 19′ 24.7″– Navigational Quality, GPS). The facility consists of a gravity flow collection system, aided by nine lift stations, which transports wastewater to a mechanical treatment facility. The facility consists of the following processes: pretreatment, primary clarification, bio-filtration, activated sludge, final clarification, disinfection, dechlorination, sludge digestion, sludge dewatering, and landfilling of sludge.

Pretreatment consists of debris removal via a mechanical bar screen, grinding by two comminutors, an aerated grit removal chamber, and influent flow monitoring by a Parshall flume. Grit and debris removed during pretreatment is hauled to the city of Pierre landfill for disposal.

Primary clarification consists of two clarifiers, operated in parallel, with provisions for the addition of a third. The clarifiers have an overall diameter of 60 ft. with a weir diameter of 53 ft. and a sidewater depth of 8 ft. They have aluminum domes to reduce icing problems. The sludge and scum removed is pumped to the autothermal thermophilic aerobic digestion (ATAD) system.

Secondary treatment begins with a 52-ft. diameter trickling filter. This is followed by two complete mix activated sludge aeration basins operated in parallel. These basins are equipped with fine bubble diffusers. The final step of secondary treatment is final clarification. There are two final clarifiers, operated in parallel, with provisions for the addition of a third. The final clarifiers have an overall diameter of 67 ft. with a weir diameter of 60 ft. and a sidewater depth of 12 ft. Most of the sludge from the final clarifiers is returned to the activated sludge process with a small amount diverted to the dissolved air flotation (DAF) thickener.

The wastewater flows through the effluent Parshall flume to the chlorine contact basin for disinfection and then to the discharge pipe where it is discharged to Lake Sharpe (Missouri River). Sulfur dioxide is added at the outlet of the chlorine contact basin for dechlorination.

Solids handling consists of treating both primary and secondary sludge. The primary sludge is pumped from the primary clarifiers directly to the ATAD system. The secondary sludge is the thickened waste activated sludge from the 36-ft. diameter DAF unit. The DAF thickening

process consists of adhering suspended solid particles to air bubbles causing them to float. These low-density solids are then removed and sent to the ATAD system.

The ATAD system begins with a pre-ATAD tank, which collects the sludge and stores it until there is enough sludge to process. Next, three 30-ft. diameter reactor tanks with an 11-ft. sidewater depth are operated in series. Sludge stabilization occurs in these tanks when the heat generated by the aerobic thermophilic microorganisms during the digestion process destroys the pathogens in the sludge. After stabilization, sludge is pumped to the post-ATAD tanks for cooling prior to dewatering with a belt filter press. The finished biosolids are then landfilled in accordance with the city's sludge permit.

The facility serves a population of 13,879 people (2000 census). The city of Pierre's facility was constructed and began operation in 1962, with upgrades in 1999 and 2000. There are no known industrial users contributing flow the wastewater treatment facility.

RECEIVING WATERS

Any discharge from this facility will enter Lake Sharpe of the Missouri River. South Dakota Surface Water Quality Standards (SDSWQS; 74:51:01:43) classify Missouri River impoundments like Lake Sharpe as flowing streams and not as reservoirs. Lake Sharpe (the Missouri River) is classified by the SDSWQS, Administrative Rules of South Dakota (ARSD), Chapters 74:51:01:44 and 74:51:03:05, for the following beneficial uses:

(1) Domestic water supply waters;
(2) Coldwater permanent fish life propagation waters;
(7) Immersion recreation waters;
(8) Limited-contact recreation waters;
(9) Fish and wildlife propagation, recreation, and stock watering waters;
(10) Irrigation waters; and
(11) Commerce and industry waters.

ANTIDEGRADATION

The South Dakota Department of Environment and Natural Resources (SDDENR) has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedure and the Surface Water Quality Standards (SWQS), no further review is required. The results of SDDENR's review are included in Attachment 1.

SELF MONITORING DATA

A table summarizing the city of Pierre's monitoring data is included in Attachment 3. The data shows that the city has experienced effluent violations for fecal and total coliform. No violations have been reported since June 2004.

INSPECTIONS

The most recent inspection for the Pierre WWTF was an "Operation and Maintenance" inspection, which was conducted on June 29, 2005, by SDDENR personnel. The following comments were made as a result of this inspection:

Requirements

1. There have been a total of three effluent violations since the last Operation and Maintenance inspection (conducted on June 18, 2003).

   In July 2003 and June 2004 the daily maximum fecal coliform readings were 2,300 colonies/100 mL and 500 colonies/100 mL respectively. The daily maximum permit limit for fecal coliform is 400 colonies/100 mL.

   In December 2003 the daily maximum total coliform reading was 160,000 colonies/100 mL. The daily maximum permit limit for total coliform is 20,000 colonies/100 mL.

   Every effort must be made to ensure the discharged effluent is within permit limits in order to protect the environment and maintain compliance with permit conditions. The city is responsible for any and all violations of the SWD permit.

2. The August 2003, March 2004, and April 2005 Discharge Monitoring Reports (DMRs) were submitted a few days late. It is very important that these reports are submitted on-time. The DMRs must be received in our office on or before the 28th day of the month following the reporting period. The DMRs are due on the following dates:

   - January DMRs are due on or before February 28th;
   - February DMRs are due on or before March 28th;
   - March DMRs are due on or before April 28th (the 1st quarter Whole Effluent Toxicity DMR is also due at this time);
   - April DMRs are due on or before May 28th;
   - May DMRs are due on or before June 28th;
   - June DMRs are due on or before July 28th (the 2nd quarter Whole Effluent Toxicity DMR is also due at this time);
   - July DMRs are due on or before August 28th;
   - August DMRs are due on or before September 28th;
   - September DMRs are due on or before October 28th (the 3rd quarter Whole Effluent Toxicity DMR is also due at this time);
   - October DMRs are due on or before November 28th;
   - November DMRs are due on or before December 28th;
   - December DMRs are due on or before January 28th (the 4th quarter Whole Effluent Toxicity DMR is also due at this time).

3. Mr. Mohr is maintaining an inspection notebook for the wastewater treatment facility and recording inspections five days per week. However, the notebook does not contain all of the required information and the SWD permit requires daily facility inspections (even on the weekends).

   The wastewater treatment facility must be inspected every day (including weekends) and all facility inspections conducted by city personnel must be documented in an inspection notebook. At a minimum, the inspection notebook must include the following:

   1. **Date and time of the inspection**;
   2. **Name of the inspector(s);**
   3. The facility's discharge status;
   4. Identification of operational problems and/or maintenance problems;
   5. Recommendations, as appropriate, to remedy identified problems;
   6. A brief description of any actions taken with regard to problems identified; and
   7. Other information, as appropriate.

<u>Recommendations and Comments</u>

1. There were a large number of maggots and flies in the grit storage unit. This could be a human health hazard especially since the wastewater facility is located next to the local softball field complex. The city should look into disposing or bagging of the grit and screenings more often than what is currently done to reduce the amount of maggots and flies (vector attraction reduction).

2. The sludge judge that measures the sludge blanket depth in the clarifiers is broken. The city should purchase a new sludge judge for wastewater personnel to aid in the operation of the activated sludge process.

3. The PVC pipe that encased and protected the Dissolved Oxygen (DO) probe was broken leaving the DO probe and wire unprotected. The DO probe should be checked to ensure it is in good working condition and the PVC pipe protecting the wire and probe should either be fixed or replaced.

4. Most of the wetwells to the lift stations had floating solids present. The lift station pumps are not grinder pumps but can pass solids up to three inches in diameter. The city should consider installing wetwell baskets especially at the Airport Lift Station to prevent solids from getting caught in the pumps and causing a pump failure, which can be quite costly to correct.

5. The mixed liquor volatile suspended solids (MLVSS), food to microbe (F/M) ratio, mean cell residence time (MCRT), and sludge volume index (SVI) are not normally calculated for the activated sludge process. This type of information should be determined to aid in process control of the activated sludge process. Contact Randy Hilding or Chancey Shrake of the Operator Assistance Program at (605) 773-3351 if the operator would like assistance with the activated sludge process controls.

6. The lift station pumps should be calibrated on a regular basis to determine their current pump ratings. By checking and rechecking the pumping rates three or four times per year, pump or motor problems may be detected before a complete failure occurs. Contact Randy Hilding or Chancey Shrake at the number above if the operator would like assistance with the calibration procedure.

7. We would like to encourage you to give Mr. Greg Mohr (and other representatives of the city of Pierre) the opportunity to attend some of the various wastewater training courses sponsored by the state to upgrade their skills and share knowledge concerning the operation and maintenance of municipal wastewater systems. For more information as to dates and locations of upcoming courses in your area, contact South Dakota Association of Rural Water Systems, under contract with SDDENR, at 5009 W 12th Street, Suite 5, Sioux Falls, SD 57106. Phone: (605) 336-7219. Internet website: http://www.sdarws.com.

Biosolids Requirements and Comments

1. The required sludge sampling was not performed for 2004. The sludge must be sampled every year as required by the federal 503 regulations. If you have questions about the Biosolids sampling and reporting requirements, please contact Sarah Speck, Biosolids Coordinator, at (605) 773-3351.

2. The odor control system for the Autothermal Thermophilic Aerobic Digestion (ATAD) process is currently not in use. The odor control system would be very helpful in minimizing the odors produced by the ATAD process and reducing the number of odor complaints in the area. The city should obtain additional training and use the odor control system to minimize odors.

EFFLUENT LIMITS

Effective immediately and lasting through the life of this permit, the facility must meet the following effluent limits that are based on the Secondary Treatment Standards (ARSD §74:52:06:03), the SDSWQS, Best Professional Judgement (BPJ), and the current permit.

Outfall 001 -- Any discharge from the discharge pipeline to Lake Sharpe (Missouri River) (Latitude 44° 20' 45.2", Longitude 100° 19' 12.1" - navigation-quality GPS).

1. The five-day Biochemical Oxygen Demand (BOD_5) concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on the Secondary Treatment Standards.

2. The Total Suspended Solids (TSS) concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on the Secondary Treatment Standards.

3. Percentage Removal Requirements (TSS, BOD_5 limit): In addition to the concentration limit on total suspended solids and BOD_5 indicated above, the arithmetic mean of the total suspended solids and BOD_5 concentration for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal). This limit is based on the Secondary Treatment Standards.

4. The pH shall not be less than 6.6 standard units or greater than 8.3 standard units in any single analysis and/or measurement. These limits are based on current permit limits, to prevent backsliding of the permit limits, and BPJ.

5. Fecal coliform organisms from May 1 to September 30 shall not exceed a concentration of 200 per 100 milliliters as a geometric mean based on a minimum of 5 samples obtained during separate 24-hour periods for any 30-day period***. This limit is only applicable if five or more samples are taken.***

   In addition, fecal coliform organisms shall not exceed 400 per 100 milliliters in any one sample from May 1 to September 30. These limits are based on the immersion recreation beneficial use classification of the Missouri River and the SDSWQS (ARSD § 74:51:01:50).

6. Total coliform organisms may not exceed 5,000 per 100 milliliters as a geometric mean based on a minimum of 5 samples obtained during separate 24-hour periods for any 30-day period. In addition, total coliform may not exceed 20,000 per 100 milliliters in any one sample. These limits are based on the domestic water supply criteria of the Missouri River and the SDSWQS (ARSD § 74:51:01:44).

7. The oil and grease (O&G) concentration shall not exceed 10 mg/L (in any grab sample) or impart a visible film or sheen to the surface of the water or to the adjoining shorelines. This limit is based on the SDSWQS (ARSD § §74:51:01:10 and 74:51:01:52).

8. The total residual chlorine concentration shall not exceed 0.019 mg/L. This limit is based on the warmwater permanent fish life propagation waters of the Missouri River and the SDSWQS (ARSD § 74:51:01:47).

   Note: SDDENR considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent total residual chlorine concentration is less than the analytical detection limit, "<0.05" shall be used for reporting purposes. Total residual chlorine measurements below the detection limit shall not be considered violations of the total residual chlorine limit.

9. There shall be no Acute Toxicity, as measured by the Whole Effluent Toxicity test. This limit is based on the USEPA-Region VIII WET policy for South Dakota, Best Professional Judgement, and the current permit.

Ammonia-Nitrogen, Rate of Discharge, influent TSS, influent BOD, metals, cyanide, phenols, dissolved oxygen, and temperature will be monitored but will have no limits.

SELF-MONITORING REQUIREMENTS

Samples from outfall 001 shall be taken at the noted frequency and with the listed sample type:

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Rate of Discharge, MGD	Continuous	Daily Maximum; 30-day Average	Instantaneous
pH, standard units	Daily	Daily Minimum; Daily Maximum	Instantaneous [2]
Oil and Grease, mg/L [3]	Daily	Presence or absence of sheen; Daily Maximum	Visual/Grab
BOD_5, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
BOD_5, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Total Suspended Solids, mg/L	Three Times/Week	Max. 7-day Average; 30-day Average	24-hour Composite
Total Suspended Solids, mg/L (Influent) [4]	Three Times/Week	30-day Average	24-hour Composite
Fecal Coliform, no./100 mL (May 1 – September 30)	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Total Coliform, no./100 mL	Three Times/Week [5]	Daily Maximum; 30-day Geometric Mean	Grab
Ammonia-Nitrogen, mg/L (as N) [6]	Weekly	Daily Maximum; 30-day Average	Grab

[1] See Definitions.

[2] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[3] Oil and grease shall be visually monitored during discharge. In the event that an oil sheen or floating oil is observed during discharge, grab samples shall be taken immediately, analyzed and reported.

[4] The percent removal between the influent and effluent values for this parameter shall also be reported.

[5] For fecal and total coliforms, if a minimum of five samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time as BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. ***This sampling protocol for fecal coliforms, only applies if the discharge occurs between May 1 and September 30.***

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Total Residual Chlorine, mg/L (Required only if effluent is chlorinated)	Daily	Daily Maximum [7]	Grab
Dissolved Oxygen, mg/L	Weekly	Daily Minimum	Grab
Water Temperature, °C	Weekly	Daily Maximum; 30-day Average	Instantaneous [8]
Percent Removal (TSS and BOD_5)	Monthly	30-day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [9]	Pass/Fail	Grab
Parameters listed in ARSD, Section 74:52:02:42 and Molybdenum	Annually	Actual Results	As required[10]

If the permittee, using the approved analytical methods, monitors any parameter more frequently than required by this permit, then the results of all monitoring shall be included in the calculation and reporting of values required in the Discharge Monitoring Report (DMR) form. All of the samples collected during the 7-day or 30-day period are to be used in determining the averages. If only one sample is collected during the period, it must be considered the same as the average of the period. The permittee has the option of collecting additional samples if appropriate. DMRs signed by the principal executive officer will be submitted to SDDENR **every month**. If "no discharge" occurs during that monitoring period, it shall be stated as such on the form.

Monitoring shall consist of **daily** inspections of the mechanical processes of the facility. Inspections of lift stations shall occur at least **twice per week**. Daily inspections of the lift stations are recommended. Documentation of each of these visits shall be recorded in a notebook to be reviewed by the EPA or SDDENR personnel when an inspection occurs.

[7] EPA considers the analytical detection limit for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, “0” shall be used for reporting and averaging purposes.

[8] The water temperature of the effluent shall be taken as a field measurement at the time of sampling. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[9] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[10] See Section 2.1 for sampling requirements.

WHOLE EFFLUENT TOXICITY (WET) TESTING

The city of Pierre shall test for acute toxicity according to the requirements of the permit. Acute toxicity shall be tested on a quarterly basis using both *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnows). If acute toxicity occurs, an additional test shall be conducted within two weeks of the date of the initial sample. The yearly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting quarter.

If the results for four consecutive quarters of testing indicate no acute toxicity, the permittee ay request the permit issuing authority to allow a reduction to quarterly acute toxicity testing on only one species on an alternating basis. The permit issuing authority may approve or deny the request based on the results and other available information without an additional public notice.

BIOSOLIDS

SDDENR is issuing the city of Pierre an individual Biosolids Management permit (SDL020176). Therefore, the proposed Surface Water Discharge permit shall not contain sludge disposal requirements.

ENDANGERED SPECIES

Attachment 2 contains information on listed threatened and endangered species in the discharge location. This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit.

PERMIT CONTACT

Any questions pertaining to this statement of basis can be directed to Chancey E. Shrake, P.E., Natural Resources Project Engineer for the Surface Water Quality Program, at (605) 773-3351.

August 24, 2006

Attachment 1

Antidegradation Review Worksheet

Permit Type: **Major Municipal Renewal** Applicant: **City of Pierre**

Date Received: **11/21/05** Permit #: **SD0020176**

County: **Hughes** Legal Description: **NE1/4 of S10, T5N, R79W**

Receiving Stream: **Lake Sharpe (Missouri River)** Classification: **1, 2, 7, 8, 9, 10, 11**

If the discharge affects a downstream waterbody with a higher use classification, list its name and uses: _____

APPLICABILITY

Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:

- ☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
- ☐ *Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;
- ☐ *Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
- ☐ *The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
- ☐ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
- ☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
- ☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
- ☒ Other: This permit does not authorize an increase in permit limits.

*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

No further review required.

ANTIDEGRADATION REVIEW SUMMARY

The outcome of the review is:

☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.

☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.

☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.

☐ The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.

☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.

☐ Other:

Describe any other requirements to implement antidegradation or any special conditions that are required as a result of this antidegradation review: _____

Chancey E. Shrake, P.E.	August 24, 2006
Reviewer	Date
Kelli D. Buscher, P.E.	August 24, 2006
Team Leader	Date

Attachment 2

Endangered Species In Hughes and Stanley Counties

ENDANGERED SPECIES BY COUNTY LIST

(updated 18 May 2006)

STATE: SOUTH DAKOTA

T - Threatened

E - Endangered

XN - Proposed/Experimental Population

CH - Critical Habitat

PCH - Proposed Critical Habitat

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE	STATUS
HUGHES and STANLEY	BIRD	CRANE, WHOOPING	KNOWN	E
		EAGLE, BALD	KNOWN	T
		PLOVER, PIPING	KNOWN	T (CH)
		TERN, LEAST	KNOWN	E
	FISH	STURGEON, PALLID	KNOWN	E

Attachment 3

Self Monitoring Data

DMR Date	FINAL Effluent BOD5, 30D Avg, mg/L	FINAL Effluent BOD5, Max 7D Avg, mg/L	FINAL % BOD5 % Removal, Min % Removal, %	FINAL Effluent TRC, Dly Max, mg/L	FINAL Effluent Fecal Coliform, 30D Geo, #/100 mL	FINAL Effluent Fecal Coliform, Dly Max, #/100 mL	FINAL Effluent Total Coliform, 30D Geo, #/100 mL	FINAL Effluent Total Coliform, Dly Max, #/100 mL	FINAL Effluent O&G, Dly Max, mg/L	FINAL Effluent pH, Min, SU	FINAL Effluent pH, Max, SU	FINAL % TSS % Removal, Min % Removal, %	FINAL Effluent TSS, 30D Avg, mg/L	FINAL Effluent TSS, Max 7D Avg, mg/L
	30	*45*	*85*	*0.019*	*200*	*400*	*5000*	*20000*	*10*	*6.6*	*8.3*	*85*	*30*	*45*
04/30/2001	6	6	96	0			147	500		6.95	7.51	93	12	17
05/31/2001	6	7	98	0	13	23	182	1700		6.86	7.47	98	10	13
06/30/2001	4	5	99	0	17	130	96	800		7	7.34	99	8	13
07/31/2001	5	7	98	0	64	17000	776	160000		7	7.71	99	9	11
08/31/2001	4	4	98	0	10	1300	142	17000		6.82	7.37	99	5	8
09/30/2001	4	5	98	0	18	130	419	5000		6.89	7.16	99	9	12
10/31/2001	4	5	98	0			93	3000		6.91	7.43	99	6	8
11/30/2001	4	6	98	0			83	500		6.66	7.76	98	8	12
12/31/2001	4	4	98	0			44	500		6.64	7.83	99	3	4
01/31/2002	5	7	98	0			47	240		6.78	7.64	99	9	12
02/28/2002	6	5	97	0			103	700		6.9	8.28	96	15	20
03/31/2002	4	10	98	0			45	300		6.66	8	99	4	8
04/30/2002	3	4	98	0			70	300		6.94	7.88	98	5	6
05/31/2002	4	5	98	0	5	500	53	2300		7.1	7.74	99	3	5
06/30/2002	3	3	98	0	7	300	76	1700		6.98	7.37	99	4	5
07/31/2002	4	4	98	0	12	900	142	2200		6.8	7.15	99	4	6
08/31/2002	4	5	98	0	8	23	188	8000		6.86	8.09	98	3	3
09/30/2002	4	5	98	0	5	30	126	1400		6.83	7.27	96	7	12
10/31/2002	4	6	98	0			58	900		6.93	7.2	95	10	13
11/30/2002	5	7	98	0			48	1100		6.74	7.05	96	7	24
12/31/2002	5	7	98	0			86	1700		6.69	7.82	96	8	8
01/31/2003	6	8	97	0			11.7	700		6.62	7.12	95	8	15
02/28/2003	7	9	97	0			67	300		6.67	7.92	94	8	12
03/31/2003	6	8	97	0			63	240		6.68	7.13	97	6	8
04/30/2003	5	7	98	0			39	230		6.73	7	96	10	21
05/31/2003	4	4	98	0	5	30	47	1600		6.76	7.34	97	5	7
06/30/2003	5	5	97	0	8	170	63	2300		6.86	7.36	97	5	6
07/31/2003	4	5	98	0	8	2300	69	2300		6.67	7.92	97	7	8
08/31/2003	3	4	98	0	6	30	67	1100	0	6.78	7.37	97	7	10
09/30/2003	6	7	98	0	10	130	194	16000		6.75	7.84	99	13	17
10/31/2003	6	6	98	0			101	900		6.64	8.21	99	13	18

DMR Date	FINAL Effluent BOD5, 30D Avg, mg/L	FINAL Effluent BOD5, Max 7D Avg, mg/L	FINAL % BOD5 % Removal, Min % Removal, %	FINAL Effluent TRC, Dly Max, mg/L	FINAL Effluent Fecal Coliform, 30D Geo, #/100 mL	FINAL Effluent Fecal Coliform, Dly Max, #/100 mL	FINAL Effluent Total Coliform, 30D Geo, #/100 mL	FINAL Effluent Total Coliform, Dly Max, #/100 mL	FINAL Effluent O&G, Dly Max, mg/L	FINAL Effluent pH, Min, SU	FINAL Effluent pH, Max, SU	FINAL % TSS % Removal, Min % Removal, %	FINAL Effluent TSS, 30D Avg, mg/L	FINAL Effluent TSS, Max 7D Avg, mg/L
11/30/2003	6	8	98	0			129	1700		6.74	7.79	98	20	27
12/31/2003	7	11	97	0			218	160000		6.68	7.2	99	12	20
01/31/2004	4	5	99	0			42	1700		6.62	8.11	99	15	41
02/29/2004	3	4	99	0			23	110		7.12	8.3	99	8	10
03/31/2004	4	5	99	0			18	170		6.69	8.3	99	6	8
04/30/2004	4	7	99	0			22	1300		6.75	8.12	99	13	37
05/31/2004	3	4	99	0	3	13	39	1600		6.78	7.32	98	18	38
06/30/2004	4	5	99	0	8	500	57	500		6.82	8.26	99	16	36
07/31/2004	5	6	99	0	6	13	94	500		6.83	8.21	99	11	15
07/31/2004	5	6	99	0	6	13	94	500		6.83	8.21	99	11	15
08/31/2004	5	6	99	0	4	23	117	2400	0	6.72	8.15	99	16	17
09/30/2004	6	7	98	0	7	30	60	300	0	6.77	8.23	97	14	19
10/31/2004	4	5	98	0.01			44	170		6.77	8.26	98	12	16
11/30/2004	5	8	98	0			28	90		6.63	8.3	98	21	33
12/31/2004	6	8	98	0			72	9000		6.72	7.2	99	14	22
01/31/2005	5	6	98	0			17	170		6.76	8.28	98	8	12
02/28/2005	6	8	97	0			39	130		6.83	7.94	98	14	21
03/31/2005	7	10	96	0			40	300		6.99	8.3	98	9	11
04/30/2005	5	6	98	0			20	50		6.85	8.04	98	9	12
05/31/2005	4	5	97	0	2	4	17	80		6.82	8.22	99	8	10
06/30/2005	5	5	96	0	6	27	56	600		6.99	7.68	98	10	16
07/31/2005	4	7	98	0	8	50	78	300		6.94	7.59	98	13	19
08/31/2005	4	5	97	0	9	27	61	300		7.2	7.73	99	7	7
09/30/2005	4	5	98	0	13	50	113	900		7.05	7.81	98	12	15
10/31/2005	4	4	98	0			20	140		6.91	7.86	99	8	12
11/30/2005	4	6	98	0			31	130		7.1	7.52	99	8	14
12/31/2005	7	9	96	0			211	170		6.99	7.61	98	13	18
01/31/2006	6	9	96	0			60	500		7	7.48	98	13	20

APPENDIX B

SDDENR BIOSOLIDS MANAGEMENT PERMIT AND STATEMENT OF BASIS

Permit No: SDL020176

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SD 57501-3182

BIOSOLIDS MANAGEMENT PERMIT

AUTHORIZING DISPOSAL OF BIOSOLIDS

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the City of Pierre

is authorized under this permit to landfill biosolids from its wastewater treatment works on the southeast side of the city in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44.350661º, Longitude -100.323538º) in accordance with specific limits, monitoring requirements, management practices, and other conditions set forth herein. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modifications; or for denial of a permit renewal application.

This permit shall become effective **April 1, 2013.**

This permit and the authorization to discharge shall expire at midnight, **March 31, 2018.**

Signed this 25th day of March, 2013.

_____
Authorizing Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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DEFINITIONS

30-day (and monthly) average means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting.

ARSD means the Administrative Rules of South Dakota**.**

Agronomic Rate is the whole biosolids application rate (dry weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation growth on the land; and (2) minimize the amount of nitrogen in the biosolids that passes below the root zone of the crop or vegetation grown on the land to the ground water.

The **Approval Authority** is the Secretary of the South Dakota Department of Environment and Natural Resources, or designated representative.

Animals for the purposes of this permit are domestic livestock.

Annual Pollutant Loading Rate is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

Annual Whole Biosolids Application Rate is the amount of biosolids (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.

Application Site or Land Application Site means all contiguous areas of a users' property intended for biosolids application.

Batch is when a pile of biosolids is created, allowed to sit for a specific period of time and then removed from the site. A batch of biosolids could be a compost pile or long-term treatment piles.

Biosolids means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

Bulk Biosolids is biosolids that is not sold or given away in a bag or other container for application to the land.

Ceiling Concentration is the maximum concentration limits for 9 heavy metal pollutants in biosolids; specifically arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc. If a limit for any one of the pollutants is exceeded, the biosolids cannot be applied to the land.

CFU/gram is the number of colony forming fecal coliform units per gram of biosolids on a dry weight basis.

Composite Biosolids Sample is a sample taken either in a wastewater treatment process, dewatering facility, or application device consisting of a series of individual grab samples. For liquid biosolids, a minimum of three grab samples of 500 milliliters taken during the first one-third, second one-third and final one-third of a pumping cycle and combined in equal volumetric amounts. For semi-dewatered, dewatered or dried biosolids, a composite sample consisting of a minimum of three grab samples of 0.5 pounds taken over a period of 24 hours not less than two hours apart or another representative sample as defined or approved by the permitting authority.

Cumulative Pollutant Loading Rate is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

CWA means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92-500, as amended by Pub. L 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4.

Daily Maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

Dry Weight Basis means 100 percent solids (i.e. zero percent moisture).

A **geometric mean**, unlike an arithmetic mean, tends to dampen the effect of very high or low values, which might bias the mean if a straight average (arithmetic mean) were calculated. This is helpful when analyzing bacteria concentrations, because levels may vary anywhere from 10 to 10,000 fold over a given period.

A **Grab Sample**, for monitoring requirements, is a single "dip and take" sample collected at a representative point in wastewater treatment or biosolids land application processes.

Grit and Screenings are sand, gravel, cinders, or other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works and shall be disposed of according to 40 CFR 258.

Ha means hectare. One hectare equals 2.47 acres.

High Potential for Public Contact Site includes but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

IU means industrial user.

An **Instantaneous Measurement**, for monitoring requirements, is a single reading, observation, or measurement either taken instantaneously at the facility or within 15 minutes of the sample.

Kg/Ha is kilogram of pollutants per hectare of land.

Kg/Ha/Yr is the kilograms of pollutants applied to a hectare of land in a single calendar year.

Land Application is the spraying or spreading of biosolids onto the land surface; the injection of biosolids below the land surface; or the incorporation of biosolids into the land so the biosolids can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of biosolids).

Low Potential for Public Contact Site includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are generally not accessible to or used by the public.

MPN/gram is the most probable number of fecal coliform bacteria per gram of biosolids on a dry weight basis.

Monthly Average is the arithmetic mean of all measurements taken during the month.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

Pathogen means an organism that is capable of producing an infection or disease in a susceptible host.

PFRP means Processes to Further Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of composting, heat drying, heat treatment, thermophilic aerobic digestion, irradiation or pasteurization.

Pollutant for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly through the food-chain, could, on the basis of information available, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organism or offspring of the organisms.

Pollutant Limit is a numerical value that describes the maximum amount of a pollutant allowed per unit amount of biosolids (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of microorganisms per unit amount of biosolids (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of a pollutant allowed in plant tissue (e.g., parts per million).

PSRP means Processes to Significantly Reduce Pathogens, as described in detail in 40 CFR Part 257, Appendix II and consists of aerobic digestion, air drying, anaerobic digestion, composting, or lime stabilization.

A **Publicly-owned Treatment Works** or **POTW** is any device or system used in the treatment, including recycling and reclamation of municipal sewage or industrial waste of a liquid nature, which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off over the land surface.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or other authorized representative.

Severe Property Damage is substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources, which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sludge is any solid, semi-solid, or liquid residue generated during the treatment of municipal wastewater or domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in the Treatment Works. Sludge includes but is not limited to domestic septage, scum or solids removed during primary, secondary, or advanced wastewater treatment, portable toilet pumpings, and sludge products. Sludge does not include grit, screenings, or ash generated during the incineration of biosolids.

Similar Container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Specific Oxygen Uptake Rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the biosolids.

Total Solids are the materials in the biosolids that remain as residue if the biosolids is dried at 103 to 105 degrees Celsius.

TSS means Total Suspended Solids. TSS is a measure of the filterable solids present in a sample.

Unstabilized Solids are organic materials in biosolids that have not been treated in either an aerobic or anaerobic treatment process.

Vector Attraction is the characteristic of biosolids that attracts rodents, flies, mosquitoes or other organism capable of transporting infectious agents.

Volatile Solids is the amount of the total solids in biosolids lost when the biosolids is combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

1.0 BIOSOLIDS LIMITS AND MONITORING REQUIREMENTS

1.1. Description of Biosolids Generating Facilities

The authorization to land apply treated biosolids provided under this permit is limited to those biosolids produced from the treatment works owned and operated by the permittee specifically designated below.

Outfall Number	Description of Biosolids Source(s)
201	Biosolids produced at the City of Pierre's wastewater treatment facility that are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered, and then disposed of at the city's municipal landfill.

1.2. Change in Treatment System or Use/Disposal Practices

The permittee must inform the SDDENR in writing at least 180 days prior to any significant change in the biosolids generation and handling processes at the plant and any major change in use/disposal practices. This includes, but is not limited to, the addition or removal of biosolids treatment units (e.g., digesters, drying beds, etc.) and/or any other change which would require a major modification of the permit (e.g., changing from landfill disposal to land application).

1.3. Biosolids Limits – *Outfall 201*

Effective immediately and lasting through the life of this permit, all biosolids generated by this facility to be disposed of at an appropriate permitted landfill shall meet the requirements listed.

1.3.1 Chemical

Biosolids disposed in an approved landfill shall pass the paint filter and Toxicity Characterization Leaching Procedure (TCLP) tests. In addition, the permittee shall comply with any additional testing requirements imposed by the landfill.

1.3.2 Vector Attraction Reduction

The permittee is required to reduce the potential for attracting vectors such as mosquitoes. The biosolids shall meet the following alternative for vector attraction reduction (VAR):

- Biosolids disposed at a landfill shall be covered with soil or other material at the end of each operating day.

There are additional approved alternatives for reducing vector attraction available in 40 CFR 503.33 (a.b.r. in ARSD Chapter 74:52:09). If the permittee intends to use one of these alternatives, SDDENR must be informed in writing at least 30 days prior to its use. ***This change may be made without additional public notice.***

1.4. Self-Monitoring Requirements

1.4.1 *Biosolids Monitoring*

Effective immediately and lasting throughout the life of the permit, all biosolids disposed of at an appropriate permitted landfill shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the nature of the biosolids.

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test[1]	Annually or prior to disposal at landfill	Pass or Fail	Grab
Toxicity Characterization Leaching Procedure (TCLP)[1]	Once every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

1.5. Best Management Practices

Therefore, the facility shall operate in accordance with the following requirements:

1. The permittee has an approved biosolids management plan. If the permittee would like to amend its Biosolids Management Plan, it must notify SDDENR in writing at least 30 days prior to the change for review and approval.
2. Landfill disposal shall be conducted in a manner that will not contaminate the groundwater underlying the site.
3. Landfill disposal shall be conducted in a manner that will not cause or contribute to a violation of any receiving water quality standard from discharges of surface runoff.
4. Landfill disposal shall not cause or contribute to the harm of threatened or endangered species or result in the destruction or modification of critical habitat of threatened or endangered species.
5. Landfill disposal shall not restrict the flow of a 100-year flood.
6. Public access to the site shall be restricted so the public is not exposed to potential health and safety hazards.

1.6. Recordkeeping Requirements

The permittee is to retain the following records for at least five years. These recordkeeping requirements are dependent upon the quality of biosolids produced by the permittee. At a minimum, the following records shall be kept:

1. A copy of the analytical results for the Paint Filter Tests, percent solids, and the TCLP.
2. A description of how the vector attraction reduction requirements were met;
3. A description of how the best management practices were met;

4. Yearly certification statements for landfilled biosolids stating that the vector attraction reduction and management practices were met. The certification statement shall be as follows:

   "I certify under penalty of law the vector attraction reduction method in Part 1.3.2 of the permit and best management practices in Part 1.5 of the permit have been met and that the biosolids were disposed at a facility in compliance with 40 CFR 258. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."

1.7. Reporting Requirements

The permittee is required to monitor, collect, and provide the following information for each reporting year:

1. The total amount of biosolids, in dry metric tons, that is generated by the facility during the reporting year;
2. A summary of any biosolids received from other facilities:
   a) Summary of total amount of biosolids received, in dry metric tons;
   b) Summary of amount of biosolids received from each individual facility, in dry metric tons;
   c) Name of each facility sending biosolids; and
   d) Location of each facility.
3. A summary of any biosolids sent to other facilities/operations:
   a) Summary of total amount of biosolids sent to other facilities, in dry metric tons;
   b) Summary of amount of biosolids sent to each individual facility, in dry metric tons;
   c) Name of each facility receiving biosolids; and
   d) Location of each facility.
4. The amount of biosolids, in dry metric tons, placed in storage during the reporting year and the total amount of biosolids already in storage and how long it has been stored.
5. The amount of biosolids disposed of at the landfill during the reporting year.

The permittee shall develop an annual biosolids report. This report shall include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, information on best management practices, and certifications. This report shall be submitted to SDDENR no later than **February 19th of each year**. Each report is for the previous calendar year.

1.8. Special Conditions on Biosolids Storage

Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from SDDENR. Storage of biosolids for more than two years will only be allowed if it is determined that significant treatment is occurring. During the storage of biosolids, controls shall be put into place to prevent runoff of the biosolids from the storage site.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1. Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from locations representative of the quality of biosolids generated at the treatment works and immediately prior to land application.

2.2. Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under 40 CFR Part 503 (a.b.r in ARSD Chapter 74:52:09), unless other test procedures have been specified in this permit.

2.3. Reporting of Monitoring Results

The permittee is required to report annually as required in 40 CFR 503.18 (a.b.r in ARSD Chapter 74:52:09). This report is to include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, the required information on pathogen requirements, vector attraction reduction requirements, information on management practices, land application sites, site restrictions, and the required signed certification statements. This report shall be submitted no later than **February 19th of each year**. Each report is for the previous calendar year. If no biosolids were applied during the reporting period, "no biosolids were applied" shall be reported. Biosolids monitoring results may be reported in the testing laboratory's normal format. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary at the following addresses:

original to: South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
PMB 2020
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501-3182

copy to: Regional Biosolids Program
Wastewater Unit (8P-W-WW)
U.S. EPA, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

2.4. Signatory Requirements

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a) The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

2.5. Additional Monitoring by the Permittee

If the permittee monitors, at the designated points, any pollutants more frequently than required by this permit, using test procedures approved under 40 CFR 503 (a.b.r. in ARSD, Section 74:52:09) or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit and shall be submitted in the Annual Biosolids report. Such increased frequency shall also be indicated.

2.6. Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses were initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7. Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9. Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of biosolids produced, or could result in noncompliance with permit conditions.

2.10. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all

reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Annual Biosolids Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. The following instances of noncompliance shall be reported by telephone to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. – 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances: violation of any of the Table 1 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that has been land applied.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a) A description of the noncompliance and its cause;
   b) The period of noncompliance, including exact dates and times;
   c) The estimated time noncompliance is expected to continue if it has not been corrected; and,
   d) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Section 2.3 of this permit.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12. Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11 paragraph 3.

2.13. Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1. Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the Secretary advance notice of any activity which may result in permit noncompliance.

3.2. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any land application of biosolids in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance. This may include but is not limited to, all treatment, transportation, and application equipment which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5. Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit including but not limited to biosolids treatment, collection, storage, facilities or area, transport vehicles and containers, and land application sites; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location including but not limited to digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites, or biosolids, soils, or any vegetation on land application sites.
5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, so that the Secretary or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

3.6. Removed Substances

Collected screenings, grit, solids, biosolids, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to land apply biosolids under this permit.

3.8. Availability of Reports

Except for data determined to be confidential under ARSD, Section 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and biosolids data shall not be considered confidential.

3.9. Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, and exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation, or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state, or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state, or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.11. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedules, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit and/or it has been determined that the permittee's biosolids use and/or land application practices do not comply with existing applicable state or federal regulations.

3.12. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1. Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Nothing in this permit shall be construed to relieve the permittee of the civil of criminal penalties for noncompliance.

4.2. Penalties for Tampering

Any person who falsifies, tampers with, or knowingly render inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3. Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the federal Clean Water Act.

STATEMENT OF BASIS

Applicant:	City of Pierre
Permit Number:	SDL020176
Contact Person:	Laurie Gill, Mayor Leon Schochenmaier, City Administrator Greg Mohr, Wastewater Superintendent PO Box 1253 Pierre, SD 57501-1253
Phone:	(605) 773-7407 (city hall) (605) 773-7449 (wastewater facility)
Permit Type:	Biosolids Management Permit – Renewal

This document is intended to explain the basis for the requirements contained in the proposed Biosolids Management Permit. This document provides guidance to aid in complying with the permit regulations. This guidance is not a substitute for reading the proposed permit and understanding its requirements.

DESCRIPTION OF OPERATIONS

The wastewater treatment facility (WWTF) for the city of Pierre serves a population of 13,646 people (2010 census). The facility is located on the southeast side of the city in the Northwest ¼ of Section 10, Township 110 North, Range 79 West, in Hughes County, South Dakota (Latitude 44.350661º, Longitude -100.323538º - Navigational Quality, GPS.)

The city of Pierre's wastewater treatment facility was constructed and began operation in 1962. The facility consists of a gravity flow collection system, aided by nine lift stations, which transports wastewater to a mechanical treatment facility which was upgraded in 1989, in 1999, and 2000. The upgraded facility consists of the following processes: pretreatment, primary clarification, biofiltration, activated sludge, final clarification, disinfection, dechlorination, sludge digestion, sludge dewatering, and landfilling of sludge.

Pretreatment consists of debris removal via a mechanical bar screen, grinding by two comminutors, an aerated grit removal chamber, and influent flow monitoring by a Parshall flume. Grit and debris remove during pretreatment are hauled to the city of Pierre's landfill for disposal.

Primary clarification consists of two clarifiers, operated in parallel, with provision for the addition of a third. The clarifiers have a diameter of 60 ft. with a weir diameter of 53 ft. and a sidewater depth of 8 ft. They also have aluminum domes to reduce icing problems. The sludge and scum removed are pumped to the autothermal thermophilic aerobic digestion (ATAD) system.

Secondary treatment begins with a 52-ft. diameter trickling filter. This is followed by two complete-mix activated sludge aeration basins operated in parallel. These basins are equipped with fine bubble diffuser systems. The final step of the secondary treatment is final clarification. There are two final clarifiers, operated in parallel, with provision for the addition of a third. These clarifiers have an overall diameter of 67 ft. with a weir diameter of 60 ft. and a sidewater depth of 12 ft. Most

of the sludge from the final clarifiers is returned to the activated sludge process with a small amount diverted to the dissolved air flotation (DAF) thickener.

The wastewater flows through the effluent Parshall flume to the chlorine contact basin for disinfection and then to the discharge pipe where it is discharged to Lake Sharpe (Missouri River). Sulfur dioxide is added at the outlet of the chlorine contact basin for dechlorination.

DESCRIPTION OF BIOSOLIDS TREATMENT AND DISPOSAL

Solids handling consists of treating both primary and secondary sludge. The primary sludge is pumped from the primary clarifiers directly to the ATAD system. The secondary sludge is the thickened waste activated sludge from the 36-ft. diameter DAF unit. The DAF thickening process consists of adhering suspended solid particles to air bubbles causing them to float. These low-density solids are then removed and sent to the ATAD system.

The ATAD system begins with a pre-ATAD tank, which collects the sludge and stores it until there is enough sludge to process. Next, are three 30-ft. diameter reactor tanks with an 11-ft. sidewater depth that are operated in series. Sludge stabilization occurs in these tanks when the heat generated by the aerobic thermophilic microorganisms during the digestion process destroys the pathogens in the sludge. After stabilization, the sludge is pumped to the post-ATAD tanks for cooling prior to dewatering with a belt filter press. The finished biosolids are then landfilled.

The city also has two drying beds and two concrete storage basins by the airport that can be used for additional storage in case the belt filter press is offline or if biosolids cannot be immediately landfilled.

The permittee landfilled the following amounts of biosolids:

- 270.2 Dry Metric Tons (dmt) in 2011
- 173.8 dmt in 2010
- 161.0 dmt in 2009
- 169.9 dmt in 2008
- 139.4 dmt in 2007
- 152.6 dmt in 2006

Outfall Number	Description of Biosolids Sources
201	Biosolids produced at the City of Pierre's wastewater treatment facility that are digested in an autothermal thermophilic aerobic digestion (ATAD) system, dewatered, and then disposed of at the city's municipal landfill.

MONITORING DATA

Chemical

There are no metal limits on biosolids that are disposed of at the landfill. The facility is required to pass a paint filter test and toxicity characterization leaching procedure (TCLP). The city has

been submitting paint filter test results in the annual biosolids report. A TCLP was submitted to the department on January 25, 2013.

Pathogen Reduction
There are no Pathogen Reduction requirements for biosolids disposed of in a landfill.

Vector Attraction Reduction
The permittee has been certifying that biosolids disposed of at the landfill have met vector attraction reduction requirements by being covered daily at the disposal site.

INSPECTIONS

Personnel from South Dakota Department of Environment and Natural Resources (SDDENR) conducted an inspection of the city of Pierre wastewater treatment facility on September 26, 2012. Biosolids management was evaluated during this inspection. The following comment concerning biosolids were noted.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The city does not have a current biosolids management plan. ***This was mentioned in the previous biosolids inspection.***	Section 1.5 of the city's biosolids management permit requires the city to develop a Biosolids Management Plan. The city shall submit a biosolids best management plan to the department by **November 30, 2012** for review and approval**.** The plan shall include all of the information required in the city's permit. Once approved, the biosolids management plan becomes an enforceable part of the city's biosolids management permit. [The biosolids management plan was submitted and approved by the department on January 31, 2013]

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The facility is not sampling their biosolids for the Toxicity Characteristic Leaching Procedure (TCLP). ***This was mentioned in the previous biosolids inspection.***	The city is required by Section 1.4.1 of their permit to perform a TCLP analysis once every five years. The city needs to collect a sample of the biosolids and have it analyzed for the TCLP-metals. The sample results shall be submitted with the response due **November 30, 2012.** If the city cannot submit results of a TCLP test by November 30, 2012, an explanation shall be submitted with the November 30, 2012 report as to why a sample results could not be submitted. In this situation, the TCLP sample results shall be provided to SDDENR as soon as possible. [Results were submitted January 25, 2013]
The city submitted the 2008 and 2009 annual biosolids report late. The 2010 and 2011 annual reports were submitted on time.	The city is required to submit an annual report by **February 19th** of the year following the reporting year. The city needs to continue submitting their report on time.

BIOSOLIDS LIMITS

Effective immediately and lasting through the life of this permit, all biosolids generated by this facility and disposed of at an appropriate landfill shall meet the requirements listed below based on Best Professional Judgement (BPJ).

The facility shall dispose of its biosolids in an appropriate permitted landfill as defined in 40 CFR 258. This disposal must comply with the state's solid waste regulations. Not all landfills in the state are permitted to accept biosolids. For more information about disposing of biosolids in an appropriate landfill, please contact the Waste Management Program at (605)773-3153.

Chemical

There will be no metals limits in the proposed permit. However, the biosolids produced by the facility must comply with the monitoring requirements, including passing the paint filter test, the TCLP, and testing for percent solids. If the biosolids fail either the paint filter or the TCLP tests, the biosolids cannot be sent to the landfill. The facility must annually report the amount of biosolids disposed of at the landfill.

Pathogens

There will be no pathogen reduction requirements for biosolids that are disposed of at an appropriate landfill.

Vector Attraction Reduction
The permittee is required to reduce the potential for attracting vectors such as mosquitoes. The biosolids shall meet the following alternative for vector attraction reduction:

- Biosolids disposed of at a landfill shall be covered with soil or other material at the end of each operating day.

There are additional approved alternatives for reducing vector attraction available in 40 CFR 503.33 (a.b.r. in ARSD Chapter 74:52:09). If the permittee intends to use one of these alternatives, SDDENR must be informed in writing at least 30 days prior to its use. ***This change may be made without additional public notice.***

SELF MONITORING REQUIREMENTS

Biosolids Monitoring
Effective immediately and lasting through the life of the permit, all biosolids disposed of at an appropriate permitted landfill shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the nature of the biosolids.

Parameter	Frequency	Reporting Values	Sample Type
Total Solids, percentage (%)	Prior to disposal at the landfill	Percent Solids	Grab or composite
Paint Filter Test[1]	Annually prior to disposal at landfill	Pass or Fail	Grab
TCLP[1]	Every 5 years	Pass or Fail	Grab
Total amount of biosolids disposed of at landfill, dry metric tons	Annually	Actual Value	Calculate

[1] Biosolids disposed of at an appropriate permitted landfill must be tested for compliance with the 40 CFR Part 258 regulations. This includes a Paint Filter Test using the method specified in EPA SW-846 *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, Method 9095 and a Toxicity Characterization Leaching Procedure (TCLP) using Method 1311. The permittee shall also contact the landfill for additional testing requirements that the permitted landfill may have.

BEST MANAGEMENT PRACTICES

The facility shall operate in accordance with the following best management practices:

1. On January 31, 2013, the city of Pierre submitted a Biosolids Management Plan that was approved by SDDENR. Because the revised Biosolids Management Plan was submitted prior to permit issuance, SDDENR is waiving the requirement that the city of Watertown submit a current Biosolids Management Plan within 180 days of permit issuance. The current plan will be an enforceable part of the proposed permit. In general, the plan shall include all of the elements found in Attachment 1.

If the permittee would like to amend its Biosolids Management Plan, it must notify SDDENR in writing at least 30 days prior to the change for review and approval.

2. Landfill disposal shall be conducted in a manner that will not contaminate the groundwater underlying the site.
3. Landfill disposal shall be conducted in a manner that will not cause or contribute to a violation of any receiving water quality standard from discharges of surface runoff.
4. Landfill disposal shall not cause or contribute to the harm of threatened or endangered species or result in the destruction or modification of critical habitat of threatened or endangered species.
5. Landfill disposal shall not restrict the flow of a 100-year flood.
6. Public access to the site shall be restricted so the public is not exposed to potential health and safety hazards.

REQUIRED RECORDKEEPING

The permittee is to retain the following records for at least five years. These recordkeeping requirements are dependent upon the quality of biosolids produced by the permittee. At a minimum, the following records shall be kept:

1. A copy of the analytical results for the Paint Filter Tests, percent solids, and the TCLP.
2. A description of how the vector attraction reduction requirements were met;
3. A description of how the best management practices were met;
4. Yearly certification statements for landfilled biosolids stating that the vector attraction reduction and management practices were met. The certification statement shall be as follows:

> *"I certify under penalty of law the vector attraction reduction method in Part 1.3.2 of the permit and best management practices in Part 1.5 of the permit have been met and that the biosolids were disposed at a facility in compliance with 40 CFR 258. This determination has been made under my direction and supervision in accordance with the system designed to assure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements, the vector attraction reduction requirements, the management practices and the site restrictions have been met. I am aware that there are significant penalties for false certification including the possibility of imprisonment."*

REPORTING REQUIREMENTS

The permittee is required to monitor, collect, and provide the following information for each reporting year:

1. The total amount of biosolids, in dry metric tons, that is generated by the facility during the reporting year;

2. A summary of any biosolids received from other facilities:
   a) Summary of total amount of biosolids received, in dry metric tons;
   b) Summary of amount of biosolids received from each individual facility, in dry metric tons;
   c) Name of each facility sending biosolids; and
   d) Location of each facility.
3. A summary of any biosolids sent to other facilities/operations:
   a) Summary of total amount of biosolids sent to other facilities, in dry metric tons;
   b) Summary of amount of biosolids sent to each individual facility, in dry metric tons;
   c) Name of each facility receiving biosolids; and
   d) Location of each facility.
4. The amount of biosolids, in dry metric tons, placed in storage during the reporting year and the total amount of biosolids already in storage and how long it has been stored.
5. The amount of biosolids disposed of at the landfill during the reporting year.

The permittee shall develop an annual biosolids report. This report shall include the results of all monitoring performed in accordance with the self-monitoring requirements of the permit, information on best management practices, and certifications. This report shall be submitted to SDDENR no later than **February 19th of each year**. Each report is for the previous calendar year.

SPECIAL CONDITIONS ON BIOSOLIDS STORAGE

Permanent storage of biosolids is prohibited. Biosolids shall not be temporarily stored for more than two years. Written permission to store biosolids for more than two years must be obtained from SDDENR. Storage of biosolids for more than two years will only be allowed if it is determined that significant treatment is occurring. During the storage of biosolids, controls shall be put into place to prevent runoff of the biosolids from the storage site.

CHANGE IN TREATMENT SYSTEM OR USE/DISPOSAL PRACTICES

The permittee must inform SDDENR in writing at least 180 days prior to any significant change in the biosolids generation and handling processes at the plant and any major change in use/disposal practices. This includes but is not limited to: the addition or removal of biosolids treatment units (e.g. digesters, drying beds, etc.) and/or any other change that would require a modification of the permit (e.g. changing from land application to surface disposal).

ENDANGERED SPECIES

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit. However, the table below shows the species that may be present in the city of Pierre's geographic area.

COUNTY	GROUP	SPECIES	CERTAINTY OF OCCURRENCE
HUGHES	BIRD	CRANE, WHOOPING	KNOWN
		TERN, LEAST	KNOWN
	FISH	STURGEON, PALLID	KNOWN

This information was accessible at the following U.S. Fish and Wildlife Service website as of January 31, 2013: http://www.fws.gov/southdakotafieldoffice/SpeciesByCounty.pdf.

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

Any questions pertaining to this statement of basis and proposed permit can be directed to Tina Piroutek, Engineer II for the Surface Water Quality Program, at (605) 773-3351.

January 31, 2013

Attachment 1 – Biosolids Management Plan

BIOSOLIDS MANAGEMENT PLAN

The permittee is responsible for the safe landfill disposal of biosolids. A Biosolids Management Plan (Plan) must include current biosolids practices and a 5-year biosolids operating plan that includes the following elements:

A. A description of the permittee's biosolids production and any current and known future disposal plans.

B. A description of the pathogen treatment, vector attraction control, record keeping, monitoring, certifications, and notifications as required by the permit.

C. Procedures the permittee intends to use to ensure that biosolids practices and limits outlined in the permit are followed.

D. A statement that the permittee will comply with the Biosolids Management Plan, as approved by SDDENR.

E. A statement that the Plan will be amended to reflect any applicable practices or limits EPA or SDDENR requires.

F. A description of the sample collection, preservation and analysis methods used for sampling and monitoring of parameters.

APPENDIX C

PIERRE WWTP LOADING DATA

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.81	2.15	1.92												
2	1.62	2.35	1.87												
3	1.53	2.20	1.63												
4	1.71	2.30	1.84	444	6336	131	1869	5	71	764	10901	71	1012	11	159
5	1.36	2.30	1.48	337	3811	139	1572	4	45	546	6173	100	1131	10	110
6	1.30	1.95	1.44	448	4853	141	1528	3	33	490	5308	79	858	10	109
7	1.46	2.30	1.64												
8	1.60	2.60	1.74												
9	1.95	2.35	2.07												
10	1.25	2.35	1.30												
11	1.76	2.35	1.96	577	8465	152	2230	6	88	861	12625	91	1329	12	177
12	1.10	2.35	1.23	547	5023			3	28	884	8117	2627	24119	16	149
13	1.44	2.40	1.54	160	1922	125	1501	3	36	130	1561	73	882	14	173
14	1.49	2.25	1.58												
15	0.85	2.20	1.56												
16	2.22	2.25	1.84												
17	1.68	2.30	1.89												
18	1.52	2.30	1.75	324	4102	105	1329	6	76	290	3677	55	701	13	165
19	1.17	2.30	1.31	223	2169	147	1429	5	49	262	2543	90	875	14	132
20	1.48	2.20	1.67	293	3604	151	1858	7	86	323	3970	61	752	10	119
21	1.39	2.30	1.46												
22	1.65	2.20	1.79												
23	1.45	2.35	1.59												
24	1.56	2.45	1.69												
25	1.51	2.35	1.58	232	2922	119	1499	5	63	269	3391	69	870	15	188
26	1.64	2.35	1.73	228	3111	160	2183	5	68	246	3359	81	1106	8	111
27	1.38	2.25	1.46	222	2555	123	1416	4	46	257	2954	61	707	7	84
28	1.47	2.25	1.57												
29	1.70	2.35	1.90												
30	1.49	2.35	1.60												
31	1.52	2.65	1.65												
TOTAL	47.02		51.27		48872		18414		689		64580		34341		1675
AVG	1.52	2.3	1.65	336	4073	136	1674	5	57	443	5382	288	2862	12	140
MAX	2.22	2.7	2.07	577	8465	160	2230	7	88	884	12625	2627	24119	16	188
MIN	0.85	2.0	1.23	160	1922	105	1329	3	28	130	1561	55	701	7	84

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	2.50	1.63	257	3209	154	1923	4	50	364	4539	87	1082	14	174
2	1.45	2.85	1.58	304	3669	161	1943	6	72	548	6609	67	813	11	136
3	1.62	2.10	1.74	290	3906	164	2209	5	67	256	3448	73	989	8	108
4	1.42	2.35	1.57												
5	1.40	2.40	1.50												
6	1.62	2.30	1.74												
7	1.52	2.40	1.68												
8	1.39	2.90	1.52	288	3348	131	1523	6	70	319	3714	58	677	10	116
9	1.52	2.30	1.63	210	2657	113	1430	4	51	293	3711	74	932	9	112
10	1.55	2.30	1.66	280	3615	167	2156	5	65	281	3631	83	1076	8	105
11	1.45	2.30	1.67												
12	1.47	2.30	1.55												
13	1.62	2.30	1.70												
14	1.54	2.35	1.63												
15	1.44	2.35	1.55	335	4009	152	1819	6	72	361	4322	157	1884	13	156
16	1.47	2.15	1.57	296	3626	159	1948	6	74	287	3512	118	1445	11	138
17	1.35	1.75	1.46	206	2318	121	1361	4	45	255	2867	74	833	11	129
18	1.42	2.17	1.50												
19	1.44	2.50	1.50												
20	1.75	2.50	1.86												
21	1.44	2.50	1.51												
22	1.48	2.20	1.53	425	5235	157	1934	12	148	474	5836	68	842	11	138
23	1.50	2.30	1.57	320	4009	172	2155	6	75	325	4071	77	961	4	51
24	1.36	2.30	1.45	430	4884	158	1795	5	57	468	5313	75	857	9	103
25	1.47	2.25	1.52												
26	1.69	2.30	1.82												
27	1.43	2.30	1.50												
28	1.63	2.35	1.69												
29	1.38	2.35	1.48	360	4137	117	1345	9	103	567	6520	68	780	10	119
30															
31															
TOTAL	43.30		46.29		48622		23540		948		58094		13171		1584
AVG	1.49	2.3	1.60	308	3740	148	1811	6	73	369	4469	83	1013	10	122
MAX	1.75	2.9	1.86	430	5235	172	2209	12	148	567	6609	157	1884	14	174
MIN	1.35	1.8	1.45	206	2318	113	1345	4	45	255	2867	58	677	4	51

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.62	2.20	1.65	339	4575	164	2213	6	81	289	3898	110	1487	22	303
2	1.45	2.15	1.50	392	4750	157	1903	6	73	463	5605	93	1122	11	129
3	1.52	2.30	1.53												
4	1.75	5.00	1.82												
5	1.81	4.90	1.93												
6	1.48	2.30	1.55												
7	1.46	2.30	1.65	576	7028	159	1940	7	85	977	11927	75	915	12	143
8	1.35	2.10	1.46	507	5708	172	1937	10	113	927	10440	115	1299	30	333
9	1.46	2.25	1.55	404	4919	170	2070	7	85	700	8523	82	998	8	102
10	1.47	2.35	1.55												
11	1.76	4.80	1.87												
12	1.63	5.00	1.72												
13	1.48	2.35	1.55												
14	1.58	2.75	1.63	338	4454	128	1687	7	92	458	6036	73	966	20	261
15	1.44	2.10	1.52	319	3818	114	1364	4	48	450	5386	66	785	18	215
16	1.36	2.00	1.39	269	3051	127	1440	3	34	533	6049	63	709	8	85
17	1.47	2.05	1.46												
18	1.53	2.25	1.53												
19	1.56	2.35	1.58												
20	1.44	2.20	1.47												
21	1.57	2.15	1.57	381	4976	154	2011	4	52	603	7871	76	991	8	108
22	1.72	2.20	1.69	320	4580	150	2147	5	72	386	5520	84	1202	10	149
23	1.20	2.60	1.18	305	3063	143	1436	4	40	432	4338	61	617	8	85
24	1.50	2.00	1.50												
25	1.54	2.10	1.53												
26	1.71	2.35	1.68												
27	1.59	2.30	1.61												
28	1.67	2.35	1.62	287	4004	130	1814	4	56	490	6832	62	859	13	182
29	1.43	2.35	1.40	330	3936	169	2016	5	60	400	4770	81	963	7	81
30	1.37	1.75	1.32	277	3160	163	1860	4	46	338	3862	68	780	4	50
31	1.52	2.05	1.47												
TOTAL	47.44		48.47		62022		25837		936		91058		13693		2224
AVG	1.53	2.6	1.56	360	4430	150	1845	5	67	532	6504	79	978	13	159
MAX	1.81	5.0	1.93	576	7028	172	2213	10	113	977	11927	115	1487	30	333
MIN	1.20	1.8	1.18	269	3051	114	1364	3	34	289	3862	61	617	4	50

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.70	2.30	1.67												
2	1.64	2.60	1.61												
3	1.86	4.35	1.89												
4	1.45	2.44	1.49	418	5055	122	1475	6	73	859	10392	79	953	6	67
5	1.49	2.20	1.45	290	3601	150	1863	4	50	400	4967	108	1347	10	126
6	1.39	2.10	1.35	380	4393	218	2520	4	46	444	5129	76	879	6	67
7	1.43	2.00	1.43												
8	1.65	2.00	1.64												
9	1.55	2.35	1.56												
10	1.64	2.35	1.60												
11	1.54	2.20	1.49	312	4018	144	1854	4	52	414	5329	60	778	5	65
12	1.45	2.75	1.48	296	3575	146	1763	4	48	481	5812	69	838	9	107
13	1.53	2.30	1.50	210	2681	136	1737	3	38	214	2736	59	749	4	51
14	1.53	2.10	1.46												
15	1.88	2.40	1.87												
16	1.70	4.35	1.69												
17	1.64	2.20	1.63												
18	1.58	2.20	1.59	316	4172	131	1729	6	79	506	6675	74	975	10	128
19	1.60	2.25	1.62	310	4126	103	1371	3	40	476	6342	66	877	7	89
20	1.37	2.25	1.36	262	3002	122	1398	3	34	438	5024	79	906	11	129
21	1.63	2.10	1.64												
22	1.50	2.30	1.53												
23	1.94	3.90	2.34												
24	1.53	3.75	1.56												
25	1.40	4.25	1.74	331	3868	130	1519			421	4924	69	806	6	65
26	1.58	4.50	1.59	244	3207	114	1498	7	92	412	5417	117	1543	12	156
27	1.56	2.25	1.57	280	3650	135	1760	5	65	359	4681	86	1120	11	137
28	1.54	2.20	1.54												
29	1.78	2.30	1.81												
30	1.58	2.30	1.59												
31															
TOTAL	47.68		48.30		45347		20488		617		67430		11771		1188
AVG	1.59	2.7	1.61	304	3779	138	1707	4	56	452	5619	79	981	8	99
MAX	1.94	4.5	2.34	418	5055	218	2520	7	92	859	10392	117	1543	12	156
MIN	1.37	2.0	1.35	210	2681	103	1371	3	34	214	2736	59	749	4	51

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.59	2.25	1.63												
2	1.67	2.30	1.69	269	3749	143	1993	6	84	549	7646	91	1267	17	235
3	1.51	2.30	1.56	314	3967	178	2249	6	76	363	4589	65	820	9	115
4	1.22	2.15	1.22	260	2635	149	1510	5	51	362	3667	72	726	11	110
5	1.66	2.15	1.69												
6	1.62	2.05	1.69												
7	1.55	2.30	1.62												
8	1.43	2.30	1.49												
9	1.51	2.35	1.55	236	2978	158	1994	5	63	453	5717	93	1172	16	199
10	1.54	2.10	1.57	228	2932	146	1878	4	51	291	3746	71	908	4	56
11	1.33	1.65	1.38	170	1887	160	1776	4	44	278	3091	97	1080	11	127
12	1.43	1.75	1.47												
13	1.83	2.25	1.88												
14	1.61	2.30	1.67												
15	1.29	2.80	1.34												
16	1.50	2.30	1.52	324	4045	169	2110	6	75	536	6695	82	1021	15	190
17	1.74	2.30	1.77	230	3342	156	2266	5	73	377	5481	71	1033	3	50
18	1.20	2.00	1.20	266	2667	172	1724	5	50	372	3729	79	793	8	80
19	1.52	2.25	1.52												
20	1.73	2.30	1.74												
21	1.75	2.35	1.74												
22	1.49	2.35	1.51												
23	1.70	2.10	1.73	275	3901	173	2454	6	85	445	6319	65	924	10	149
24	1.62	2.15	1.61	290	3913	184	2483	6	81	284	3837	75	1007	4	49
25	1.50	2.20	1.44	339	4227	318	3965	7	87	340	4239	64	797	15	183
26	1.50	2.00	1.45												
27	1.49	2.00	1.47												
28	1.99	3.15	1.97												
29	1.33	2.10	1.33												
30	1.63	2.20	1.63	294	3997	253	3439	7	95	380	5161	76	1031	13	175
31	1.49	2.00	1.45	314	3891	178	2206	6	74	384	4764	84	1040	22	267
TOTAL	47.97		48.49		48131		32047		990		68682		13619		1984
AVG	1.55	2.2	1.56	272	3438	181	2289	6	71	387	4906	77	973	11	142
MAX	1.99	3.2	1.97	339	4227	318	3965	7	95	549	7646	97	1267	22	267
MIN	1.20	1.7	1.20	170	1887	143	1510	4	44	278	3091	64	726	3	49

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.44	1.95	1.41	228	2729	229	2741	5	60	376	4500	53	634	12	140
2	1.48	1.95	1.44												
3	1.89	2.00	1.86												
4	1.53	2.15	1.52												
5	1.59	2.10	1.56												
6	1.62	2.10	1.58	440	5937	207	2793	6	81	679	9169	83	1125	6	84
7	1.56	2.70	1.54	403	5236	186	2417	6	78	550	7147	80	1034	6	82
8	1.48	2.70	1.40	365	4499	163	2009	6	74	482	5939	57	698	9	113
9	1.64	1.90	1.61												
10	1.79	2.00	1.80												
11	1.32	1.90	1.34												
12	1.81	2.10	1.76												
13	1.69	2.10	1.62	383	5395	265	3733	7	99	500	7043	39	552	7	99
14	1.62	2.60	1.65	310	4196	197	2667	6	81	372	5035	75	1009	8	109
15	1.40	2.25	1.37	298	3477	268	3127	6	70	336	3920	60	700	8	93
16	1.45	2.05	1.42												
17	1.75	2.20	1.77												
18	1.64	2.15	1.65												
19	1.41	2.15	1.43												
20	1.63	2.35	1.63	191	2593	130	1765			319	4328	65	879	2	27
21	1.53	2.00	1.52	191	2437	162	2067	3	38	354	4519	74	942	6	77
22	1.49	2.05	1.46	200	2489	155	1929	3	37	309	3840	70	873	5	57
23	1.50	2.00	1.52												
24	1.69	2.25	1.70												
25	1.72	2.50	1.73												
26	1.53	2.00	1.55												
27	1.84	2.20	1.89	344	5267	259	3966	4	61	642	9833	52	796	5	83
28	1.58	2.20	1.61	280	3697	176	2324	4	53	297	3922	67	880	3	39
29	1.30	1.95	1.31	223	2423	169	1837	4	43	348	3782	72	787	5	58
30	1.51	2.05	1.53												
31															
TOTAL	47.45		47.17		50376		33373		776		72976		10908		1063
AVG	1.58	2.2	1.57	297	3875	197	2567	5	65	428	5614	65	839	6	82
MAX	1.89	2.7	1.89	440	5937	268	3966	7	99	679	9833	83	1125	12	140
MIN	1.30	1.9	1.31	191	2423	130	1765	3	37	297	3782	39	552	2	27

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.67	2.10	1.74												
2	1.66	2.35	1.78												
3	1.38	2.00	1.44												
4	1.66	2.15	1.74	219	3025	176	2431	4	55	421	5809	40	548	6	80
5	1.71	2.00	1.75	215	3070	133	1899	3	43	343	4902	81	1156	17	245
6	1.34	2.10	1.39	242	2702	148	1653	4	45	271	3027	53	587	6	66
7	1.40	2.00	1.45												
8	1.75	1.95	1.78												
9	1.38	2.25	1.46												
10	1.72	2.25	1.74												
11	1.78	2.05	1.83	221	3277	128	1898	4	59	270	4001	47	700	8	116
12	1.31	2.00	1.35	1178	12841	139	1515	3	33	376	4099	78	846	18	197
13	1.35	2.00	1.43	285	3197	151	1694	4	45	290	3257	44	499	10	110
14	1.55	2.00	1.56												
15	1.63	2.10	1.69												
16	1.70	2.35	1.75												
17	1.87	2.10	1.87												
18	1.51	2.24	1.57	289	3649	159	2008	5	63	412	5205	91	1154	10	122
19	1.48	2.20	1.53	279	3439	145	1787	4	49	538	6635	91	1128	12	144
20	1.44	2.05	1.50	216	2596	163	1959	4	48	311	3739	70	843	5	60
21	1.49	2.05	1.53												
22	1.62	2.30	1.68												
23	1.88	2.35	1.92												
24	1.46	2.90	1.49												
25	1.77	4.05	1.80	281	4148	141	2081	3	44	550	8123	41	601	5	79
26	1.68	2.15	1.75	272	3820	187	2626	5	70	265	3725	24	330	3	48
27	1.38	2.00	1.39	302	3468	185	2125	5	57	461	5293	55	628	12	135
28	1.47	2.20	1.53												
29	1.45	2.30	1.53												
30	1.57	2.20	1.63												
31	1.59	2.40	1.67												
TOTAL	48.67		50.25		49232		23676		612		57813		9020		1403
AVG	1.57	2.2	1.62	333	4103	155	1973	4	51	376	4818	60	752	9	117
MAX	1.88	4.1	1.92	1178	12841	187	2626	5	70	550	8123	91	1156	18	245
MIN	1.31	2.0	1.35	215	2596	128	1515	3	33	265	3027	24	330	3	48

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.59	2.00	1.66	304	4029	244	3234	5	66	477	6317	42	550	3	35
2	1.62	2.25	1.62	262	3540	217	2932	4	54	343	4632	155	2099	11	149
3	1.43	2.00	1.46	289	3437	152	1808	4	48	336	3996	382	4545	9	104
4	1.48	2.20	1.54												
5	1.55	2.10	1.61												
6	1.81	2.50	1.86												
7	1.46	2.35	1.54												
8	1.47	2.20	1.55	263	3229	224	2750	4	49	487	5976	18	218	4	53
9	1.57	2.20	1.60	304	3981	134	1755	4	52	389	5097	79	1032	6	78
10	1.32	2.20	1.35	219	2416	133	1467	3	33	347	3833	61	669	5	53
11	1.41	2.20	1.49												
12	1.78	2.20	1.87												
13	1.33	2.45	1.39												
14	1.49	2.15	1.58												
15	1.61	2.20	1.68	309	4159	203	2733	6	81	642	8648	56	760	8	112
16	1.42	2.15	1.48	248	2939	133	1576	3	36	350	4148	162	1923	10	120
17	1.27	2.15	1.32	283	3007	282	2996	5	53	391	4153	39	416	6	61
18	1.32	2.00	1.39												
19	1.50	2.05	1.55												
20	1.60	2.10	1.69												
21	1.41	2.35	2.48												
22	1.49	2.35	0.56	320	3977	169	2100	4	50	629	7816	74	918	8	101
23	1.23	2.30	1.30	282	2893	178	1826	4	41	368	3775	119	1218	11	113
24	1.54	2.30	1.61	247	3162	192	2458	4	51	314	4015	61	786	7	96
25	1.32	2.05	1.44												
26	1.37	2.30	1.48												
27	1.42	2.40	1.49												
28	1.52	2.50	1.62												
29	1.45	2.20	1.58	297	3602	161	1952	5	61	558	6769	72	869	12	151
30	1.39	2.15	1.49	289	3343	172	1990	4	46	429	4963	84	972	7	80
31	1.55	2.10	1.62	166	2144	241	3113			316	4084	47	603	3	44
TOTAL	45.71		47.87		49857		34690		721		78223		17577		1348
AVG	1.47	2.2	1.54	272	3324	189	2313	4	51	425	5215	97	1172	7	90
MAX	1.81	2.5	2.48	320	4159	282	3234	6	81	642	8648	382	4545	12	151
MIN	1.23	2.0	0.56	166	2144	133	1467	3	33	314	3775	18	218	3	35

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.15	1.95	1.21												
2	1.40	1.45	1.51												
3	1.31	2.15	1.45												
4	1.74	3.70	1.86												
5	1.39	2.20	1.47	370	4305	243	2827	6	70	619	7207	51	592	4	46
6	1.53	2.15	1.61	312	3981	151	1927	3	38	426	5437	76	971	7	92
7	1.22	2.15	1.32	254	2595	145	1481	3	31	302	3089	91	933	21	216
8	1.48	2.00	1.51												
9	1.32	2.09	1.48												
10	1.43	2.25	1.51												
11	1.44	2.32	1.55												
12	1.39	2.00	1.52	279	3223	146	1686	4	46	640	7395	92	1061	13	151
13	1.53	2.10	1.64	277	3546	157	2010	4	51	426	5455	75	960	7	83
14	1.08	1.66	1.15	311	2793	172	1545	4	36	435	3905	81	724	9	79
15	1.34	1.91	1.48												
16	1.58	2.08	1.72												
17	1.29	2.05	1.43												
18	1.60	2.06	1.72												
19	1.29	3.04	1.42	300	3230	138	1486	3	32	608	6548	71	761	8	82
20	1.49	2.14	1.57	294	3663	162	2019	4	50	444	5532	80	997	2	31
21	1.00	2.05	1.07	346	2883	188	1566	5	42	468	3897	125	1038	15	124
22	1.33	2.04	1.42												
23	1.45	1.97	1.57												
24	1.53	2.08	1.64												
25	1.33	1.98	1.45												
26	1.44	2.30	1.49	307	3695	215	2587	4	48	546	6566	63	762	9	108
27	1.50	1.99	1.59	324	4056	179	2241	4	50	421	5266	67	844	4	50
28	1.21	1.94	1.29	279	2820	178	1799	4	40	424	4287	79	798	8	82
29	1.23	2.05	1.32												
30	1.81	2.01	1.94												
31															
TOTAL	41.86		44.91		40790		23175		535		64586		10441		1144
AVG	1.40	2.1	1.50	304	3399	173	1931	4	45	480	5382	79	870	9	95
MAX	1.81	3.7	1.94	370	4305	243	2827	6	70	640	7395	125	1061	21	216
MIN	1.00	1.5	1.07	254	2595	138	1481	3	31	302	3089	51	592	2	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.38	1.97	1.50												
2	1.29	2.14	1.39												
3	1.28	2.29	1.39	374	3993	300	3203	6	64	555	5927	50	534	7	75
4	1.30	1.95	1.44	343	3713	185	2003	4	43	365	3951	75	812	4	42
5	1.39	2.25	1.51	300	3473	167	1933	3	35	379	4391	79	915	14	157
6	1.24	2.00	1.38												
7	1.06	2.02	1.46												
8	1.92	2.10	1.74												
9	1.41	2.18	1.55												
10	1.39	2.11	1.47	434	5035	189	2193	5	58	817	9479	89	1034	11	129
11	1.14	2.09	1.26	249	2361	150	1422	3	28	382	3621	95	900	5	48
12	1.39	2.10	1.48	253	2939	152	1766			412	4792	70	816	13	156
13	1.31	1.95	1.41												
14	1.94	2.05	2.10												
15	1.06	1.90	0.94												
16	1.40	1.83	1.66												
17	1.47	1.91	1.57	363	4441	172	2104	5	61	517	6325	84	1026	6	78
18	1.25	1.69	1.30	337	3508	180	1873	3	31	396	4123	81	846	3	32
19	1.20	1.69	1.30	353	3542	191	1916	4	40	339	3398	71	711	5	54
20	1.15	1.98	1.18												
21	1.21	2.00	1.31												
22	1.76	2.33	1.88												
23	1.30	2.14	1.39												
24	1.52	3.00	1.62	367	4640	231	2921	5	63	576	7279	59	743	8	107
25	1.53	1.97	1.63	474	6048	247	3152	6	77	509	6500	97	1236	4	52
26	0.99	1.60	1.08	511	4223	231	1909	5	41	343	2836	62	512	4	31
27	1.38	1.60	1.48												
28	1.55	1.99	1.65												
29	1.42	1.91	1.50												
30	1.33	2.09	1.43												
31	1.52	2.47	1.60	387	4916	187	2375	5	64	632	8029				
TOTAL	42.46		45.57		52832		28770		606		70651		10084		961
AVG	1.37	2.0	1.47	365	4064	199	2213	5	50	479	5435	76	840	7	80
MAX	1.94	3.0	2.10	511	6048	300	3203	6	77	817	9479	97	1236	14	157
MIN	0.99	1.6	0.94	249	2361	150	1422	3	28	339	2836	50	512	3	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.27	2.18	1.36	298	3151	182	1925	5	53	376	3978	56	588	6	60
2	1.14	2.53	1.22	312	2959	155	1470	4	38	525	4978	80	756	10	95
3	1.36	1.82	1.47												
4	1.61	1.83	1.75												
5	1.55	1.99	1.63												
6	1.29	1.84	1.40												
7	1.21	2.06	1.29	378	3827	212	2146	5	51	639	6465	83	838	5	49
8	1.47	2.01	1.55	431	5277	212	2596	8	98	576	7052	94	1148	9	109
9	1.26	1.99	1.35	427	4505	221	2332	6	63	500	5275	86	909	10	105
10	1.26	2.22	1.38												
11	1.42	1.91	1.57												
12	1.51	1.99	1.66												
13	1.37	1.82	1.47												
14	1.47	2.18	1.53	459	5620	170	2081	8	98	760	9311	69	851	27	326
15	1.22	2.13	1.25	485	4923	213	2162	8	81	618	6271	55	556	5	55
16	1.32	1.92	1.36	545	5995	185	2035	5	55	658	7237	69	754	13	148
17	1.32	2.05	1.42												
18	1.65	2.11	1.76												
19	1.28	1.94	1.37												
20	1.51	2.00	1.60												
21	1.30	2.10	1.37	485	5271	194	2108	8	87	758	8239	103	1122	18	199
22	1.23	2.10	1.30	442	4519	244	2495	8	82	880	8998	56	574	9	88
23	1.37	2.00	1.46	309	3536	188	2151	7	80	436	4986	90	1035	12	135
24	1.21	2.40	1.23												
25	1.41	1.96	1.51												
26	1.36	1.96	1.44												
27	1.35	1.94	1.43												
28	1.30	1.94	1.37	321	3483	167	1812	8	87	627	6801	95	1027	21	231
29	1.35	1.87	1.42	394	4426	198	2224	8	90	629	7061	87	983	18	205
30	1.42	1.87	1.45	375	4429	185	2185	8	94	583	6889	71	844	14	160
31															
TOTAL	40.78		43.35		61920		29722		1057		93543		11983		1962
AVG	1.36	2.0	1.45	404	4423	195	2123	7	75	612	6682	78	856	13	140
MAX	1.65	2.5	1.76	545	5995	244	2596	8	98	880	9311	103	1148	27	326
MIN	1.14	1.8	1.22	298	2959	155	1470	4	38	376	3978	55	556	5	49

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2012

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.27	2.06	1.32												
2	1.44	1.94	1.45												
3	1.28	2.08	1.36												
4	1.38	1.91	1.43												
5	1.43	2.01	1.48	498	5935	227	2705	7	83	697	8305	77	921	13	151
6	1.44	1.97	1.51	415	4970	177	2120	6	72	670	8019	91	1087	16	188
7	1.07	1.97	1.11	397	3549	224	2003	5	45	486	4343	78	698	11	101
8	1.28	1.30	1.34												
9	1.48	1.88	1.69												
10	1.26	1.85	1.35												
11	1.33	1.89	1.40												
12	1.23	1.89	1.29	455	4652	157	1605	3	31	793	8112	84	857	12	125
13	1.54	2.06	1.64	454	5820	196	2512	5	64	741	9501	116	1487	9	120
14	0.92	1.88	1.00	554	4255	246	1890	7	54	473	3636	83	640	10	75
15	1.25	1.91	1.36												
16	1.46	1.91	1.56												
17	1.34	1.91	0.90												
18	1.30	1.96	2.01												
19	1.25	1.81	1.39	328	3422	136	1419			622	6490	96	1003	4	42
20	1.35	1.67	1.45	341	3845	184	2075	5	56	420	4736	100	1128	10	116
21	1.14	1.90	1.30	310	2960	170	1623	3	29	200	1910	93	885	3	27
22	1.25	2.05	1.40												
23	1.21	1.73	1.38												
24	1.09	1.92	1.24												
25	1.19	1.69	1.35												
26	1.24	1.74	1.35	331	3431	195	2021	5	52	263	2727	56	582	7	70
27	1.26	5.00	1.37	332	3480	159	1667	4	42	296	3108	84	878	4	42
28	1.03	1.80	1.26	369	3173	189	1625	7	60	307	2643	73	630	26	227
29	1.26	2.00	1.42												
30	1.40	1.90	1.55												
31	1.42	1.34	1.51												
TOTAL	39.79		43.15		49494		23266		588		63528		10795		1284
AVG	1.28	2.0	1.39	399	4125	188	1939	5	53	497	5294	86	900	10	107
MAX	1.54	5.0	2.01	554	5935	246	2705	7	83	793	9501	116	1487	26	227
MIN	0.92	1.3	0.90	310	2960	136	1419	3	29	200	1910	56	582	3	27

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.52	1.91	1.53												
2	1.27	1.89	1.52	296	3143	158	1677	5	53	268	2845	68	719	7	76
3	1.29	3.02	1.42	370	3968	196	2102	5	54	297	3183	83	894	8	85
4	1.30	2.00	1.40	341	3686	164	1773	5	54	323	3492	73	791	10	110
5	1.31	2.00	1.45												
6	1.51	1.85	1.63												
7	1.45	1.97	1.52												
8	1.44	1.90	1.50												
9	1.44	1.95	1.49	507	6068	188	2250	5	60	686	8204	81	967	7	80
10	1.19	1.88	1.25	434	4315	195	1939	5	50	475	4722	106	1058	6	57
11	1.24	1.78	1.35	413	4268	167	1726	3	31	520	5373	85	881	5	52
12	1.32	1.89	1.51												
13	1.42	1.82	1.63												
14	1.30	1.87	1.49												
15	1.46	2.67	1.49												
16	1.43	2.21	1.50	483	5740	218	2591	6	71	657	7808	74	875	3	34
17	1.47	1.85	1.52	275	3360	176	2150	4	49	329	4022	119	1448	7	82
18	1.11	1.37	1.14	519	4792	182	1680	5	46	828	7646	55	510	6	60
19	1.29	1.30	1.40												
20	1.84	1.77	1.42												
21	1.12	2.00	1.52												
22	1.12	1.84	1.54												
23	1.54	1.92	1.65	421	5404	161	2066	4	51	632	8111	70	903	3	39
24	1.42	1.87	1.51	167	1982	140	1661	4	47						
25	1.11	1.81	1.16	372	3456	144	1338	4	37	366	3398	71	659	7	70
26	1.36	1.90	1.44												
27	1.47	1.89	1.58												
28	1.60	1.97	1.70												
29	1.35	1.84	1.45												
30	1.40	1.82	1.52	382	4470	197	2305	5	59	338	3958	62	731	12	145
31	1.39	1.89	1.47	378	4385	192	2227	5	58	360	4176	30	342	4	44
TOTAL	42.46		45.71		59035		27486		720		66939		10778		934
AVG	1.37	1.9	1.47	383	4217	177	1963	5	51	468	5149	75	829	7	72
MAX	1.84	3.0	1.70	519	6068	218	2591	6	71	828	8204	119	1448	12	145
MIN	1.11	1.3	1.14	167	1982	140	1338	3	31	268	2845	30	342	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.13	1.84	1.19	183	1719	185	1737	4	38	326	3058	72	680	6	53
2	1.45	1.90	1.51												
3	1.64	2.44	1.74												
4	1.53	2.70	1.59												
5	1.40	3.37	1.48												
6	1.47	2.07	1.57	194	2370	152	1857	3	37	265	3240	63	769	7	91
7	1.39	3.34	1.44	206	2388	136	1577	4	46	243	2815	88	1021	6	69
8	1.83	1.39	1.23	186	2845	129	1973			233	3569	83	1275	5	70
9	1.34	1.36	1.42												
10	1.02	2.08	1.76												
11	1.45	2.60	1.55												
12	1.25	2.15	1.27												
13	1.56	2.34	1.57	327	4241	239	3100	5	65	273	3544	92	1197	3	36
14	1.46	1.95	1.54		322	173	2101	4	49	309	3753	94	1144	4	43
15	1.28	1.80	1.32	235	2505	154	1641	3	32	240	2558	74	790	3	37
16	1.50	2.00	1.54												
17	1.58	2.05	1.61												
18	1.49	2.14	1.59												
19	1.14	1.96	1.20												
20	1.50	2.01	1.56	316	3958	201	2518	6	75	250	3132	113	1421	2	23
21	1.30	1.95	1.39	256	2767	162	1751	3	32	186	2007	65	699	2	20
22	1.24	1.59	1.32	294	3053	170	1765	3	31	278	2889	71	742	2	23
23	1.31	2.08	1.36												
24	1.86	2.09	1.92												
25	1.39	3.16	1.46												
26	1.39	2.16	1.39												
27	1.42	1.84	1.45	248	2937	158	1871	3	36	279	3299	62	740	2	28
28	1.36	1.86	1.41	175	1981	151	1709	3	34	258	2925	81	920	6	67
29															
30															
31															
TOTAL	39.67		41.35		31085		23600		474		36790		11398		560
AVG	1.42	2.2	1.48	238	2590	168	1967	4	43	262	3066	80	950	4	47
MAX	1.86	3.4	1.92	327	4241	239	3100	6	75	326	3753	113	1421	7	91
MIN	1.02	1.4	1.19	175	322	129	1577	3	31	186	2007	62	680	2	20

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.18	1.92	1.20	221	2175	176	1732	6	59	289	2847	110	1079	4	40
2	1.46	2.23	1.46												
3	1.71	2.07	1.76												
4	1.48	3.50	1.51												
5	1.50	2.07	1.55												
6	1.21	1.86	1.19	247	2482	160	1608	5	50	316	3175	102	1025	6	61
7	1.64	1.89	1.64	210	2876	147	2013	3	41	307	4210	88	1207	6	87
8	0.60	2.21	1.12	291	1456	153	766	3	15	376	1881	86	433	6	31
9	1.88	2.02	1.38												
10	1.45	2.04	1.49												
11	1.66	1.99	1.65												
12	1.56	2.22	1.59												
13	1.44	2.23	1.40	270	3236	191	2289	5	60	279	3349	91	1090	9	108
14	1.08	2.22	1.08	224	2012	144	1293	3	27	373	3348	81	727	6	49
15	1.37	1.81	1.37	182	2083	139	1591			243	2784	78	887	6	74
16	1.22	1.88	1.22												
17	1.55	1.87	1.55												
18	1.46	2.15	1.48												
19	1.46	2.19	1.50												
20	1.38	2.16	1.37	280	3220	179	2059	4	46	324	3730	81	934	7	83
21	1.37	1.99	1.37	200	2290	162	1855	3	34	269	3080	164	1881	3	32
22	1.19	2.00	1.19	187	1859	158	1571			277	2750	91	907	8	79
23	1.39	1.95	1.40												
24	1.53	2.09	1.56												
25	1.74	2.15	1.76												
26	1.34	2.17	1.35												
27	1.38	1.85	1.39	347	4002	211	2434	5	58	372	4285	65	748	8	97
28	1.44	2.15	1.44	315	3778	170	2039	4	48	328	3931	86	1031	4	51
29	1.39	1.80	1.39	292	3373	194	2241	5	58	261	3013	53	616	6	71
30	1.41	2.00	1.42												
31	1.40	1.96	1.43												
TOTAL	43.85		44.18		34842		23489		496		42384		12565		863
AVG	1.41	2.1	1.43	251	2680	168	1807	4	45	309	3260	91	967	6	66
MAX	1.88	3.5	1.76	347	4002	211	2434	6	60	376	4285	164	1881	9	108
MIN	0.60	1.8	1.08	182	1456	139	766	3	15	243	1881	53	433	3	31

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.61	2.93	1.66												
2	1.38	3.43	1.37												
3	1.51	2.15	1.50	284	3581	163	2055	4	50	315	3973	59	745	7	85
4	1.50	2.11	1.50	235	2946	181	2269	4	50	325	4074	79	992	3	39
5	1.53	2.14	1.53	281	3586	172	2195	5	64	650	8294	73	928	5	67
6	1.33	2.24	1.33												
7	1.70	2.30	1.73												
8	1.46	2.29	1.52												
9	1.32	2.20	1.36												
10	1.67	1.84	1.71	378	5252	164	2279	5	69	463	6433	60	827	8	106
11	1.25	2.22	1.29	295	3083	136	1421	4	42	346	3614	57	600	6	65
12	1.29	2.29	1.29	327	3513	206	2213	4	43	537	5774	144	1546	13	143
13	1.56	2.36	1.57												
14	2.03	2.56	2.11												
15	1.55	2.43	1.62												
16	1.42	2.94	1.47												
17	1.49	2.94	1.57	125	1556	146	1818	4	50	3487	43420	194	2411	10	120
18	1.66	3.27	1.72			112	1555	2	28	1858	25799	172	2390	8	104
19	1.20	2.31	1.24	100	997	141	1406	3	30	1650	16458	396	3951	14	142
20	1.47	2.13	1.52												
21	1.85	2.13	1.91												
22	1.53	2.37	1.59												
23	1.57	2.43	1.59												
24	1.67	3.56	1.73	405	5654	181	2527	5	70	1965	27434	100	1396	6	89
25	1.53	2.20	1.56	252	3213	126	1607			1430	18235	100	1275	6	72
26	1.31	2.21	1.31	130	1415	117	1273	4	44	3800	41358	137	1489	6	66
27	1.46	2.26	1.52												
28	1.77	2.34	1.83												
29	1.66	2.47	1.70												
30	1.30	2.19	1.33												
31															
TOTAL	45.59		46.67		34797		22618		539		204865		18552		1099
AVG	1.52	2.4	1.56	256	3163	154	1885	4	49	1402	17072	131	1546	8	92
MAX	2.03	3.6	2.11	405	5654	206	2527	5	70	3800	43420	396	3951	14	143
MIN	1.20	1.8	1.24	100	997	112	1273	2	28	315	3614	57	600	3	39

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.55	2.35	1.58	336	4341	190	2455	5	209	2100	27129	148	1918	11	143
2	1.88	3.45	1.86	309	4835	123	1924	3	75	8700	136119	250	3911	10	155
3	1.11	2.42	1.27	457	4219	181	1671	4	133	9118	84183	331	3059	11	99
4	1.56	5.00	1.56												
5	1.95	2.33	1.95												
6	1.69	3.71	1.86												
7	1.58	3.07	1.58												
8	1.62	2.72	1.64	216	2926	94	1273	4	133	410	5559	118	1595	10	130
9	1.63	3.03	1.65	231	3150	188	2564	3	75	354	4825	174	2367	6	88
10	0.77	2.33	0.92	358	2290	133	851	3	75	591	3780	92	588	3	19
11	1.48	2.00	1.49												
12	1.63	2.15	1.61												
13	1.75	2.41	1.76												
14	1.61	3.17	1.61												
15	1.41	2.39	1.38	354	4160	153	1798	6	300	488	5735	103	1214	9	107
16	1.79	2.32	1.76	413	6176	135	2019	4	133	567	8474	127	1897	9	135
17	1.60	2.37	1.51	394	5254	135	1800	4	133	323	4304	84	1122	8	110
18	1.64	2.43	1.56												
19	1.72	3.33	1.73												
20	1.73	2.69	1.77												
21	1.86	2.48	1.79												
22	1.58	2.51	1.52	793	10463	116	1530	4	133	1580	20847	87	1145	12	162
23	1.64	2.45	1.67	437	5963	120	1637	4	133	1052	14359	112	1526	10	140
24	1.36	2.26	1.21	203	2299	117	1325	4	133	276	3126	107	1212	11	126
25	1.49	2.24	1.43												
26	1.49	2.25	1.44												
27	2.17	2.21	2.13												
28	1.45	2.67	1.46												
29	1.76	2.74	1.75							756	11085	573	8404	15	221
30	1.85	2.47	1.83							537	8266	298	4596	15	231
31	1.22	2.23	1.20							478	4841	51	515	11	109
TOTAL	49.56		49.48		56074		20847		1668		342630		35068		1976
AVG	1.60	2.7	1.60	375	4673	140	1737	4	139	1822	22842	177	2338	10	132
MAX	2.17	5.0	2.13	793	10463	190	2564	6	300	9118	136119	573	8404	15	231
MIN	0.77	2.0	0.92	203	2290	94	851	3	75	276	3126	51	515	3	19

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	1.50	1.52												
2	1.82	1.82	1.80												
3	1.73	1.73	1.75												
4	1.39	1.39	1.40												
5	1.72	1.72	1.75	323	4641	142	2041	4	57	733	10529	106	1523	12	174
6	1.56	1.56	1.58	351	4578	114	1487	4	52	504	6572	82	1071	12	159
7	1.45	1.45	1.42	447	5391	142	1712	5	60	593	7146	91	1103	10	115
8	1.57	1.58	1.57												
9	1.69	1.69	1.70												
10	1.55	1.55	1.59												
11	1.53	1.53	1.55												
12	2.03	7.89	2.07	435	7372	94	1593	3	51	922	15625	135	2296	8	144
13	1.67	2.45	1.69	225	3139	117	1632	5	70	454	6329	100	1395	8	119
14	1.17	2.40	1.20	305	2976	138	1347	3	29	383	3733	69	678	3	30
15	1.52	2.20	1.57												
16	1.93	2.17	1.97												
17	1.79	2.45	1.80												
18	1.41	2.46	1.43												
19	1.72	2.47	1.76	167	2389	116	1659	4	57	265	3790	86	1233	7	95
20	1.46	2.53	1.67	211	2562	120	1457	3	36	472	5732	92	1113	11	128
21	1.50	2.75	1.51	202	2527	109	1364	3	38	374	4678	71	894	7	86
22	1.54	2.30	1.57												
23	1.80	2.50	1.82												
24	1.54	2.55	1.56												
25	1.76	2.71	1.86												
26	1.61	2.92	1.68	442	5946	140	1883	4	54	620	8339	106	1427	10	136
27	1.77	3.03	1.84	155	2288	131	1934	4	59	179	2636	91	1342	10	148
28	1.23	5.68	1.29	243	2487	157	1607	5	51	227	2322	112	1142	7	68
29	1.43	2.32	1.51												
30	1.75	2.16	1.82												
31															
TOTAL	48.14		49.23		46296		19716		615		77432		15217		1401
AVG	1.60	2.4	1.64	292	3858	127	1643	4	51	477	6453	95	1268	9	117
MAX	2.03	7.9	2.07	447	7372	157	2041	5	70	922	15625	135	2296	12	174
MIN	1.17	1.4	1.20	155	2288	94	1347	3	29	179	2322	69	678	3	30

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.63	2.64	1.69												
2	1.51	2.68	1.56												
3	1.78	2.54	1.85	282	4196	170	2529	5	74	399	5943	140	2077	10	143
4	1.35	2.22	1.44	233	2623	151	1700	3	34	500	5630	108	1216	7	81
5	1.20	2.28	1.26	166	1661	84	841			292	2925	55	549	9	86
6	1.50	2.19	1.59												
7	2.17	3.01	2.15												
8	1.59	2.35	1.56												
9	1.95	2.66	1.91												
10	1.48	2.76	1.46	190	2340	109	1343	3	37	335	4130	89	1100	7	85
11	1.75	3.59	1.77	277	4043	280	4087	7	102	159	2321	160	2339	16	235
12	1.04	2.43	1.00	190	1642	154	1331	5	43	216	1867	101	876	11	99
13	1.67	2.27	1.71												
14	1.72	2.46	1.66												
15	1.70	2.46	1.68												
16	1.95	2.57	1.95												
17	1.61	2.33	1.61	3888	52076	82	1098	3	40	573	7679	61	821	9	117
18	1.45	2.41	1.48	278	3369	135	1636	5	61	388	4702	56	683	5	60
19	1.59	2.01	1.54	379	5019	189	2503	7	93	307	4061	76	1009	6	86
20	1.59	2.38	1.47												
21	1.79	2.64	1.71												
22	1.65	2.64	1.58												
23	1.77	2.80	1.65												
24	1.51	2.74	1.46	424	5325	112	1407	7	88	768	9650	89	1123	17	212
25	1.76	2.75	1.66	281	4118	235	3444	6	88	300	4396	85	1253	18	267
26	1.14	2.10	1.09	206	1950	130	1231	5	47	254	2400	117	1106	29	278
27	1.51	2.85	1.42												
28	1.67	2.60	1.61												
29	1.94	2.94	1.87												
30	1.69	2.83	1.60												
31	1.48	2.64	1.43	277	3421	120	1482	5	62	447	5517	99	1217	23	283
TOTAL	50.11		49.38		91784		24630		769		61222		15369		2032
AVG	1.62	2.6	1.59	544	7060	150	1895	5	64	380	4709	95	1182	13	156
MAX	2.17	3.6	2.15	3888	52076	280	4087	7	102	768	9650	160	2339	29	283
MIN	1.04	2.0	1.00	166	1642	82	841	3	34	159	1867	55	549	5	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.88	4.37	1.75	265	4157	137	2149	5	78	336	5267	95	1490	21	324
2	1.44	4.12	1.33	393	4733	157	1891	7	84	376	4528	112	1348	22	264
3	1.78	4.53	1.67												
4	1.90	4.37	1.76												
5	1.90	4.26	1.80												
6	1.84	4.29	1.71												
7	1.73	4.03	1.62	234	3384	106	1533	4	58	571	8264	54	787	10	139
8	1.65	3.58	1.54	258	3557	135	1861	4	55	400	5514	87	1203	10	139
9	1.37	4.50	1.25	308	3522	130	1486	4	46	511	5837	85	969	9	100
10	1.65	4.09	1.52												
11	1.74	4.22	1.66												
12	1.72	3.81	1.62												
13	1.69	4.07	1.57												
14	1.71	3.87	1.57	547	7801	149	2125	6	86	1308	18655	104	1479	15	219
15	1.66	4.30	1.53	383	5290	142	1961	4	55	604	8342	76	1048	4	50
16	1.33	4.56	1.21	311	3439	115	1272	3	33	575	6359	61	677	8	92
17	1.62	4.99	1.52												
18	2.01	3.99	1.94												
19	1.42	3.91	1.41												
20	1.90	4.37	1.76												
21	1.72	4.20	1.68	536	7707	241	3465	5	72	1144	16449	230	3302	13	190
22	1.41	3.93	1.36	334	3933	155	1825	3	35	564	6645	93	1096	12	136
23	1.42	5.05	1.32	341	4036	142	1680	4	47	884	10464	67	789	12	141
24	1.51	3.81	1.51												
25	1.89	4.12	1.95												
26	1.35	4.12	1.39												
27	1.77	3.64	1.81												
28	1.84	3.74	1.79	308	4729	126	1935	6	92	807	12385	135	2075	16	242
29	1.36	3.63	1.38	230	2607	109	1235	4	45	445	5049	60	684	3	34
30	1.43	4.76	1.35	176	2092	127	1509	3	36	463	5497	71	841	9	111
31	1.61	6.25	1.50												
TOTAL	51.25		48.80		60985		25929		823		119255		17788		2178
AVG	1.65	4.2	1.57	330	4356	141	1852	4	59	642	8518	95	1271	12	156
MAX	2.01	6.3	1.95	547	7801	241	3465	7	92	1308	18655	230	3302	22	324
MIN	1.33	3.6	1.21	176	2092	106	1235	3	33	336	4528	54	677	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.44	3.98	1.36												
2	1.94	4.39	1.91												
3	1.63	5.21	1.57												
4	1.48	4.96	1.39	349	4308	127	1568	6	74	812	10019	71	874	12	148
5	1.92	4.42	1.83	253	4051	142	2274	4	64	473	7575	95	1520	8	124
6	1.20	4.15	1.12	288	2873	155	1546	4	40	418	4166	85	853	12	115
7	1.60	4.16	1.51												
8	2.02	5.06	1.96												
9	1.71	4.88	1.61												
10	1.56	4.71	1.54												
11	1.60	4.45	1.54	444	5921	152	2027	8	107	1002	13367	107	1422	14	182
12	1.63	4.77	1.55	342	4644	166	2254	4	54	500	6789	79	1072	5	73
13	1.28	4.64	1.21	348	3721	15	160	3	32	439	4697	81	869	4	47
14	1.46	4.14	1.42												
15	1.73	4.37	1.81												
16	1.61	4.44	1.64												
17	1.53	4.62	1.56												
18	1.49	4.86	1.53	425	5292	138	1718	5	62	863	10742	71	882	11	134
19	1.44	4.33	1.45	394	4745	194	2336	5	60	567	6824	96	1160	9	114
20	1.17	4.50	1.17	195	1903	104	1015			384	3747	79	774	8	76
21	1.49	4.93	1.43												
22	1.86	5.49	1.84												
23	1.70	5.72	1.66												
24	1.68	4.91	1.57												
25	1.53	4.77	1.52	279	3553	158	2012	8	102	487	6196	106	1347	22	284
26	1.52	4.27	1.49	227	2885	146	1856	5	64	308	3915	182	2319	9	113
27	1.28	4.35	1.25	200	2128	132	1405	5	53	293	3119	86	917	12	125
28	1.49	5.20	1.42												
29	1.85	4.95	1.83												
30	1.52	4.84	1.48												
31															
TOTAL	47.33		46.18		46023		20171		712		81157		14008		1534
AVG	1.58	4.7	1.54	312	3835	136	1681	5	65	545	6763	95	1167	10	128
MAX	2.02	5.7	1.96	444	5921	194	2336	8	107	1002	13367	182	2319	22	284
MIN	1.17	4.0	1.12	195	1903	15	160	3	32	293	3119	71	774	4	47

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.58	4.35	1.54												
2	1.64	5.69	1.55	332	4533	132	1802	9	123	637	8690	81	1106	42	576
3	1.67	5.60	1.58	270	3756	152	2114	3	42	184	2560	196	2727	9	121
4	1.47	5.29	1.48	130	1592	104	1273	4	49	121	1482	238	2910	37	454
5	1.62	5.29	1.63												
6	2.09	4.79*	2.03												
7	1.71	4.33	1.58												
8	1.71	4.95	1.59												
9	1.62	5.43	1.57	287	3887	121	1639	5	68	851	11531	153	2075	22	297
10	1.42	4.70	1.34	385	4553	172	2034	5	59	500	5913	104	1225	10	121
11	1.68	5.13	1.59	473	6612	183	2558	4	56	448	6262	90	1256	14	197
12	1.49	4.97	1.44												
13	1.64	4.57	1.61												
14	2.27	4.87	2.39												
15	1.70	4.23	1.83												
16	1.58	3.96	1.60	456	6020	169	2231	6	79	629	8308	104	1372	15	198
17	1.76	4.29	1.87	278	4090	124	1824	4	59	568	8352	86	1272	15	224
18	1.20	7.26	1.28	434	4347	152	1522	6	60	572	5733	90	900	14	145
19	1.64	4.18	1.69												
20	1.87	4.83	1.99												
21	1.54	4.01	1.69												
22	1.38	4.00	1.52												
23	2.04	4.03	2.15	343	5830	127	2159	10	170	785	13340	81	1381	16	264
24	1.14	4.92	1.21	226	2154	145	1382	4	38	414	3945	100	953	10	91
25	1.50	4.25	1.47	239	2988	127	1588	4	50	331	4135	55	682	17	210
26	1.60	4.29	1.67												
27	1.73	5.17	1.81												
28	1.40	4.01	1.54												
29	1.51	4.50	1.73												
30	1.41	3.54	1.59	548	6462	165	1946	7	83	789	9300	86	1017	18	210
31	1.49	4.03	1.56	411	5111	181	2251	6	75	535	6648	102	1266	15	184
TOTAL	50.08		51.12		61935		26324		1010		96201		20142		3292
AVG	1.62	4.7	1.65	344	4424	147	1880	6	72	526	6872	112	1439	18	235
MAX	2.27	7.3	2.39	548	6612	183	2558	10	170	851	13340	238	2910	42	576
MIN	1.14	3.5	1.21	130	1592	104	1273	3	38	121	1482	55	682	9	91

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.13	4.07	1.19	287	2700	140	1317	3	28	389	3662	109	1026	9	84
2	1.60	4.46	1.68												
3	1.66	5.71	1.76												
4	1.48	4.75	1.62												
5	1.45	3.76	1.58												
6	1.48	4.13	1.57	510	6274	197	2423	6	74	782	9615	111	1367	18	223
7	1.42	4.10	1.52	369	4367	175	2071	6	71	481	5695	80	947	14	162
8	1.12	4.10	1.19	269	2506	182	1695	3	28	368	3424	184	1718	19	172
9	1.40	3.71	1.52												
10	1.43	4.47	1.54												
11	1.59	3.71	1.91												
12	1.38	4.49	1.50												
13	1.64	4.11	1.72	363	4962	144	1968	7	96	745	10182	100	1367	21	292
14	1.65	4.02	1.75	423	5807	135	1853	5	69	648	8898	64	874	12	166
15	0.90	4.02	0.99	319	2397	149	1120	4	30	403	3030	81	606	14	102
16	1.37	4.29	1.51												
17	1.71	4.79	1.91												
18	1.57	4.11	1.71												
19	1.72	3.88	1.85												
20	0.90	4.46	1.04	559	4182	191	1429	6	45	656	4906	113	849	16	122
21	1.51	3.91	1.86	337	4252	145	1830	4	50	495	6249	101	1280	13	159
22	0.92	4.17	1.10	230	1770	176	1355	3	23	517	3977	108	829	16	124
23	1.28	4.30	1.52												
24	1.89	4.08	2.11												
25	0.95	3.98	1.12												
26	1.38	3.66	1.59												
27	1.22	4.08	1.29	486	4941	194	1972	14	142	660	6706	76	775	51	514
28	1.23	3.94	1.39	383	3919	130	1330	6	61	583	5963	61	622	19	194
29	1.29	4.06	1.41	540	5814	200	2153	6	65	500	5383	103	1113	16	170
30	1.35	4.50	1.45												
31															
TOTAL	41.59		45.89		53892		22518		782		77692		13373		2484
AVG	1.39	4.2	1.53	390	4146	166	1732	6	60	556	5976	99	1029	18	191
MAX	1.89	5.7	2.11	559	6274	200	2423	14	142	782	10182	184	1718	51	514
MIN	0.90	3.7	0.99	230	1770	130	1120	3	23	368	3030	61	606	9	84

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2013

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.70	5.25	1.79												
2	1.49	5.09	1.58												
3	1.19	3.63	1.37												
4	1.34	3.58	1.47	550	6151	143	1599	6	67	880	9842	113	1268	25	283
5	1.02	3.28	1.46	871	7395	171	1452	8	68	1040	8830	110	931	22	190
6	0.90	3.24	1.22	338	2529	166	1242	6	45	486	3634	88	655	10	78
7	1.20	3.13	1.51												
8	1.39	3.65	1.84												
9	1.28	4.13	1.54												
10	1.22	5.11	1.50												
11	1.22	3.28	1.49	328	3337	359	3653	8	81	274	2786	933	9496	33	339
12	1.13	3.78	1.34	169	1598	156	1475	5	47	226	2133	110	1045	11	108
13	0.99	4.11	1.23	163	1344	121	998	4	33	221	1819	97	803	10	82
14	1.21	4.01	1.45												
15	1.57	4.10	1.84												
16	1.29	4.50	1.53												
17	1.47	4.13	1.51												
18	1.38	3.77	1.50	438	5023	189	2167	7	80	391	4480	89	1021	12	141
19	1.24	4.16	1.51	293	3033	207	2142	6	62	347	3590	111	1144	16	165
20	0.89	3.70	1.13	403	3001	203	1512	5	37	300	2234	95	705	8	60
21	1.13	2.80	1.41												
22	1.45	3.34	1.86												
23	1.24	3.76	1.43												
24	1.03	3.72	1.18												
25	1.45	3.87	1.63	177	2143	148	1792	5	61	181	2189	109	1325	13	161
26	1.17	3.44	1.34	238	2326	139	1359	5	49	218	2133	85	829	12	114
27	1.14	4.10	1.24	317	3017	184	1751	7	67	211	2005	84	799	9	87
28	1.24	3.99	1.43												
29	1.51	3.03	1.80												
30	1.28	3.76	1.53												
31	1.01	3.73	1.20												
TOTAL	38.77		45.87		40898		21143		697		45676		20020		1808
AVG	1.25	3.8	1.48	357	3408	182	1762	6	58	398	3806	169	1668	15	151
MAX	1.70	5.3	1.86	871	7395	359	3653	8	81	1040	9842	933	9496	33	339
MIN	0.89	2.8	1.13	163	1344	121	998	4	33	181	1819	84	655	8	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JANUARY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.41	2.83	1.79	256	3822	206	3075	7	105	210	3135	87	1299	14	209
2	1.20	2.85	1.44	277	3327	155	1861	7	84	215	2582	76	913	10	120
3	1.25	4.29	1.38	294	3384	129	1485	4	46	330	3798	80	921	10	115
4	1.26	3.39	1.49												
5	1.55	3.07	1.86												
6	1.22	3.15	1.47												
7	1.38	2.79	1.68												
8	1.27	2.71	1.54	260	3339	153	1965	7	90	211	2710	74	950	8	103
9	1.30	4.27	1.49	396	4921			7	87	228	2833	95	1181	11	137
10	1.20	4.53	1.30	262	2841	191	2071	6	65	196	2125	80	867	11	119
11	1.45	4.18	1.55												
12	1.43	4.29	1.56												
13	1.69	4.05	1.88												
14	1.58	7.10	1.79												
15	1.47	4.66	1.59	331	4389	185	2453	5	66	319	4230	94	1246	6	80
16	1.13	4.24	1.38	259	2981	146	1680	4	46	237	2728	114	1312	8	92
17	1.37	4.19	1.48	215	2654	150	1851	4	49	191	2358	101	1247	10	123
18	1.34	4.31	1.48												
19	1.47	4.43	1.59												
20	1.58	3.94	1.90												
21	1.25	4.04	1.44												
22	1.36	2.94	1.68	227	3181	161	2256	3	42	217	3040	102	1429	9	126
23	1.33	3.14	1.54	225	2890	210	2697	4	51	187	2402	82	1053	8	103
24	1.14	3.80	1.25	234	2439	175	1824	4	42	221	2304	89	928	8	83
25	1.56	3.87	1.78												
26	1.44	4.24	1.76												
27	1.21	3.11	1.52												
28	1.67	3.20	1.98												
29	1.19	3.63	1.43	284	3387	184	2194	7	83	255	3041	100	1193	15	179
30	1.11	2.84	1.40	266	3106	146	1705	4	47	472	5511	71	829	8	93
31	0.98	2.72	1.16	229	2215			4	39	210	2032	1066	10313	11	106
TOTAL	41.79		48.58		48875		27119		942		44829		25680		1789
AVG	1.35	3.8	1.57	268	3258	169	2086	5	63	247	2989	154	1712	10	119
MAX	1.69	7.1	1.98	396	4921	210	3075	7	105	472	5511	1066	10313	15	209
MIN	0.98	2.7	1.16	215	2215	129	1485	3	39	187	2032	71	829	6	80

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
FEBRUARY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.17	3.24	1.47												
2	1.58	4.24	1.92												
3	1.34	2.49	1.67												
4	1.42	2.74	1.77												
5	0.94	2.92	1.22	336	2631	176	1378	4	31	285	2230	95	744	9	72
6	1.40	2.65	1.76	360	4212	213	2492	4	47	240	2808	67	780	5	58
7	0.90	2.78	1.10	224	1689	145	1093	3	23	306	2304	131	989	6	47
8	1.22	2.70	1.54												
9	1.51	2.73	1.93												
10	1.37	2.68	1.66												
11	1.33	2.81	1.57												
12	1.35	2.98	1.51	312	3508	190	2136	6	67	270	3033	108	1211	10	116
13	1.35	2.97	1.61	304	3413	166	1863	7	79	255	2864	93	1042	9	105
14	0.99	2.66	1.16	250	2060	148	1220	4	33	209	1723	85	697	11	88
15	1.27	3.58	1.46												
16	1.34	2.96	1.53												
17	1.73	3.52	1.90												
18	1.23	7.26	1.41												
19	1.42	3.84	1.57	313	3709	170	2015	10	119	245	2908	91	1079	12	144
20	1.24	4.07	1.49	211	2184	138	1428	4	41	255	2635	70	721	7	75
21	1.15	3.69	1.31	196	1878	136	1303	3	29	193	1848	82	787	10	96
22	1.24	2.70	1.48												
23	1.30	2.84	1.65												
24	1.57	2.32	1.83												
25	1.28	2.73	1.56												
26	1.32	2.76	1.55	317	3485	204	2242	9	99	312	3434	81	890	23	258
27	1.34	2.37	1.53	280	3134	183	2048	6	67	286	3203	91	1016	18	200
28	0.91	2.94	1.06	265	2000	365	2755	4	30	230	1738	140	1055	8	63
29															
30															
31															
TOTAL	36.18		43.19		33903		21975		665		30728		11010		1322
AVG	1.29	3.15	1.54	281	2825	186	1831	5	55	257	2561	94	918	11	110
MAX	1.73	7.26	1.93	360	4212	365	2755	10	119	312	3434	140	1211	23	258
MIN	0.90	2.32	1.06	196	1689	136	1093	3	23	193	1723	67	697	5	47

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MARCH 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.43	2.70	1.77												
2	1.44	2.77	1.68												
3	1.32	2.52	1.55												
4	1.20	2.35	1.43												
5	1.44	2.53	1.59	356	4269	200	2399	7	84	293	3514	94	1124	10	121
6	1.45	3.93	1.56	360	4359	160	1938	5	61	336	4065	90	1086	9	108
7	1.17	2.60	1.35	294	2869	188	1834	4	39	259	2530	107	1045	8	77
8	1.32	3.46	1.41												
9	1.66	4.06	1.77												
10	1.43	4.95	1.53												
11	1.46	3.72	1.56												
12	1.50	3.82	1.59	284	3541	154	1920	5	62	267	3324	92	1143	7	84
13	1.49	3.25	1.57	225	2794	153	1900	4	50	265	3285	103	1277	8	105
14	1.15	3.86	1.20	302	2891	131	1254	5	48	273	2611	54	518	5	53
15	1.33	2.82	1.49												
16	1.88	4.10	1.99												
17	1.46	3.37	1.53												
18	1.47	3.52	1.58												
19	1.48	3.98	1.56	273	3370	271	3345	8	99	266	3284	253	3119	8	95
20	1.17	3.17	1.20	287	2800	253	2469	8	78	203	1983	295	2882	37	364
21	1.12	2.75	1.19	210	1963	136	1271	3	28	244	2284	99	925	20	184
22	1.28	3.13	1.37												
23	1.65	3.12	1.76												
24	1.64	2.95	1.74												
25	1.49	2.95	1.51												
26	1.66	3.22	1.69	412	5704	198	2741	8	111	356	4927	93	1291	3	37
27	1.21	3.24	1.26	308	3100	154	1550	5	50	314	3159	76	769	8	77
28	1.16	3.44	1.21	281	2723	219	2122	5	48	246	2385	97	940	8	74
29	1.46	3.26	1.47												
30	1.87	3.39	1.91												
31	1.37	3.48	1.45												
TOTAL	44.15		47.46		40385		24744		758		37352		16120		1378
AVG	1.42	3.30	1.53	299	3365	185	2062	6	63	277	3113	121	1343	11	115
MAX	1.88	4.95	1.99	412	5704	271	3345	8	111	356	4927	295	3119	37	364
MIN	1.12	2.35	1.19	210	1963	131	1254	3	28	203	1983	54	518	3	37

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
APRIL 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.32		1.35												
2	1.43		1.43	310	3707	166	1985			279	3332	80	953	18	212
3	1.86		1.81	370	5740	207	3211			302	4689	97	1507	21	332
4	1.16		1.12	268	2591	144	1392			233	2255	86	831	22	216
5	1.56		1.53												
6	1.79		1.77												
7	1.82		1.78												
8	1.48		1.47												
9	1.52		1.49	298	3780	131	1662	13	165	325	4119	71	906	22	280
10	1.55		1.51	292	3765	172	2218	13	168	275	3546	95	1227	22	290
11	1.25		1.21	314	3284	191	1998	13	136	304	3176	122	1276	29	304
12	1.63		1.56												
13	1.60		1.57												
14	1.78		1.71												
15	1.63		1.54												
16	1.57		1.50	239	3137	129	1693	14	184	263	3451	69	912	34	443
17	1.56		1.46	243	3157	185	2404	13	169	229	2978	77	1006	16	205
18	1.50		1.33	396	4941	177	2208	15	187	474	5913	127	1582	34	425
19	1.94		1.75												
20	1.59		1.42												
21	1.96		1.76												
22	1.62		1.43												
23	1.76		1.56	288	4235	157	2308	11	162	273	4014	117	1715	19	272
24	1.88		1.64	319	5012	169	2655	9	141	242	3804	100	1571	16	246
25	1.26		1.08	230	2409	142	1487	9	94	225	2357	98	1025	18	189
26	1.78		1.52												
27	2.50		2.19												
28	2.03		1.80												
29	2.13		1.95												
30	2.30		1.87	285	5464	159	3049	9	173	221	4231	102	1950	18	347
31															
TOTAL	50.76		47.10		51223		28271		1578		47865		16461		3761
AVG	1.69		1.57	296	3940	164	2175	12	158	280	3682	95	1266	22	289
MAX	2.50		2.19	396	5740	207	3211	15	187	474	5913	127	1950	34	443
MIN	1.16		1.08	230	2409	129	1392	9	94	221	2255	69	831	16	189

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
MAY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.55	2.71	1.35	344	4453	184	2382	8	104	319	4126	109	1412	20	252
2	1.43	2.82	1.22	202	2407	113	1347	6	72	230	2741	83	986	21	246
3	1.86	2.49	1.57												
4	2.27	2.50	1.96												
5	1.70	2.69	1.46												
6	2.00	2.68	1.75												
7	1.98	2.66	1.74	280	4619	137	2260	7	115	213	3512	87	1432	20	330
8	2.08	2.70	1.86	261	4525	170	2948	7	121	387	6704	93	1614	18	306
9	1.57	2.62	1.35	210	2743	179	2338	7	91	180	2351	110	1437	22	286
10	1.79	1.93	1.58												
11	2.29	2.53	2.07												
12	1.82	2.73	1.64												
13	2.01	2.73	1.82												
14	1.86	3.12	1.69	214	3321	146	2266	6	93	175	2716	95	1477	11	167
15	1.63	2.36	1.48	320	4339	176	2387	6	81	265	3594	94	1279	8	102
16	1.61	2.28	1.46	237	3186	154	2070	7	94	159	2141	77	1033	12	159
17	1.78	2.23	1.61												
18	2.14	2.05	1.96												
19	1.93	2.81	1.79												
20	1.96	3.15	1.83												
21	1.66	2.66	1.55	445	6150	121	1672	9	124	1154	15945	80	1110	11	150
22	1.78	2.82	1.63	228	3383	147	2181	6	89	180	2664	90	1335	14	205
23	1.54	2.21	1.42	210	2688	146	1869	5	64	164	2101	90	1157	10	129
24	1.60	1.95	1.47												
25	1.84	2.37	1.75												
26	2.07	2.37	1.93												
27	1.75	2.72	1.66												
28	1.99	2.64	1.84	236	3909	238	3942	7	116	192	3175	49	816	11	177
29	1.99	2.46	1.87	218	3622	132	2193	5	83	207	3441	97	1611	8	138
30	1.35	2.57	1.27	257	2904	129	1458	6	68	224	2535	62	700	11	127
31	1.99	2.81	1.86												
TOTAL	56.80		51.42		52250		31312		1316		57746		17398		2775
AVG	1.83	2.56	1.66	262	3732	155	2237	7	94	289	4125	87	1243	14	198
MAX	2.29	3.15	2.07	445	6150	238	3942	9	124	1154	15945	110	1614	22	330
MIN	1.35	1.93	1.22	202	2407	113	1347	5	64	159	2101	49	700	8	102

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JUNE 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	2.51	2.53	2.36												
2	1.51	2.93	1.47												
3	2.11	2.99	1.99												
4	1.82	2.80	1.71	180	2737	119	1809	5	76	213	3240	79	1197	13	197
5	1.81	2.53	1.72	284	4292	147	2221	6	91	310	4690	112	1696	10	158
6	1.47	2.56	1.38	192	2347	108	1320	4	49	222	2717	75	912	10	122
7	1.62	2.22	1.55												
8	2.39	2.41	2.27												
9	1.35	2.86	1.30												
10	2.03	2.67	1.92												
11	1.71	2.70	1.61	225	3211	128	1827	6	86	222	3161	88	1253	9	128
12	1.93	2.71	1.82	198	3194	135	2177	4	65	207	3333	75	1202	10	155
13	1.47	2.98	1.37	224	2754	151	1856	5	61	174	2144	110	1354	12	147
14	1.86	2.66	1.74												
15	2.16	2.30	2.05												
16	1.89	2.94	1.79												
17	1.89	2.80	1.78												
18	1.86	2.72	1.80	200	3099	129	1999	4	62	197	3051	102	1573	9	137
19	1.89	7.25	1.82	184	2894	172	2705	4	63	170	2680	119	1878	10	157
20	1.49	2.67	1.45	162	2008	113	1400	3	37	159	1976	75	929	5	60
21	1.76	2.38	1.64												
22	2.16	2.45	2.07												
23	1.76	3.84	1.68												
24	1.74	2.90	1.67												
25	1.90	3.06	1.81	272	4317	158	2508	5	79	187	2967	81	1288	6	97
26	1.99	2.65	1.87	203	3371	133	2208	4	66	205	3404	86	1427	7	118
27	1.59	2.91	1.48	278	3679	130	1721	4	53	257	3403	47	623	11	149
28	1.74	2.64	1.62												
29	2.07	2.63	1.96												
30	1.83	2.59	1.73												
31															
TOTAL	55.31		52.41		37902		23753		788		36767		15334		1623
AVG	1.84	2.88	1.75	217	3159	135	1979	5	66	210	3064	87	1278	9	135
MAX	2.51	7.25	2.36	284	4317	172	2705	6	91	310	4690	119	1878	13	197
MIN	1.35	2.22	1.30	162	2008	108	1320	3	37	159	1976	47	623	5	60

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
JULY 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.90	2.61	1.77												
2	1.56	2.59	1.48	211	2740	126	1636	3	39	229	2980	103	1336	7	87
3	1.52	1.88	1.42	231	2921	129	1631	4	51	172	2181	69	872	3	41
4	1.64	2.43	1.60	210	2869	113	1544	3	41	221	3022	64	871	10	137
5	1.47	2.23	1.49												
6	1.95	2.20	1.96												
7	1.71	2.39	1.69												
8	1.44	2.51	1.45												
9	1.65	2.53	1.61	286	3928	140	1923	4	55	271	3720	94	1290	8	105
10	1.95	2.41	1.92	194	3152	129	2096	3	49	189	3069	77	1255	6	90
11	1.32	2.84	1.31	379	4188	182	2011	4	44	240	2647	108	1193	4	48
12	1.60	2.59	1.56												
13	1.82	2.70	1.80												
14	1.69	2.41	1.70												
15	1.63	3.63	1.63												
16	1.55	2.23	1.54	221	2864	110	1426	5	65	242	3135	82	1058	3	45
17	1.63	2.03	1.60	232	3156	143	1945	5	68	218	2968	94	1279	10	136
18	1.28	2.59	1.25	225	2406	130	1390	4	43	224	2398	82	873	8	84
19	1.54	2.03	1.50												
20	1.95	1.91	1.92												
21	1.67	2.44	1.64												
22	1.52	2.55	1.49												
23	2.13	2.67	2.07	148	2628	123	2184	5	89	267	4744	67	1194	10	175
24	1.11	2.48	1.10	322	2986	170	1577	5	46	253	2348	84	780	8	79
25	1.47	7.28	1.42	357	4368	110	1346	4	49	496	6070	68	828	10	121
26	1.60	1.98	1.55												
27	1.96	2.70	1.94												
28	1.30	2.84	1.26												
29	1.94	2.47	1.97												
30	1.44	2.76	1.50	349	4197	143	1720	5	60	355	4266	82	982	10	118
31	1.66	3.35	1.65	238	3285	159	2195	5	69	171	2362	92	1274	3	36
TOTAL	50.59		49.80		45688		24622		767		45909		15086		1301
AVG	1.63	2.65	1.61	257	3263	136	1759	4	55	254	3279	83	1078	7	93
MAX	2.13	7.28	2.07	379	4368	182	2195	5	89	496	6070	108	1336	10	175
MIN	1.11	1.88	1.10	148	2406	110	1346	3	39	171	2181	64	780	3	36

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
AUGUST 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.28	2.88	1.30	209	2226	160	1704	5	53	209	2223	89	944	10	111
2	1.45	2.70	1.48												
3	1.76	2.38	1.78												
4	1.70	2.48	1.68												
5	1.76	7.24	1.62												
6	1.06	7.58	1.19	233	2062	132	1168	3	27	262	2316	145	1280	23	205
7	1.42	2.25	1.52	222	2638	127	1509	3	36	202	2405	95	1127	25	293
8	1.43	2.20	1.52	213	2533	114	1356	3	36	230	2735	79	938	16	187
9	1.30	2.20	1.40												
10	1.56	2.80	1.74												
11	1.40	2.48	1.52												
12	1.51	2.18	1.63												
13	1.21	2.08	1.32	234	2359	135	1361	6	60	268	2700	75	761	16	163
14	1.49	1.93	1.61	204	2530	144	1786	5	62	222	2756	79	985	5	58
15	1.17	1.87	1.28	215	2093	132	1285	4	39	203	1978	82	799	7	69
16	1.17	1.91	1.27												
17	1.56	1.87	1.73												
18	1.67	2.60	1.81												
19	1.12	2.31	1.22												
20	1.30	2.03	1.40	201	2176	122	1321	4	43	262	2832	88	949	6	64
21	1.53	2.25	1.66	286	3649	144	1837	4	51	216	2751	63	798	4	53
22	1.08	1.95	1.14	213	1917	120	1080	3	27	212	1904	86	777	7	62
23	1.38	2.05	1.49												
24	1.53	2.02	1.66												
25	1.22	2.18	1.33												
26	1.58	2.09	1.70												
27	1.52	2.10	1.61	241	3047	130	1644	3	38	627	7933	98	1242	7	95
28	1.17	2.22	1.24	192	1867	135	1313			422	4102	138	1343	4	34
29	1.32	1.92	1.40	266	2933	128	1411	3	33	192	2113	35	385	3	38
30	1.32	1.80	1.39												
31	1.26	1.75	1.37												
TOTAL	43.21		46.04		32030		18775		505		38748		12328		1431
AVG	1.39	2.53	1.49	225	2464	133	1444	4	42	271	2981	89	948	10	110
MAX	1.76	7.58	1.81	286	3649	160	1837	6	62	627	7933	145	1343	25	293
MIN	1.06	1.75	1.14	192	1867	114	1080	3	27	192	1904	35	385	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
SEPTEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.50	1.79	1.37												
2	1.35	1.83	1.35												
3	1.34	2.57	1.44	338	3777	132	1475	3	34	587	6560	79	883	8	89
4	1.58	6.03	1.70	328	4322	171	2253	4	53	333	4388	85	1120	3	40
5	0.84	1.87	0.83	250	1751	166	1163			378	2648	94	659	7	49
6	1.31	2.10	1.39												
7	1.62	2.03	1.74												
8	1.45	2.08	1.55												
9	1.30	2.32	1.26												
10	1.23	2.36	1.06	267	2739	160	1641	4	41	231	2370	86	882	3	31
11	1.53	1.98	1.34	196	2501	167	2131			280	3573	139	1774	2	26
12	1.14	2.00	0.94	234	2225	182	1730	3	29	235	2234	93	884	6	57
13	1.29	2.05	1.22												
14	1.58	1.97	1.56												
15	1.46	2.11	1.48												
16	1.32	2.28	1.36												
17	1.46	2.79	1.54	238	2898	137	1668	3	37	247	3008	59	718	14	170
18	1.41	1.98	1.48	248	2916	174	2046	4	47	297	3493	94	1105	7	82
19	1.08	2.00	1.13	218	1964	151	1360	3	27	211	1901	90	811	4	36
20	1.27	2.01	1.35												
21	1.69	2.00	1.79												
22	1.32	2.05	1.40												
23	1.35	2.12	1.46												
24	1.39	2.13	1.49	216	2504	165	1913	4	46	184	2133	121	1403	7	81
25	1.36	2.13	1.44	171	1940	112	1270	3	34	176	1996	70	794	6	68
26	1.15	9.99	1.18	209	2005	107	1026	3	29	166	1592	82	786	5	48
27	1.90	1.87	1.40												
28	1.70	1.99	1.83												
29	1.42	9.98	1.51												
30	1.76	1.97	1.88												
31															
TOTAL	42.10		42.47		31542		19678		376		35895		11819		777
AVG	1.40	2.75	1.42	243	2628	152	1640	3	38	277	2991	91	985	6	65
MAX	1.90	9.99	1.88	338	4322	182	2253	4	53	587	6560	139	1774	14	170
MIN	0.84	1.79	0.83	171	1751	107	1026	3	27	166	1592	59	659	2	26

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
OCTOBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.35		1.44	252	2837	127	1430	4	45	210	2364	71	799	3	34
2	1.08		1.02	165	1486	127	1144	3	27	258	2324	106	955	5	45
3	1.09	2.11	1.02	231	2100	124	1127	4	36	210	1909	34	309	6	55
4	1.33	1.94	1.25												
5	1.52	2.05	1.65												
6	1.42		1.53												
7	1.24	2.10	1.25												
8	1.40		1.34	295	3444	170	1985	5	58	294	3433	82	957	3	35
9	1.35	2.07	1.21	214	2409	197	2218	3	34	253	2849	83	934	5	56
10	1.22	2.26	1.21	287	2920	130	1323	4	41	196	1994	67	682	4	41
11	1.30	1.85	1.37												
12	1.31	1.83	1.31												
13	1.52		1.45												
14	1.31	2.04	1.35												
15	1.64	2.48	1.77	347	4746	153	2093	6	82	256	3501	84	1149	6	82
16	1.36	1.93	1.48	268	3040	143	1622	6	68	226	2563	91	1032	8	91
17	0.95	1.92	0.92	327	2591	154	1220	4	32	254	2012	67	531	5	40
18	1.29	1.90	1.28												
19	1.47	2.04	1.55												
20	1.52		1.65												
21	1.35		1.40												
22	1.35	2.42	1.30	260	2927	126	1419	8	90	395	4447	87	980	9	101
23	1.15	1.98	1.08	297	2849	183	1755	6	58	765	7337	111	1065	5	48
24	1.31	1.98	1.31	239	2611	145	1584	6	66	503	5495	106	1158	12	131
25	1.36	2.03	1.47												
26	1.35	2.03	1.47												
27	1.44	2.22	1.53												
28	1.77	2.22	1.90												
29	1.28	4.74	1.38	405	4323	126	1345	6	64	582	6213	48	512	6	64
30	0.94	2.30	0.96	438	3434	141	1105	5	39	282	2211	41	321	5	39
31	1.09	2.09	1.49	457	4154	248	2254	6	55	332	3018	110	1000	4	36
TOTAL	41.06		42.34		45873		23624		794		51672		12385		898
AVG	1.32	2.19	1.37	299	3058	153	1575	5	53	334	3445	79	826	6	60
MAX	1.77	4.74	1.90	457	4746	248	2254	8	90	765	7337	111	1158	12	131
MIN	0.94	1.83	0.92	165	1486	124	1105	3	27	196	1909	34	309	3	34

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
NOVEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.30	1.78	1.46												
2	1.57	1.86	1.77												
3	1.23	2.21	1.39												
4	1.29	2.26	1.36												
5	1.20	2.07	1.21	387	3873	188	1882	8	80	312	3122	119	1191	7	70
6	1.32	2.09	1.49	262	2884	210	2312	3	33	270	2972	150	1651	9	99
7	1.26	2.24	1.25	376	3951	160	1681	5	53	271	2848	65	683	5	53
8	1.16	1.61	1.00												
9	1.39	1.66	1.06												
10	1.11	2.24	1.23												
11	1.73	1.87	1.97												
12	0.86	1.97	1.03	217	1556	117	839	7	50	251	1800	65	466	16	115
13	1.17		1.39	234	2283	128	1249	6	59	192	1873	43	420	8	78
14	1.29	2.10	1.19	255	2743	146	1571	6	65	217	2335	72	775	3	32
15	1.09	1.73	1.25												
16	1.31	1.93	1.29												
17	1.19	2.36	1.37												
18	1.35	2.13	1.29												
19	1.07	2.02	1.14	238	2124	138	1231	7	62	271	2418	110	982	13	116
20	1.19	2.05	1.37	382	3791	171	1697	6	60	352	3493	116	1151	12	119
21	1.13	2.25	1.26	409	3854	162	1527	6	57	192	1809	78	735	7	66
22	1.24	2.27	1.35												
23	1.35	2.10	1.55												
24	1.42	2.24	1.61												
25	1.20	1.28	1.37												
26	1.16	2.08	1.32	297	2873	151	1461	5	48	338	3270	110	1064	8	77
27	1.14	1.94	1.29	327	3109	196	1863	6	57	313	2976	94	894	7	67
28	1.21	1.89	1.35	373	3764	252	2543	6	61	304	3068	111	1120	10	101
29	1.20	1.75	1.37												
30	1.36	1.79	1.61												
31															
TOTAL	37.49		40.59		36808		19856		683		31986		11132		993
AVG	1.25	1.99	1.35	313	3067	168	1655	6	57	274	2665	94	928	9	83
MAX	1.73	2.36	1.97	409	3951	252	2543	8	80	352	3493	150	1651	16	119
MIN	0.86	1.28	1.00	217	1556	117	839	3	33	192	1800	43	420	3	32

CITY of PIERRE, SOUTH DAKOTA
WATER POLLUTION CONTROL FACILITY
DECEMBER 2014

	FLOW - MGD			BIOCHEMICAL OXYGEN DEMAND						TOTAL SUSPENDED SOLIDS					
DATE	TOTAL INFLUENT (EFF. FLUME)	PEAK INFLUENT (EFF. FLUME)	PRIMARY CLARIFIER INFLUENT (INF. FLUME)	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF. MG/L	FINAL EFF. LBS	RAW WW-MG/L	RAW WW-LBS	PRIMARY EFF.-MG/L	PRIMARY EFF.-LBS	FINAL EFF.MG/L	FINAL EFF. LBS
1	1.36	2.31	1.49												
2	1.14	2.07	1.26												
3	1.56	2.29	1.70	640	9074	132	1871	4	57	959	13597	96	1361	4	57
4	1.21	1.85	1.30	676	7329	164	1778	5	54	914	9910	132	1431	3	33
5	0.98	2.23	1.08	519	4675	151	1360	4	36	761	6854	94	847	6	54
6	1.40	1.78	1.53												
7	1.25	1.78	1.39												
8	1.21	2.33	1.32												
9	1.35	2.01	1.52												
10	1.15	1.81	1.25	374	3899	200	2085	6	63	350	3649	113	1178	12	125
11	1.25	1.83	1.38	203	2336	151	1738	3	35	296	3407	197	2267	22	253
12	1.09	1.78	1.20	225	2252	152	1521	4	40	244	2442	127	1271	10	100
13	1.10	1.71	1.25												
14	1.28	1.74	1.46												
15	1.21	2.32	1.36												
16	1.25	1.77	1.42												
17	0.89	1.77	1.01	358	3016	154	1297	6	51	421	3546	82	691	7	59
18	1.13	1.64	1.32	563	6198	205	2257	5	55	691	7607	110	1211	6	66
19	1.09	1.67	1.23	493	5057	185	1898	5	51	537	5509	94	964	8	82
20	1.15	1.75	1.30												
21	1.38	1.84	1.55												
22	1.17	2.70	1.30												
23	1.07	1.64	1.12												
24	1.12	1.64	1.37	397	4536	176	2011	7	80	364	4159	51	583	5	57
25	0.98	1.49	1.11	314	2907	153	1416	5	46	231	2138	61	565	3	28
26	0.99	1.61	1.18	359	3533	163	1604	5	49	335	3297	44	433	6	59
27	1.10	1.71	1.27												
28	0.95	1.67	1.09												
29	1.12	2.09	1.34												
30	1.06	1.70	1.30												
31	0.79	1.80	0.88	446	3273	168	1233	10	73	1387	10179	67	492	7	51
TOTAL	35.78		40.28		58085		22070		690		76294		13293		1024
AVG	1.15	1.9	1.30	428	4468	166	1698	5	53	576	5869	98	1023	8	79
MAX	1.56	2.7	1.70	676	9074	205	2257	10	80	1387	13597	197	2267	22	253
MIN	0.79	1.5	0.88	203	2252	132	1233	3	35	231	2138	44	433	3	28

APPENDIX D

COST ESTIMATE

Opinion of Probable Project Costs

BANNER
Engineering | Architecture | Surveying
Banner Associates, Inc. | 2307 W 57th St, Ste 102
Sioux Falls, South Dakota 57108
Toll Free | 1.855.323.6342
www.bannerassociates.com

Location: Pierre, SD
Date: February 10, 2015
Project: Wastewater Treatment Study
BAI 21693.00

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$140,000	$145,000
Primary Clarifier Rehabilitation					
2	Remove Primary Clarifier Drive, Launders, Bridge, etc.	2	Ea	$6,000	$12,000
3	Tank Cleaning and Debris Removal	1	Lump Sum	$1,500	$1,500
4	Remove & Replace Primary Clarifier Aluminum Dome	2	Ea	$9,000	$18,000
5	60' diam SS Primary Clarifier Drive, Launders, Bridge, etc.	2	Ea	$326,250	$652,500
6	Concrete Special Coatings Repair	1	Lump Sum	$100,000	$100,000
7	Concrete Testing & Repair	1	Lump Sum	$20,000	$20,000
8	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$809,000
Grit Removal Rehabilitation					
9	Remove Existing Grit Removal and Classifier Equipment	1	Lump Sum	$4,500	$4,500
10	Tank/Channel Cleaning and Debris Removal	1	Lump Sum	$750	$750
11	Grit Removal and Grit Classifer Equipment	1	Lump Sum	$198,000	$198,000
12	Pipe and Valve Replacement	1	Lump Sum	$74,679	$74,679
13	Concrete Special Coatings Repair	1	Lump Sum	$35,000	$35,000
14	Concrete Testing & Repair	1	Lump Sum	$50,000	$50,000
15	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$368,000
Air Line Replacement (Blower Building to Air Lift Station)					
16	Remove Existing Piping/Supports/Equipment	1	Lump Sum	$5,000	$5,000
17	Double Link Seal for 14" Wall Sleeve	1	EA	$1,200	$1,200
18	10" Flexible Expansion Joint	3	EA	$800	$2,400
19	Thrust Blocks	1	Lump Sum	$1,800	$1,800
20	10" MJ DI Pipe	180	LF	$35	$6,300
21	10" MJ Long Body Sleeve	2	EA	$820	1640
22	10" MJ 45 Deg Bend DIP	2	EA	$410	$820
23	10" MJ 90 Deg Bend DIP	3	EA	$470	$1,410
24	Pipe Bedding Material	54	TONS	$35	$1,890
25	Brick Exterior/Surface Repair	1	Lump Sum	$1,200	$1,200
26	By-Pass Pumping	1	Lump Sum	$5,000	$5,000
				Sub-Total	$29,000
				Contingencies (10% Construction Costs)	$135,100
				Opinion of Probable Construction Costs	$1,486,100
				Engineering, Surveying, and Construction Services =	$256,200
				Administration and Legal =	$29,800
				Opinion of Total Project Costs (2015) =	**$1,772,100**

WRAP Review Sheet
Clean Water Facilities Funding Application
Applicant: City of Miller

Project Title:	Wastewater and Stormwater Improvement Project – Phase I
Funding Requested:	$6,499,000
Other Proposed Funding:	$1,000 – USDA Rural Development
Total Project Cost:	$6,500,000
Project Description:	The city of Miller is experiencing problems with its wastewater system. The city is proposing to replace its aging infrastructure in consecutive phases. Phase I sewer main work includes the lowest elevation area near the city's east lift station. This project includes replacement of over 10,000 linear feet of sanitary sewer, 3,930 feet of service pipe, manholes and appurtenances, and surfacing costs. Other improvements to the wastewater system include the repair of the West Lift Station, East Lift Station Replacement, and installation of a SCADA system at both lift stations. Phase I stormwater improvements include spot repairs and upstream improvements to the central stormwater system and an extension to the Northeast drainage system. Stormwater system improvements will be completed in conjunction with Phase I sewer and water work in order to decrease road surfacing costs.
Alternatives Evaluated:	"Do Nothing" is not recommended as it does not correct the deteriorating conditions that face thecCity's storm and wastewater systems. "Priority 3 Sanitary Sewer" alternative replaces infrastructure that is not in critical condition. This alternative was not chosen in favor of addressing the Priority 1 and 2 sewer improvements. "WWTF Expansion" alternative proposes to increase hydraulic capacity at the city's wastewater treatment facility. This alternative was not chosen in favor of addressing inflow and infiltration issues in the distribution system first.

"West Drainage System" would completely replace the underground storm sewer in that section of the city. This alternative was not chosen in order to address higher priority work.

"Southeast Drainage System" involves installing a storm water system capable of handling a five-year storm event. This alternative was not recommended until Phase 1 work is completed.

"West Second Street Drainage System" proposes replacing deteriorated pipe along West Second Street and the nearby area. This alternative is not recommended until the higher priority Phase 1 and 2 work has been completed.

Implementation Schedule: The city of Miller plans to advertise bids for this project in January 2017 with a completion date of November 2017.

Service Population: 1,461

Current Domestic Rate: $31.65 flat rate

Interest Rate:	3.25%	Term:	30 years	Security:	Stormwater Fees - $1,958,000
Interest Rate:	3.25%	Term:	30 years	Security:	Project Surcharge - $4,541,000

DEBT SERVICE CAPACITY – Stormwater Fees - $1,958,000

Coverage at $1,958,000 Loan	If $1,958,000 is provided as loan, the city of Miller would have to establish stormwater fees at $0.0069 per square foot to have 110 percent debt coverage. Example: a 9,000 square foot lot would have an annual payment of $62.10 or $5.18 per month.

DEBT SERVICE CAPACITY – Wastewater Surcharge - $4,541,000

Coverage at Maximum Loan Amount:	If all funding is provided as loan the city of Miller would have to establish a surcharge of approximately $26.21. When added to current rate of $31.65 residents would be paying a flat rate of $57.87.

25% Funding Subsidy:	$1,135,250 subsidy with a loan of $3,405,750.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $3,405,750, the city of Miller would have to establish a surcharge of approximately $19.65 thereby paying a flat rate of $51.30.

50% Funding Subsidy:	$2,270,500 subsidy with a loan of $2,270,500.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $2,270,500, the city of Miller would have to establish a surcharge of approximately $13.10 thereby paying a flat rate of $44.75.

75% Funding Subsidy:	$3,405,750 subsidy with a loan of $1,135,250.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $1,135,250, the city of Miller would have to establish a surcharge of approximately $6.76 thereby paying a flat rate of $38.41.

ENGINEERING REVIEW COMPLETED BY: DREW HUISKEN

FINANCIAL REVIEW COMPLETED BY: JON PESCHONG

FACILITY PLAN

for the

WASTEWATER, STORM WATER DRAINAGE AND WATER SYSTEMS

IN

MILLER, SOUTH DAKOTA

PROJECT #14141

DECEMBER 2015

SPN & Associates
ENGINEERS-PLANNERS- SURVEYORS
2100 NORTH SANBORN BLVD, P.O. BOX 398
MITCHELL, SOUTH DAKOTA 57301
PHONE 605-996-7761 FAX 605-996-0015

Facility Plan for the

Wastewater, Storm Water Drainage and Water Systems

in

Miller, South Dakota

Project Number: 14141

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Camden A. Hofer, P.E.

Registration No. SD #8322

Date 12-21-15

SCHMUCKER, PAUL, NOHR & ASSOCIATES
CONSULTING ENGINEERS - SURVEYORS
2100 NORTH SANBORN BLVD., PO BOX 398
MITCHELL, SOUTH DAKOTA 57301

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Appendix C Surface Water Discharge Permit
Appendix D Surface Water Discharge Compliance Inspection
Appendix E Storm Water Drainage Calculations

1 INTRODUCTION

1.1 PURPOSE

The City of Miller has contracted with the engineering firm of Schmucker, Paul, Nohr and Associates (SPN) to complete an investigation of its existing wastewater system, storm water drainage system and water system. The intent of the study is to identify and quantify problems that exist within these systems for the City.

The results of the completed study are presented in this Facility Plan. The Facility Plan contains the information with which the City Council of Miller can base cost-effective decisions relating to the necessary improvements to its wastewater collection and treatment systems. The City Council will, after appropriate public input, determine the best options to make any needed improvements that are identified in the Facility Plan.

The purpose of this report is to provide the City with a overall plan which will assist the City in prioritizing the necessary improvements needed for the existing infrastructure. Preliminary opinions of costs for the said improvements are provided to assist the City in their decision-making. This report can be used for budgeting purposes and to support applications for applicable funding sources.

1.2 SCOPE

The scope of work for the wastewater system, storm water drainage system and water system evaluation and study includes:

1) Completing an update of available population data and related information for the purpose of projecting future population trends within the City's service area boundaries.
2) A review of the wastewater pump operation, water purchases, water sales and wastewater treatment plant discharge records.
3) An analysis of the wastewater collection system to identify potential sources and quantities of infiltration/inflow into the wastewater collection system based on a comparison of the available wastewater pumping records at the lift station, the recorded water sales, flow monitoring and the available precipitation event data.

4) Installation of a portable continuous flow recorder in one of the manholes upstream from the treatment facility for the purpose of gathering wastewater flow data.
5) An analysis of the potential for wastewater inflow via smoke testing. Using information collected during the smoke testing of the wastewater collection system, there will be an attempt to determine the location of potential excessive inflow sources.
6) Completing an analysis of the existing water supply system relating to source capacity.
7) Completing an analysis of the existing water distribution system related to storage, water losses in the system, identification of system age, evaluation of current water pressures and fire flow capacities and evaluating the current and future needs.
8) Determining the current wastewater loadings on the wastewater treatment facility and projecting the future wastewater loadings on the wastewater treatment facility using available records along with the above information and analyses.
9) Reviewing the wastewater discharge permit requirements; reviewing the history compliance of the City's wastewater treatment system with the requirements; and evaluating future compliance based on future population projections.
10) An evaluation of the capability of the current systems to meet present and future needs and requirements.
11) Identifying and analyzing requirements of governmental authorities having jurisdiction to approve the design of the project and participating in consultations with such authorities.
12) Preparation of a general economic analysis of Miller's requirements applicable to various alternatives.
13) Identification of current and potential future areas of development in and adjacent to the Client's service area.

1.3 AUTHORIZATION

The firm of Schmucker, Paul, Nohr and Associates was authorized by the governing body of the City of Miller to prepare the wastewater system Facility Plan for funding purposes. The following report presents the findings and conclusions resulting from the authorized study.

2 COMMUNITY DESCRIPTION

2.1 GENERAL INFORMATION

The City of Miller is located in central Hand County, South Dakota, at the intersection of SD Highway 45 and US Highway 14 as indicated on Figure 2.1. The City of Miller was incorporated in 1905. The City has an aldermanic type of government consisting of a Mayor and six council members. These elected representatives hire and oversee staff who manage the day-to-day activities and municipal enterprises undertaken by the City.

Hand County is in the east central part of South Dakota. It has a total surface area of approximately 919,040 acres. Other communities located within the county include Ree Heights, St. Lawrence and Wessington. General livestock and farming are the major sources of income within the county, with about 94 percent of the total acreage of the county devoted to crop production. Corn, soybeans, hay and wheat are the main crops. Miller is a typical rural community that serves the surrounding agricultural area as a retail trade center that provides limited shopping and other essential services.

2.2 POPULATION CHARACTERISTICS

Miller's population is 1,489 according to the 2010 census. The 2010 Census indicates Miller's median age was 51.2 years as compared to the state's median age of 36.9. At the time census data was gathered, 33.2 percent of its population was over the age of 65. In comparison, the state's population that is over the age of 65 is 14.3 percent.

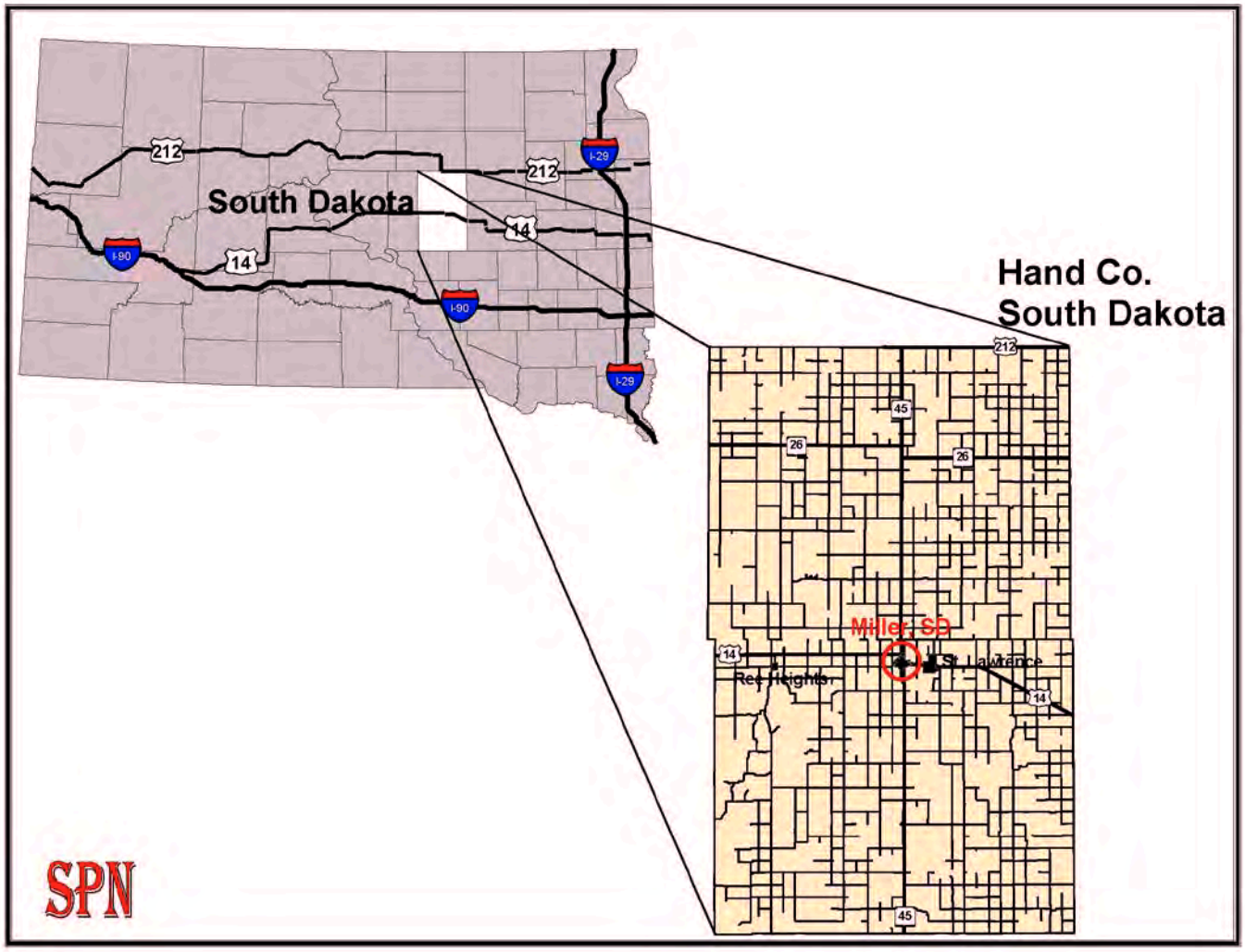


Figure 2.1: Location Map

Data from a 2013 American Community Survey indicates that the community's median household income of $40,192 is lower than South Dakota's median household income of $49,495. At the time the census data was gathered, about 7.1 percent of the families living in the community had incomes at or below the poverty level while 9.1 percent of the families living in South Dakota fell into this category.

2.3 POPULATION PROJECTIONS

The 2010 Census Bureau data indicates a population for Miller of 1,489. Figure 2.2 shows the Census Bureau population data from 1890 to 2010 and presents the projected population for the community through the year 2040. As shown by the historical data,

the population climbed until 1970 and then has declined since. The decline in recent years is typical for rural communities such as Miller. This can be accredited to the size of the typical farming family decreasing. The decline in population has slowed and it is projected that the population should stabilize near the current population.

As with all communities of similar size, there are always efforts to entice new industrial and commercial enterprises into locating in Miller. Even though this possibility exists, it is not anticipated that significant population growth would occur. As a result, the 2010 census population of 1,489 will be utilized in determining the current and projected demands as they relate to the wastewater system.

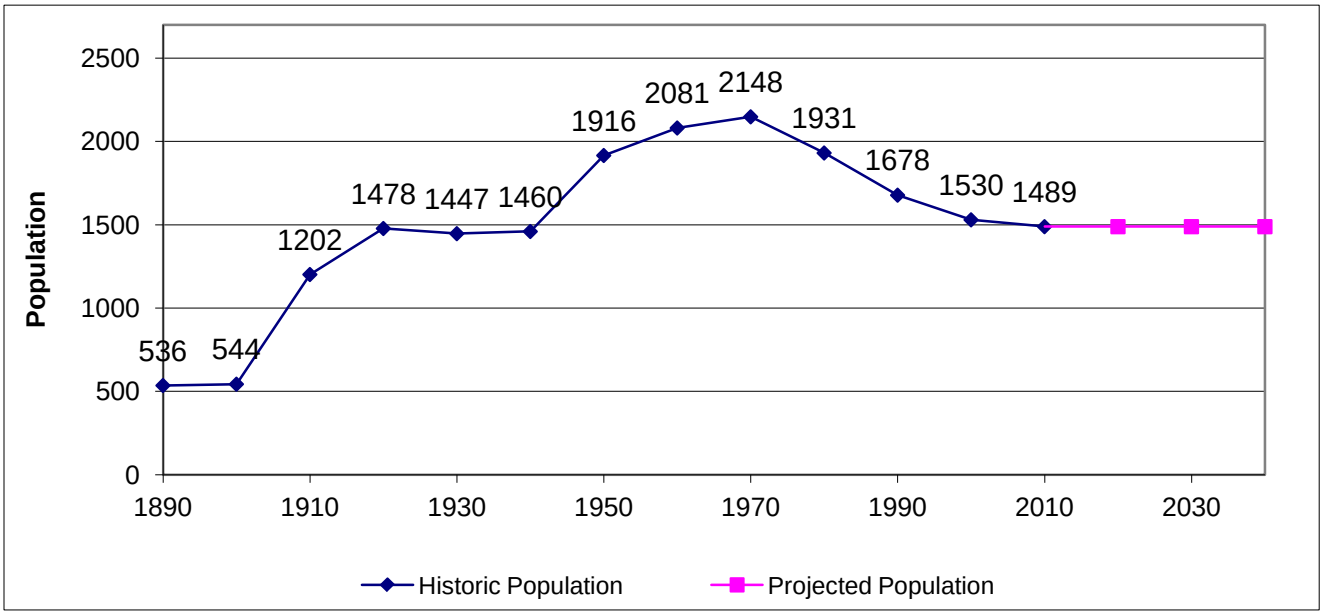


Figure 2.2: Historic and Projected Population

2.4 TOPOGRAPHY / CLIMATE

Hand County lies within the James River Basin where streams flow southwest to the Missouri River. The elevations of the county range from 2,000 feet above sea level in the Ree Hills area to 1,350 feet in the northeast part of the county. The western and southern parts of the county are in the Missouri Coteau and the northeastern and east-central parts are in the James River Lowland.

The area's climate is generally described as a continental climate. Winters are relatively long and cold while summers are fair and warm. Most of the precipitation occurs during the warm period of late spring and early summer. Approximately 75% of the total annual precipitation falls between April and September. Normal precipitation for the area is 18.24 inches annually.

2.5 ENVIRONMENTAL REVIEW INFORMATION

As part of the environmental assessment requirement for the facility planning process, the project sponsor is required to contact various state and federal agencies. Environmental assessment letters will be sent to the following agencies. A copy of the letter requesting comments will be included in Appendix A along with the associated comment letters and future related correspondence.

2.5.1 Historic and Archaeological Sites

Upon completion of an application for funding through one or more of various funding agencies, a letter will be sent to the funding agency describing the proposed project location and construction activities as well as a general description of the existing conditions as found within the project limits. An internet search for historic properties in the area was completed on nps.gov and history.sd.gov. The following locations were identified in Miller and are shown in Figure 2.3:

- Miller Ree Creek Bridge, west edge of Miller
- South Dakota Department of Transportation Bridge #30-257-400, local road over Sand Creek
- Hand County Courthouse and Jail, 415 West First Avenue, Miller
- Mack Jones House, 315 E 3rd Avenue, Miller

Figure 2.3: Historic Sites

2.5.2 Floodplains and Wetlands

The US Fish and Wildlife Service, the US Army Corps of Engineers and the South Dakota Department of Game, Fish and Parks were contacted for input related to the proposed improvements. No floodplains or wetlands in the area are expected to be impacted due to the project. The Federal Emergency Management Agency (FEMA) website was searched for a flood hazard evaluation. A flood hazard map has been prepared for Miller and is shown in Figure 2.4.

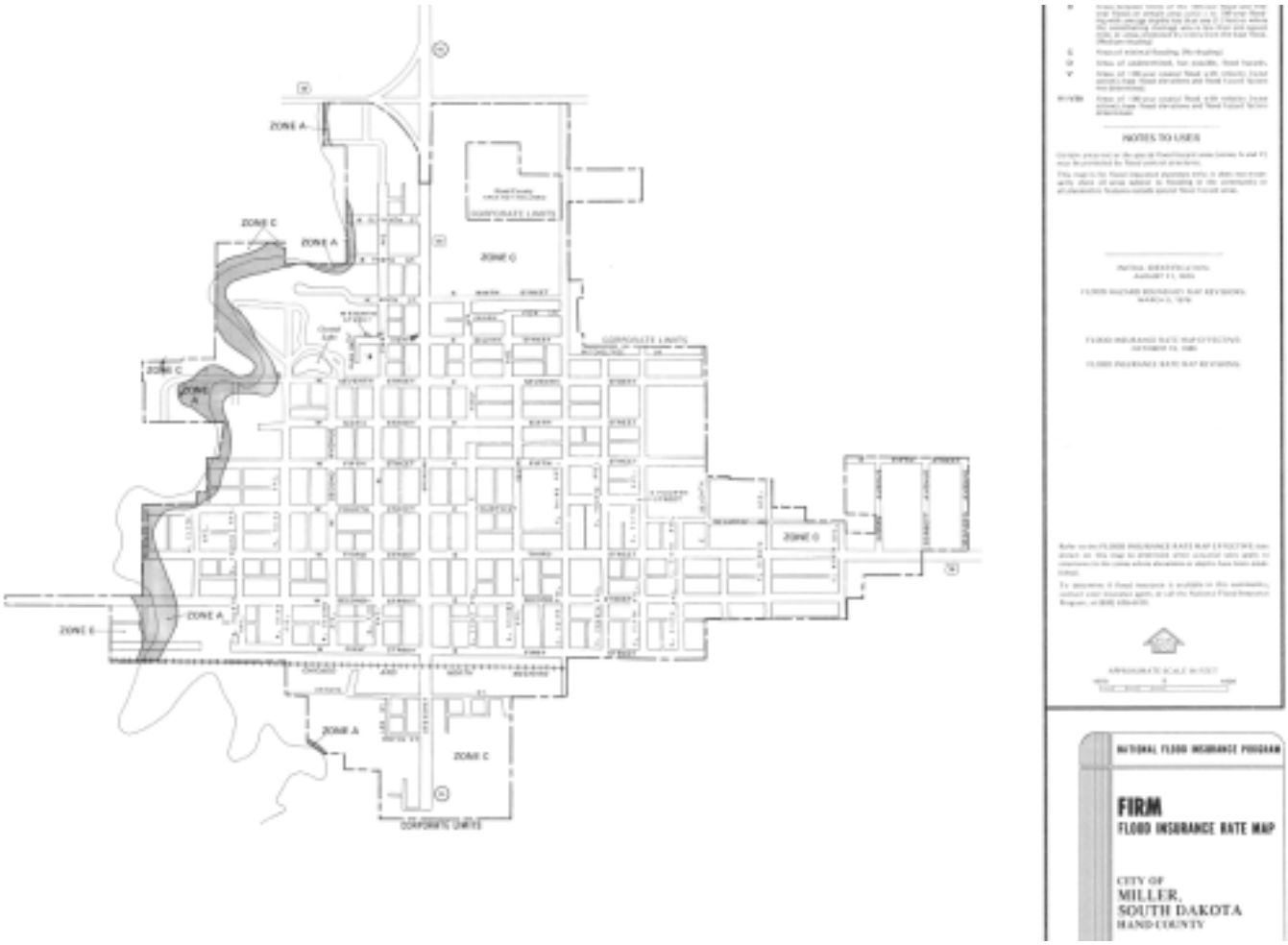


Figure 2.4: Flood Hazard Map from FEMA

The U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on wetlands. Correspondence related to these contacts will be placed in Appendix A upon receipt. A wetland map was created on the US Fish and Wildlife website for Miller and is shown in Figure 2.5. No impact on wetlands is expected due to this project since the work is planned in City rights-of-way or in previously disturbed areas.

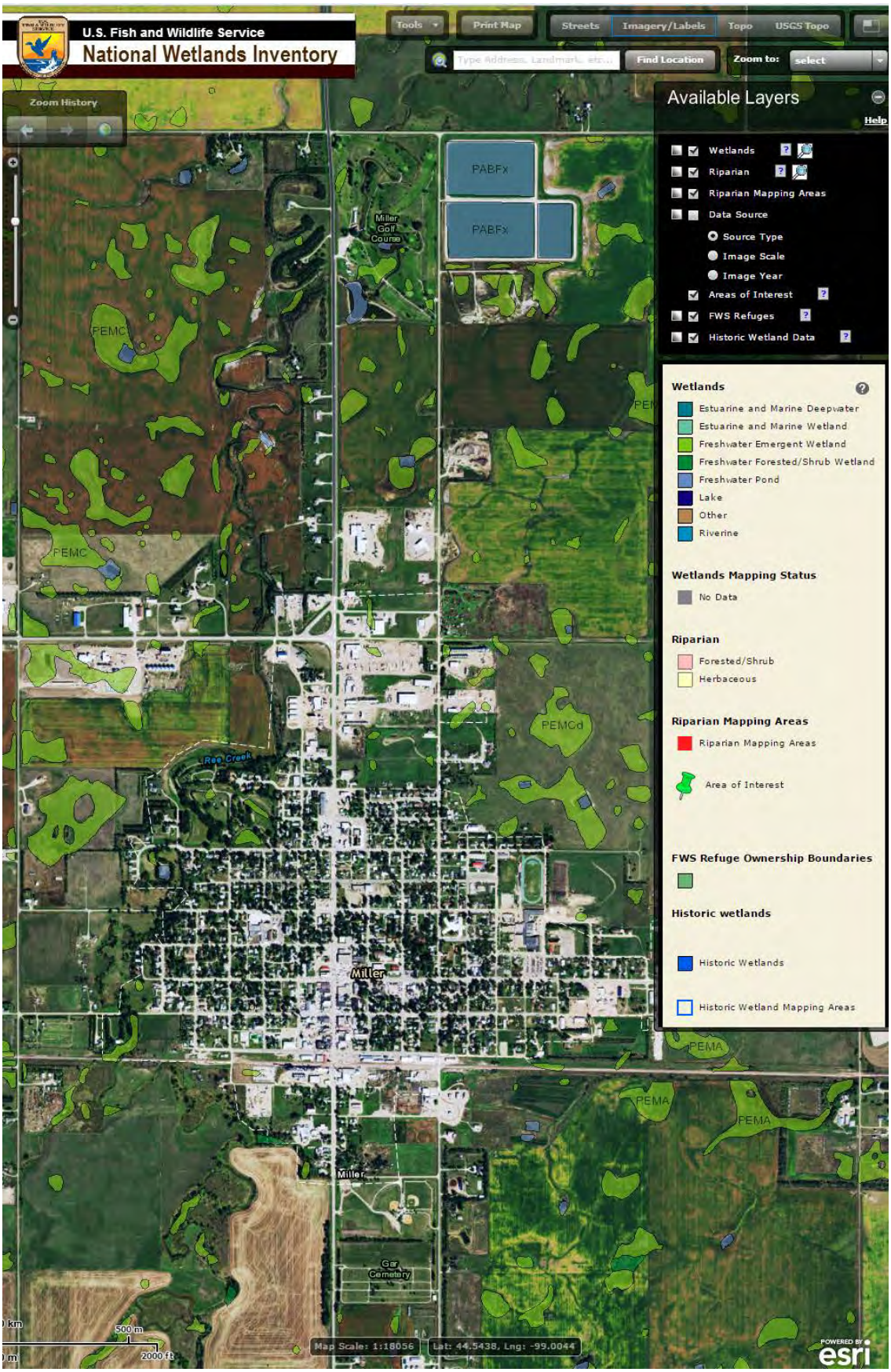


Figure 2.5: Wetland Map

2.5.3 Agricultural Lands

The US Department of Agriculture's State Soils Scientist was contacted for input on the proposed improvements. No significant impact on agricultural lands is expected since the proposed project will take place within the City limits or in previously disturbed areas.

2.5.4 Wild and Scenic Rivers

There are no designated wild and scenic rivers in the area. Therefore, the proposed improvements will have no impact on this resource.

2.5.5 Water Quality and Quantity

The South Dakota Department of Environment and Natural Resources was contacted for input on the proposed improvements. No impact on water quality and quantity is expected due to the project.

2.5.6 Endangered Species and Critical Habitat

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on endangered species and critical habitat which might result from construction of the proposed improvements. No impact on critical endangered species or critical habitat is expected due to this project since the project will take place in City rights-of-way or in previously disturbed areas. According to the U.S. Fish and Wildlife Service website the Whooping Crane and the Topeka Shiner have been identified as endangered species that live in the Miller area.

2.6 Direct and Indirect Impacts

Negative environmental impacts which may be expected during a project of this nature include, but are not necessarily limited to, soil erosion, noise pollution, traffic obstruction, and increased surface runoff due to trench dewatering operations. However, such impacts are temporary and will not significantly affect the environment over the long term.

Positive environmental impacts include enhanced human health and safety and more efficient delivery of municipal water. Such impacts are of long-term value to the residents of Miller and Hand County.

2.7 Mitigation Adverse Impacts

Adverse impacts will be minimized to the greatest extent possible by the implementation of accepted cautionary measures. Temporary and permanent erosion control will be included in construction contracts. Appropriate permits will be secured prior to the discharge of any trench dewatering or storm waters, and protection of public health, safety and welfare will be incorporated into the specifications and contract documents. Additionally, should any permanent adverse impacts result from the project, mitigating measures will be followed to the satisfaction of the appropriate review agency.

3 WASTEWATER SYSTEM ANALYSIS

3.1 SANITARY SEWER

The City of Miller currently provides water and sewer service to approximately 765 connections. The core of the existing collection system was constructed sometime during or prior to 1963 and has been updated and extended to provide service for new development. There are approximately 181 manholes in the system. The existing system is shown in Figure 3.1. The sewer system consists of various sizes of vitrified clay pipe (VCP), polyvinyl chloride (PVC) pipe and cast iron pipe (CIP) as shown below:

Diameter	Type	Total (ft)
4	PVC	200
6	PVC	951
6	VCP	5,568
6	DIP	194
8	PVC	12,873
8	VCP	25,878
10	PVC	1,015
10	VCP	471
12	PVC	1,490
12	VCP	2,038
15	PVC	1,153
15	VCP	687
18	PVC	1,070
18	VCP	14,991
24	VCP	2,537
		71,115

Approximately 73 percent of the sewer system is composed of VCP. The VCP has been found to have numerous widespread deficiencies that range from differential settling, joint offsets, separated joints, collapsed pipe, sags, cracks, root build-up and other issues. The mainline sewer's intersections with the sewer services are relatively consistent throughout the City for poor structural conditions and allowing infiltration.

SANITARY SEWER MAP
CITY OF
MILLER

SCALE: 1" = 800'

LEGEND

- 4" SEWER MAIN
- 6" SEWER MAIN
- 8" SEWER MAIN
- 10" SEWER MAIN
- 12" SEWER MAIN
- 15" SEWER MAIN
- 18" SEWER MAIN
- 24" SEWER MAIN
- MAHNOLE
- CLEANOUT
- PVC PIPE
- RCP Pipe
- VCP Pipe

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

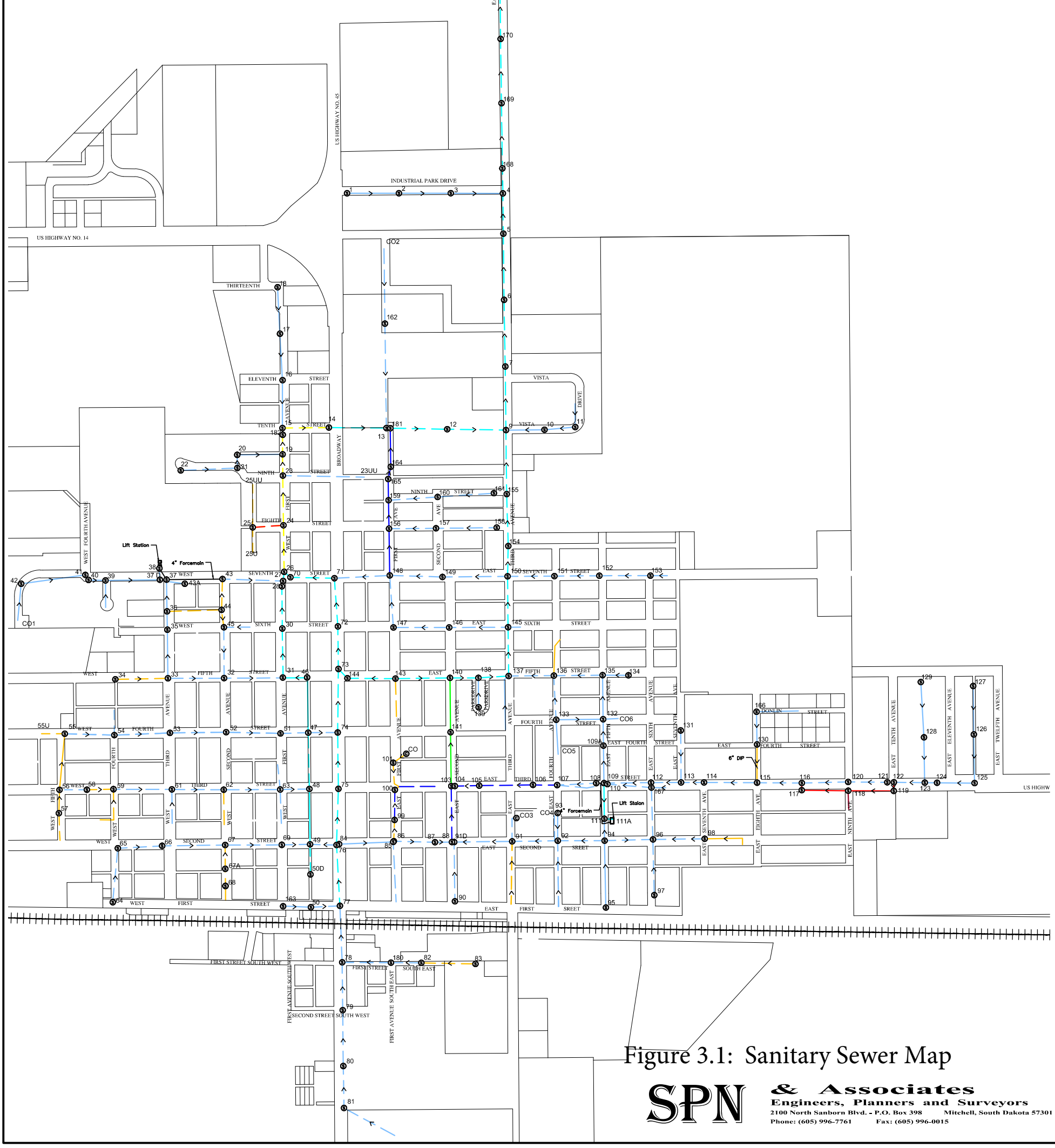


Figure 3.1: Sanitary Sewer Map

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

It is believed that, at one time, the functions of the sanitary and storm sewer systems were combined into one pipe network which required relatively large diameter piping. The larger diameter piping allowed the installation to be completed at a flatter slope which helped deal with the flat terrain over which the sewer had to travel. Many sewer sections have been found to be at slopes which are less than recommended for proper operation and maintenance. The east lift station will most likely need to be replaced to provide for a greater depth that will be required when installing the new sewer lines.

There is approximately 194 feet of eight-inch CIP on the east side of the City that should be replaced since CIP corrodes and is a poor conduit for wastewater. The sanitary sewer includes approximately 182 manholes. The original manholes associated with the VCP sewer are generally in poor condition. Some manholes are constructed of brick, concrete block or a combination of the two. The City has been relining the worst of the manholes during the last few years.

The sanitary sewer flows by gravity to two lift stations. The east lift station is located between East Second Street and East Third Street on Fifth Avenue. The lift station serves approximately 73 sewer connections. This lift station was constructed in 1998 and is a dry well / wet well type that uses duplex two-horsepower pumps. The wastewater is pumped through approximately 420 feet of four-inch PVC force main to a manhole on East Third Street west of Fifth Avenue.

The west lift station is located near the intersection of West Seventh Street and Third Avenue. This lift station serves approximately 37 sewer connections. The west lift station pumps the wastewater through approximately 525 feet of four-inch PVC force main to a manhole located west of the lift station on West Seventh Street and Second Avenue. The west lift station was constructed in 1998 and uses submersible duplex three-horsepower pumps.

3.1.1 TV Inspection Results

In 2014 and 2015, the City hired companies to clean and inspect the sanitary sewer system. Each sewer section that is considered deficient was assigned a priority rating based on the degree of the deficiencies identified. Figure 3.2 shows a map of the sewer system based on the priority rating. Sections with a rating of one require replacement as soon as possible due to a major threat of collapse or line blockage.

SANITARY SEWER MAP
CITY OF
MILLER

SCALE: 1" = 800'

LEGEND

- 4" SEWER MAIN
- 6" SEWER MAIN
- 8" SEWER MAIN
- 10" SEWER MAIN
- 12" SEWER MAIN
- 15" SEWER MAIN
- 18" SEWER MAIN
- 24" SEWER MAIN
- MANHOLE
- CLEANOUT
- PVC PIPE
- VCP PIPE
- PRIORITY 1
- PRIORITY 2
- PRIORITY 3
- POINT REPAIR

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

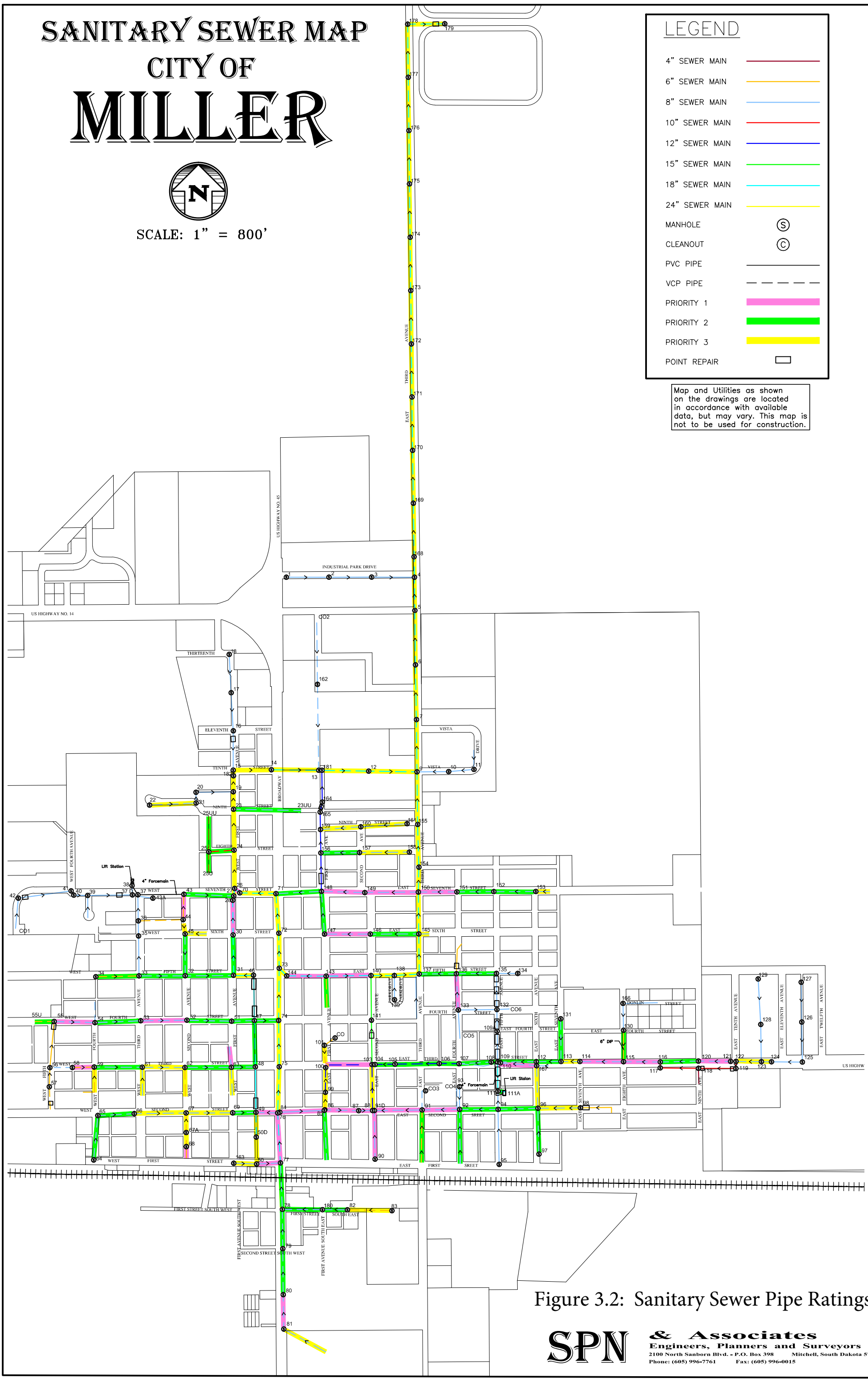


Figure 3.2: Sanitary Sewer Pipe Ratings

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

Sections with a rating of two require replacement because of sags, offset or separated joints, major cracked pipe and other issues. Sections with a priority rating of three are composed of clay pipe in good condition or with minor deficiencies such as light sags, small cracks or other similar issues. Point repairs are also shown in the figure that require a location of pipe to be replaced due to a significant sag, offset, crushed pipe or other issue. Refer to the TV Inspection Evaluation in Appendix B for more details. Table 3.1 provides the length of each size and type of pipe under each category. Example photographs for different priority types are shown in Figures 3.3 and 3.4.

Table 3.1: TV Inspection Summary

Diameter	Type	Total (ft)	Priority 1 (ft)	Priority 2 (ft)	Priority 3 (ft)	Point Repair (ft)	No Action (ft)
4	PVC	200	0	0	0	20	180
6	PVC	951	0	0	0	50	901
6	VCP	5,568	545	2,250	1,831	0	507
6	DIP	194	0	194	0	0	0
8	PVC	12,873	0	0	565	100	11,368
8	VCP	25,878	6,138	12,191	5,322	34	1,031
10	PVC	1,015	0	0	0	50	965
10	VCP	471	221	250	0	0	0
12	PVC	1,490	363	0	0	110	1,017
12	VCP	2,038	393	837	808	0	0
15	PVC	1,153	0	59	0	114	980
15	VCP	687	0	387	300	0	0
18	PVC	1,070	0	0	0	403	454
18	VCP	14,991	1,607	555	11,302	20	470
24	VCP	2,537	0	0	2,537	0	0
		71,115	9,267	16,723	22,665	901	17,873

Top of Pipe Gone on East 2nd Street

Broken Elbow on West Second Avenue

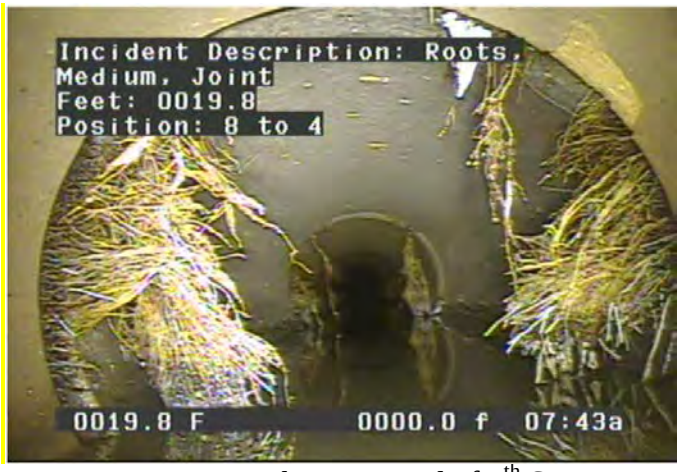
Open Service on West 1st Street

Pipe Broken and Severe Blockage at Lagoon

Pipe Caving in on West 1st Street

Pipe Gone and Water Gushing on Highway 14

Figure 3.3: Example Photographs of Priority 1 Issues



Roots in Joint on the West End of 4th Street

Protruding Service on 1st Avenue

Severe Sag on West 4th Street

Broken Pipe on the West End of 4th Street

Figure 3.4: Example Photographs of Priority 2 Issues

The results of the recent TV Inspection included video of each manhole. Approximately 109 manholes, or 64 percent, require attention. Of these manholes 16, or nine percent, should be completely replaced due to very poor structural condition. The remaining manholes that require attention could be lined to rehabilitate the manholes for continued use. The Figure 3.5 shows examples of manhole conditions.

Manhole 14 - Deteriorated Concrete

Manhole 61 - Rough Bench and Exposed Bar

Manhole 50 - Invert Plugged

Manhole 180 - Loose Block and Brick

Manhole 30 - Brick Construction

Manhole 74 - Bricks Missing

Figure 3.5: Example Photographs of Manhole Issues

3.1.2 Smoke Testing

The sewer system was tested for potential inflow sources in June and July of 2010. The entire City was tested except for an area on Industrial Park Drive and in the alley west of Broadway between Third Street and Fifth Street where manholes were covered with asphalt.

In general, smoke testing the VCP portions of the sewer system gave evidence of being in poor condition. Many of the manholes observed were partially clogged or submerged. Many homes did not show smoke at the roof vents which indicated poor sewer drainage.

Approximately nine abandoned services, three broken or leaking foundations or drain tile, one low manhole that could be collecting water, five broken cleanouts and 13 areas that were believed to have sags or partial blockages were located during testing. A drain tile was found connected directly to the sewer on the southwest corner of West Fourth Avenue and West Third Street. Two storm sewer inlets were found connected to the sanitary sewer on Broadway south of Third Street. Since the time that the smoke testing was completed, the City has fixed some of the minor issues that were identified. The major issues with the storm sewer inlets and drain tile that are connected to the sanitary sewer should be removed.

3.2 WASTEWATER FLOW ANALYSIS

3.2.1 Domestic Flow

In order to estimate the wastewater flow rate, an itemization of the domestic flow along with infiltration and inflow is completed. Usually a city of Miller's size produces roughly 75 gallons per capita per day (gpcpd) of wastewater flow (SD DENR, 1990). However, the high rate of infiltration and inflow collected increases the per capita flows to values higher than what is considered normal.

The domestic component of the wastewater is estimated from historic water use records. The domestic wastewater flow is generally estimated by analyzing the water use for the

months of December, January and February. During these months, 80 percent of the water that is used is assumed to be sent into the wastewater collection system. The winter water usage for 1999 through 2014 was evaluated. The average per capita usage for the winter months is approximately 83.1 gpcpd. The portion of the water that is assumed to enter the sewer system is 80 percent or 66.5 gpcpd. Therefore, using the 2010 population of 1,489, the current domestic wastewater flow rate is estimated to be **99,000 gallons per day (gpd)** (66.5 x 1,489).

3.2.2 Lift Station Flow Records

Lift station pumping records were studied as part of the July 2010 *Facility Plan for the Wastewater Collection and Treatment Systems* to evaluate the variability of the wastewater flow rates. The City of Miller supplied lift station records of the hours of pump operation per day from 2007 through June 2010 for both lift stations. The hour readings for the lift stations were converted to flow and are shown graphically in Figure 3.6. The data supplied and shown in the figure relates to only the portion of the sewer system that contributes flow to the lift stations. Once a trend is established, this data can be used as an indicator of how much inflow and infiltration is entering the collection system.

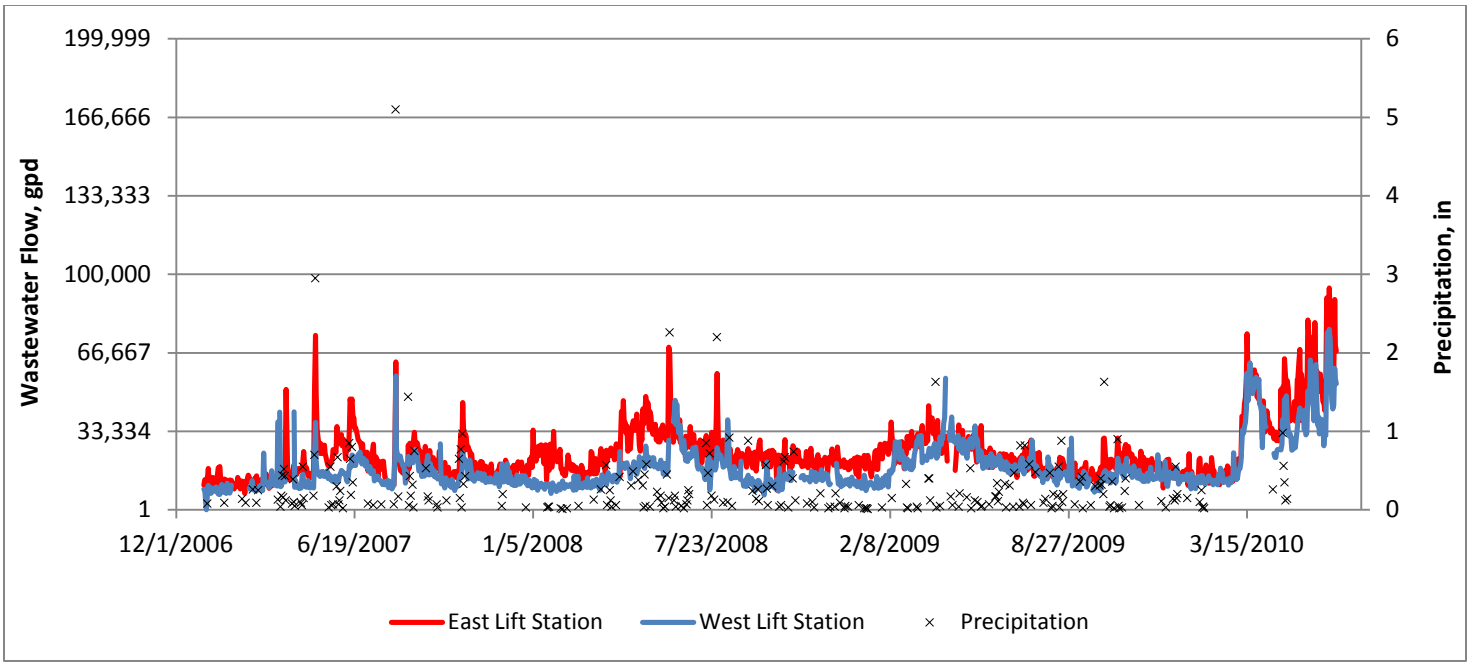


Figure 3.6: Lift Station Flows

Based on available information during the period of record, the two lift stations provided sewer service to approximately 184 people. The estimated domestic wastewater flow production of the service area amounted to approximately 12,600 gallons per day (184 x 68.4). The average wastewater flow rate pumped by the lift stations during the period of record was approximately 40,800 gallons per day which equated to an average per capita wastewater flow of 222 gpcpd. There were 43 days in the period of record during which the daily wastewater flow exceeded 100,000 gpd. The highest daily flow rate was approximately 171,000 gpd for both lift stations. This is an indication that there was significant inflow and infiltration entering the system which was caused by deficiencies in the collection system which allow the collection of infiltration and inflow and sump pump activity.

Although instantaneous wastewater records are not available to determine the intensity of inflow sources during significant rainfall events, it is evident that there is a problem due to daily wastewater flow rates that vary by more than a factor of three.

3.2.3 Infiltration and Inflow Evaluation

Inflow is the flow entering the system from storm sewer connections, perforated manhole covers, improperly abandoned lines, roof drains, basement sump pumps, and other drainage systems. According to representatives of the City, there are many houses that have basement sump pumps which are connected directly into the sanitary sewer system. Inflow also results from individual precipitation events and periods of snow melt. The intensity of the event can play a large role in the degree of impact to the system. In other words, a two-inch rainfall over a couple of hours will result in a larger inflow than a two-inch rainfall over 12 hours.

The inflow component of the total wastewater flow is difficult to estimate because it can occur in short intense flows that are related to precipitation events. For the purpose of this evaluation the wastewater flow is estimated using a combined infiltration and inflow component.

Water that enters the sewer system through cracked pipes, poor joints and the walls of manholes is infiltration. Therefore, infiltration occurs when the groundwater table is at or above the sewer piping. Evidence of infiltration is apparent by the consistently high average day flows in months and years during and following months and years with above-normal precipitation. As would be expected, the above-normal precipitation results in an increased level of the groundwater table. This increased level in the groundwater table then subjects a larger portion of the sewer system to infiltration. This is evident by extended periods of high flows.

The actual infiltration rate in the sewer system is unknown, but can be estimated by evaluating the wastewater flow during overnight hours when domestic wastewater production is minimized. A continuous flow recorder was installed in the outfall pipe upstream from the wastewater treatment ponds during April 3, 2009, through May 20, 2009. The data obtained from the flow recorder was utilized to perform a limited infiltration and inflow study. During the period of measurement there was an average flow of 361,000 gpd or 251 gpm. Figure 3.7 shows a daily summary of the wastewater flow data that was measured and the daily precipitation. The wastewater flow during the period of record began relatively high when ground conditions were wet. The wastewater flow shows a general downward trend as the ground dried out after the spring thaw. The flow rate was significantly higher than the average wastewater flow rate due to wet soil conditions.

The overnight wastewater flows for the period of measurement indicate an average minimum infiltration flow of approximately 175 gpm or 252,000 gpd as shown in the raw data readings in Figure 3.8. The peak flows recorded during the period of measurement exceeded 400 gpm on a few occasions. The data indicates a high of 515 gpm for a short period on April 13, 2009.

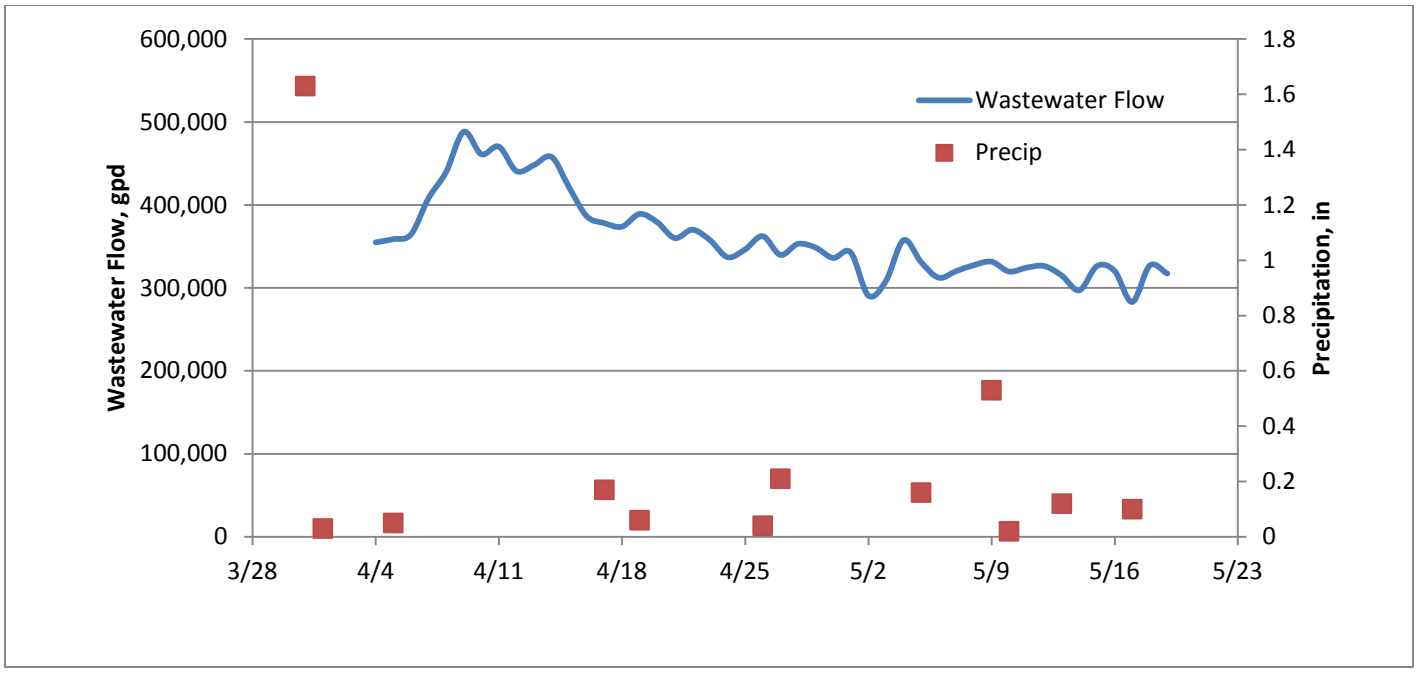


Figure 3.7: Daily Wastewater Flow Measurements

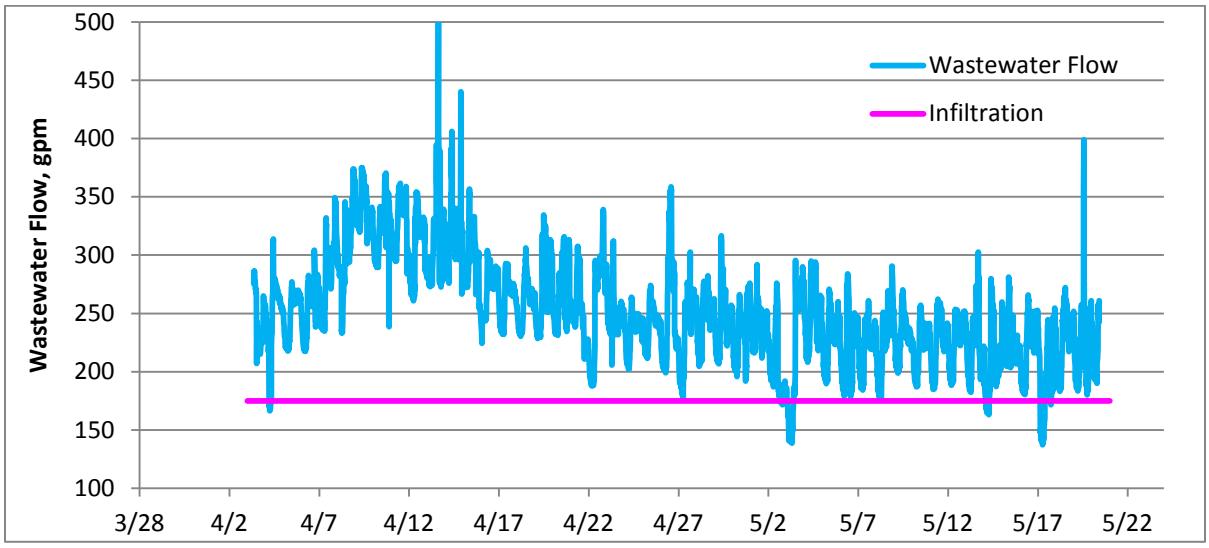


Figure 3.8: Average Minimum Infiltration

The Environmental Protection Agency (EPA) threshold for infiltration rates to be considered excessive is a wastewater flow of 120 gpcpd during dry-weather flows, which can be considered during December, January and February (EPA, 1975). The dry weather flows calculated from the lift station records indicate an average wastewater flow

rate of 158 gpcpd and a peak flow rate of 303 gpcpd during winter periods. Therefore, the wastewater flow during dry weather is considered excessive by the EPA's standards.

The EPA's upper limit for what they consider "normal wastewater flows during wet periods" is 275 gpcpd (EPA, 1975). The wastewater flow meter records indicate a peak flow rate of 485 gpcpd during April 2009. This indicates that wet weather flows can be considered excessive by EPA's standards.

The SD DENR has established a standard maximum acceptable allowance for infiltration. The allowance is 50 gallons per day per inch of diameter per mile of pipe for PVC pipe and 200 gallons per day per inch of diameter per mile of pipe for clay pipe and other types. Based on the total diameter-length in inch-miles times the allowable rates of infiltration, the infiltration rate considered acceptable is shown in Table 3.2.

Table 3.2: Theoretical Infiltration Tabulation

Diameter (in)	Type	Total (ft)	Dimeter*Length in-mi	Rate gpd/in-mi	Infiltration gpd
4	PVC	200	0.15	50	8
6	PVC	951	1.08	50	54
6	VCP	5,568	6.33	200	1,265
6	DIP	194	0.22	200	44
8	PVC	12,873	19.50	50	975
8	VCP	25,878	39.21	200	7,842
10	PVC	1,015	1.92	50	96
10	VCP	471	0.89	200	178
12	PVC	1,490	3.39	50	169
12	VCP	2,038	4.63	200	926
15	PVC	1,153	3.28	50	164
15	VCP	687	1.95	200	390
18	PVC	1,070	3.65	50	182
18	VCP	14,991	51.11	200	10,221
24	VCP	2,537	11.53	200	2,306
4" PVC Sewer Service		11,920	9.03	50	452
6" VCP Sewer Service		53,760	61.09	200	12,218
					37,492

Using this standard and the estimated quantity of inch-miles, the acceptable rate of flow for infiltration is about 26.0 gpm (37,500 gpd/ 1,440 minutes/day). This flow rate is

much lower than the actual estimated daily infiltration and inflow rate which will be discussed later in this report.

The wastewater treatment facility (WWTF) must be sized and analyzed with pertinent design flows in mind. There are times when long periods of wet weather and high water tables can cause infiltration rates to soar. To be certain that the WWTF is not undersized, a design flow larger than the average day flow should be used when there is a system with considerable infiltration and inflow.

3.2.4 Projection of Wastewater Flow and Waste Load

Future flow projection is a matter of judgment rather than a determination of fact, particularly when projecting future growth patterns and population. Unforeseen policies, events and technical changes can occur that affect the actual future population and wastewater flows. The best available information and engineering judgment are combined to define a set of design conditions.

It is not economically feasible to make frequent changes in the capacity of a wastewater collection system or WWTF. Therefore, a system is generally designed for the maximum flow that is expected during the selected design period.

At the time that the evaluation was completed, the actual domestic wastewater flow production during the period of lift station records was estimated to be 12,600 gpd (68.4 gpcpd x 184 people) for both lift station service areas. The average wastewater flow rate pumped by the lift stations was found to be 40,800 gpd. Therefore, the infiltration and inflow component of the wastewater flow was estimated at 28,200 gpd (40,800 gpd - 12,600 gpd) for the lift station service areas. This amounts to a per capita infiltration and inflow rate of 153 gpcpd.

The estimated infiltration and inflow rate for the lift station service areas is scaled up based on the total 2010 population to estimate the total infiltration and inflow collected throughout the City. Based on this method the total design infiltration and inflow rate is

228,000 gpd (1,489 people x 153 gpcpd). This value is the design infiltration and inflow component that will be used throughout this report. The total design average day wastewater flow rate is the sum of the domestic flow and the infiltration and inflow and is calculated to be **327,000 gpd** (228,000 gpd + 99,000 gpd).

The organic loading to the treatment ponds can be measured by the five-day biochemical oxygen demand (BOD_5). The DENR suggests that typical organic waste that is collected by a community ranges from 0.17 to 0.22 pounds of BOD_5 per person per day. For the purpose of this evaluation, the organic waste load that is collected by the sanitary sewer is calculated using an average waste production of 0.20 pounds of BOD_5 per person per day. The average BOD_5 production for the out-of-town students is 0.085 pounds per day per student. The BOD_5 production is also increased for the hospital, two convenience stores, five restaurants and a car wash.

A summary of the wastewater flows and organic loadings that will be used for the evaluation and design of the wastewater treatment alternatives is presented in Table 3.3.

Table 3.3: Wastewater Facility Design Data

Population	1489
BOD_5 per Capita (lbs)	0.20
Out-of-Town Students	200
BOD_5 per Out-of-Town Student (lbs per student)	0.085
BOD_5 from Commercial Sites	87.0
Total BOD_5 (lbs)	402
Hydraulic Loading, gpcpd	66.5
Total Domestic Hydraulic Loading	99,000
Design Daily Infiltration and Inflow	228,000
Total Design Wastewater Flow Rate	327,000

3.2.5 Collection System Capacity Evaluation

In order to determine and evaluate the capacity of the City's collection system, a spreadsheet was created that calculates the anticipated hydraulic loading to each section of sewer pipe. This spreadsheet and associated evaluation was completed as part of the

July 2010 *Facility Plan for the Wastewater Collection and Treatment Systems*. A description of this evaluation is provided below.

The service connections used in the calculations were estimated based on the location of the pipe section. Using the 2000 population, a ratio of 1.82 people per connection was calculated to estimate the number of residents on a particular section of pipe. The total infiltration and inflow was prorated to each pipe based on the pipe's percentage of the total inch of diameter-miles.

The peak domestic component of the wastewater flow as recommended by the SD DENR was assumed to be four times the average flow. Additionally, the peak infiltration and inflow component of the wastewater flow was assumed to be four times the average flow rate which was also recommended by the SD DENR. The Manning's Equation was used to establish the maximum capacity for each of the pipe segments. The capacity of the pipe was compared to the peak wastewater flow that is anticipated for each pipe section. All pipe segments were found to have adequate capacity under the conditions used in the evaluation. However, the evaluation uses pipe friction factors that do not take into account potential blockages that could be caused by sags, offset joints, tree roots, protruding services and other structural deficiencies. The actual capacity of the wastewater collection system could potentially be much lower than that indicated if there are considerable pipe deficiencies, lesser pipe slopes or pipe blockages.

3.3 LIFT STATIONS

The City has hired Dakota Pump and Control from Watertown, South Dakota, to provide the preventative maintenance on the lift station pumps and related equipment. A portable generator is available to operate the lift stations during a power outage. The City rotates the generator between the two lift stations. The City operators desire a supervisory control and data acquisition (SCADA) system for the lift stations to provide better control and supervision on a remote basis. This system would consist of a set of sensors and controls wired to a radio system that would be interfaced with the City's existing SCADA system.

3.3.1 East Lift Station

The east lift station is located between East Second Street and East Third Street on Fifth Avenue. This lift station was constructed in 1998 and is a dry well / wet well type that uses duplex three-horsepower pumps. The pumps are submersible-type pumps in a dry pit configuration. Photographs of the lift station are shown in Figures 3.9 through 3.11. The lift station structure consists of a six-foot diameter concrete wet well and a six-foot by seven-foot concrete dry well. The concrete surface at the top of the wet well is in poor condition as shown in Figure 3.10. The trash screen in the wet well is in good condition and is cleaned periodically by the City. The wastewater is pumped through approximately 420 feet of four-inch PVC force main to a manhole on East Third Street west of Fifth Avenue.

The pumps, fittings, valves and piping in the lift station have rust that is showing over their surfaces. The rust is not a serious concern and is likely to occur due to the very humid conditions located in the station. The station is not completely water tight; therefore, infiltration occurs which is pumped out by the sump pump. There is no alarm indicator for a flood water level in the station that could occur if the sump pump fails.

A pump calibration, or flow rate measurement, was completed on July 2, 2010. Based on the expected pressure conditions and the rated pump capacity a flow rate of 175 gpm is expected. However, the pump calibration indicated that both pumps have a capacity of 130 gpm each. The low flow rate could mean that the force main is partially plugged or the pumps are worn or malfunctioning.

Figure 3.9: Top of East Lift Station

Figure 3.10: Poor Concrete in Wet Well

Figure 3.11: Interior View of East Lift Station Dry Pit

Pump manufacturers generally recommend that a submersible pump cycle on and off no more frequent than approximately every 6.7 minutes for a three-horsepower motor. Pump run time is also recommended to be a minimum of 1.3 minutes each cycle for a three-horsepower motor. High pump cycling frequencies and low run time can tend to reduce the life of a motor. Pump cycling at the east lift station is found to be between 6.5 to 76 minutes for minimum to peak flows. The minimum pump run time was found to be approximately 3.4 minutes. Based on this information, the pump cycling frequency exceeds the maximum recommended frequency by a small margin at the estimated peak flow. This indicates that the wet well is slightly undersized. However, it is not practical

to size a wet well for the peak wastewater flow when there is a large degree of flow variation due to infiltration and inflow. Since the peak wastewater flows are not expected under normal weather conditions, the wet well sizing is considered to be acceptable.

Based on the pump hour readings supplied by the City, the lift station pumps seem to be adequately sized. The velocity in the force main when pumping at 130 gpm is 3.3 feet per second. This flow rate is within the acceptable range of two to five feet per second.

3.3.2 West Lift Station

The west lift station is located on West Second Street and Second Avenue. Photographs of the lift station are shown in Figures 3.12 and 3.13. The west lift station pumps the wastewater through approximately 525 feet of four-inch PVC force main to a manhole located east of the lift station on West Seventh Street and Second Avenue. The west lift station was constructed in 1998 and uses submersible duplex two-horsepower pumps. The lift station consists of a five-foot by seven-foot concrete wet well and a five-foot by six-foot concrete valve vault. The trash screen in the wet well is in good condition and is cleaned periodically by the City. The concrete surfaces are in good condition.

A pump calibration, or flow rate measurement, was completed on July 2, 2010. Based on the expected pressure conditions and the rated pump capacity a flow rate of 80 gpm is expected. However, the pump calibration indicated that the pumps had capacities of 67 gpm and 54 gpm, respectively, for the east and west pumps. The low flow rate could mean that the force main is partially plugged or the pumps are worn or malfunctioning.

Figure 3.12: Top of the West Lift Station

Figure 3.13: Interior View of the West Lift Station

Pump manufacturers generally recommend that a submersible pump cycle on and off no more frequent than approximately every five minutes for a two-horsepower motor. Pump run time is also recommended to be a minimum of 1.3 minutes each cycle for a two-horsepower motor. High pump cycling frequencies and low run time can tend to reduce the life of a motor. Pump cycling at the west lift station is found to be between 3.8 to 59 minutes for minimum to peak flows. The minimum pump run time was found to be approximately 3.9 minutes. Based on this information, the pump cycling frequency is slightly more frequent that what is recommended at the estimated peak flow which indicates that the wet well is undersized. However, it is not practical to size a wet well for the peak wastewater flow when there is a large degree of flow variation due to infiltration and inflow. Since the peak wastewater flows are not expected under normal weather conditions, the wet well sizing is considered to be acceptable.

Based on the pump hour readings supplied by the City, the lift station pumps seem to be inadequately sized. There are many days on record where the pumps are operating over 20 hours per day. The velocity in the force main when pumping at 54 gpm is 1.4 feet per second. This flow rate is below the acceptable range of two to five feet per second which can cause solid material to settle out of suspension and partially plug the force main.

3.4 WASTEWATER TREATMENT

Miller's wastewater treatment facility (WWTF) was originally built in 1964 and is located one mile north of the City. A third treatment cell was added in 1982. The layout and location of the WWTF is shown in Figure 3.14. The treatment facility operates under Surface Water Discharge (SWD) Permit #SD0022659. A copy of the permit and current standards are contained in Appendix C. At the time this report was written, the permit was being renewed and was expected to include ammonia limitations among other operational requirements. Preliminary discussions with the DENR indicate the ammonia limitations will not be strict. However, the additional limitations on a system that is currently struggling to meet current limitations will most likely add to the exceedances of the permit limits.

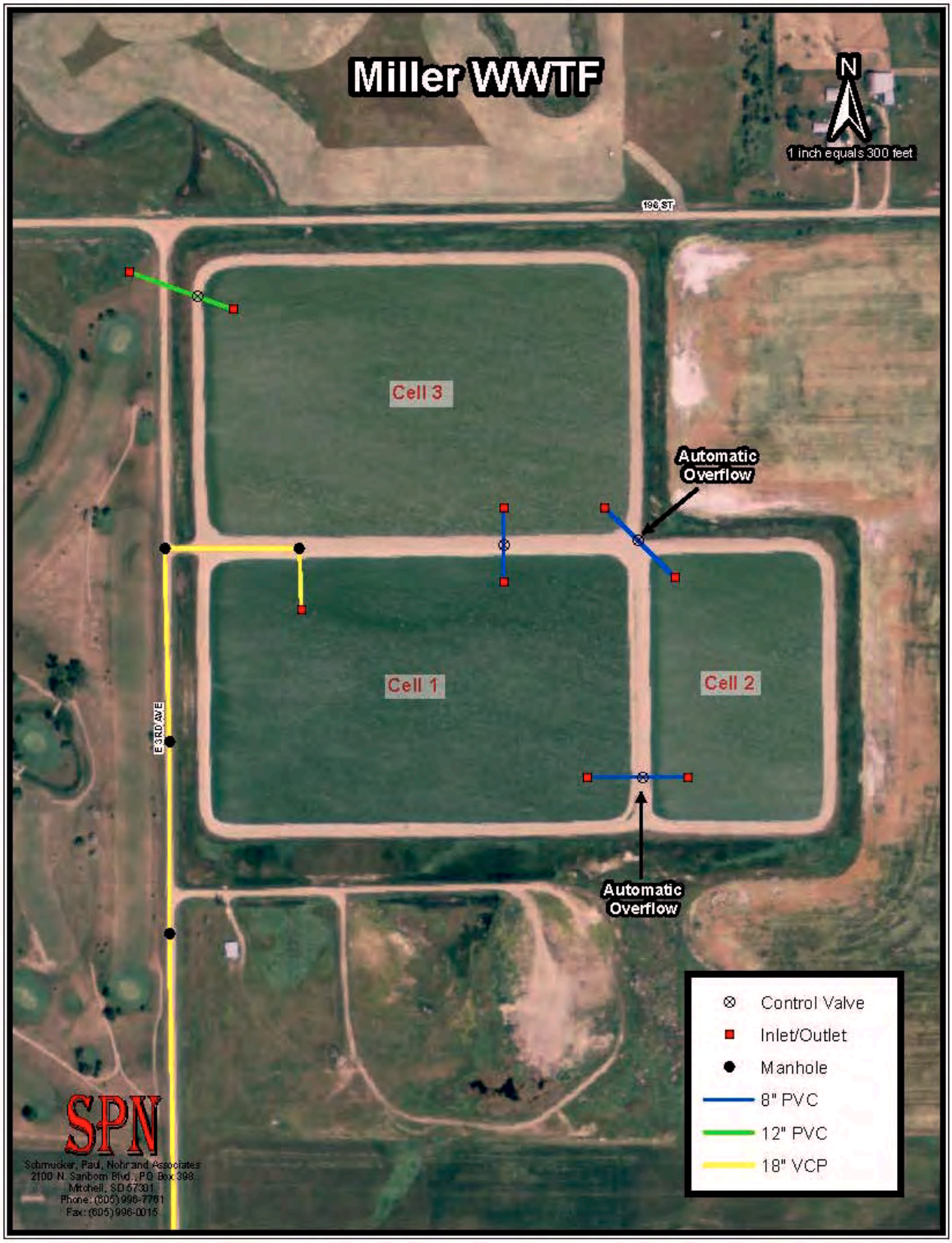


Figure 3.14: Wastewater Treatment Facility

Currently, Cell One has an approximate high water surface area of 18.19 acres and an effective storage depth of 3.6 feet. The effective storage depth is measured from two feet above the floor, which is the residual depth, to the bottom of the freeboard which is three feet below the top of the dike. Based on available information, filling Cell One to the full level, which would be three feet below the top of the dike, would result in a surcharge of the influent line of approximately six inches higher than the bottom of the pipe. Based on available information, this amounts to approximately 450 feet of wastewater backed up into the influent line. For this reason, the effective storage depth of three feet and a high water surface area of 18.0 acres will be used. Cell Two has a high water surface area of 7.41 acres and an effective storage depth of three feet. Cell Three has a high water surface area of 17.7 acres and an effective storage depth of 3.2 feet. The inside of the existing dikes are clad with riprap as shown in Figure 3.15 which indicates a typical view of the dikes and treatment cells.

The concrete surfaces and casting that compose the manhole where the wastewater enters Cell One are in poor condition as shown in Figure 3.16. The wastewater between cells flows automatically by the use of automatic overflow piping between the cells. The operator should manually control the movement of wastewater between the cells by using the valves located between the cells. The discharge from Cell Three is controlled by a buried gate valve.

In relation to the other cells, Cell Two is much smaller which makes it difficult to operate the WWTF as recommended by the DENR. When discharging from the WWTF, the desired method is to lower Cell Three, fill Cell Three by lowering Cell Two, then fill Cell Two by lowering Cell One. The relatively small Cell Two is not able to fill Cell Three which requires the operator to drain all cells at once or fill and empty Cell Two multiple times to fill Cell Three.

Figure 3.15: View of Cell Three (Left) and Cell One (Right)

Figure 3.16: Manhole at Cell One Inlet

The existing primary treatment pond, because of its age, most likely has a significant amount of sludge that has accumulated. City representatives have indicated that sludge has been a problem in the past and has been partially removed in the vicinity of the pond inlet. It is suspected that the sludge has significantly built up again. The sludge is generated over time from the biological activities that occur in the treatment of the waste. This sludge should be removed to restore the wastewater storage volume. In addition, the build-up of sludge around the pond inlet can impede the flow into the pond which may eventually plug the pipe. The City plans to remove the sludge, as necessary, when needed.

The wastewater discharged from the WWTF flows through a ditch that eventually empties into Ree Creek which is classified with the following beneficial uses:

- Fish and wildlife propagation, recreation and stock watering waters
- Irrigation waters

On August 6, 2014, the South Dakota DENR conducted a surface water discharge (SWD) compliance inspection. A copy of the SWD Compliance Inspection Report is presented in Appendix D. The main comment by the DENR was that the City must increase its efforts to consistently meet effluent limits and other provisions of the Miller SWD permit. A summary of the discharge monitoring records from 2006 through 2014 is shown in Table 3.4. The records show that the minimum pH, maximum pH, BOD and TSS were exceeded. According to available records, from 2003 through 2005 there were an additional five measurements of total suspended solids (TSS) that exceeded the permit limit.

The organic waste loading was calculated previously to be 402 pounds per day. The SD DENR Design Criteria states that the maximum loading to a primary pond should be 30 pounds of BOD_5 per acre of pond per day. Given that the area of the primary pond is 18.0 acres, the current BOD_5 loading is 22.3 pounds per acre per day and is below the maximum recommended limit.

Table 3.4: Discharge Monitoring Records

Date	Daily Max Temp °C	pH	Max 7-Day Avg mg/l BOD	Max 7-Day Avg mg/l TSS
Limit		**6 - 9**	**45**	**165**
3/27/2006	6.5	8.25	17	45
3/28/2006	9.7	8.36	18	43
3/29/2006	9.9	8.30	19	55
11/13/2006	7.1	6.18	22	60
11/14/2006	6.3	5.99	22	61
11/15/2006	4.9	6.02	25	61
11/20/2006		5.87	19	48
4/17/2007	12.2	6.00	18	48
4/17/2007	14.3	7.30	20	54
4/18/2007	15.6	7.34	23	62
4/23/2007	16.8	8.35	22	108
9/10/2007	19.3	7.04	28	86
9/11/2007	18.9	6.56	26	80
9/12/2007	21.5	8.10	27	90
9/17/2007	20.2	8.07	27	98
9/24/2007	20.3	7.02	37	116
4/30/2008	13	6.11	22	124
10/31/2008	14.4	6.49	24	41
4/30/2009	14.8	9.32	35	132
10/31/2009	12.7	6.68	35	128
3/31/2010	10.1	7.00	35	14
5/31/2012	21.2	9.36	62	160
5/31/2013	21.7	9.43	18.67	67.33
6/30/2013	27.7	9.34	53	123
12/31/2013	14	8.9	24	40
5/31/2014	29.4	9.93	85	140

3.4.1 Hydraulic Capacity

To aid in evaluating the capacity of the existing pond, a water balance is compiled and is presented in Table 3.5. The water balance is created for evaluative purposes only. The actual operating conditions of the WWTF could vary greatly due to changes in evaporation, precipitation, discharges, actual seepage and other things that would affect the condition of the WWTF.

Table 3.5: WWTF Hydraulic Capacity

Population	1489
Domestic Wastewater Flow, gpcpd	66.5
Domestic Wastewater Flow, gpd	99,019
Design Infiltration and Inflow, gpd	228,000
Total Hydraulic Loading, gpd	327,019
Total WWTF Volume Required, gal	58,863,330
Pond Capacity, gal	45,563,730
Capacity Shortage, gal	13,299,600
Capacity Shortage, gpd	73,887

The hydraulic capacity calculations are based on the design wastewater flow rate estimated above. Because of evaporation loss during the summer, the most critical period for wastewater storage occurs during the winter period. The seepage rate is difficult to determine because of the many factors that influence its intensity. During the periods when there is a high water table in the vicinity of the WWTF very little, if any, seepage would occur. Therefore, for the purpose of this report a seepage rate of zero is assumed.

The hydraulic capacity calculations indicate that there is insufficient capacity to store and dispose of the wastewater. Years with high precipitation which causes infiltration and inflow rates to rise are likely to cause the City's WWTF to become hydraulically overloaded to a greater extent.

Based on the data shown in Table 3.5, if 73,900 gpd or 32 percent of the estimated infiltration and inflow was eliminated, the existing WWTF would have adequate capacity. Improvement alternatives are included later in this report to address the shortage in wastewater storage and to consider sewer improvements to reduce the infiltration and inflow.

3.5 FUTURE CONDITIONS

Information related to the project need and planning area is found in Section 2 of this report. Specific information on population projections is found in Section 2.2. The population of Miller is considered to be stable with minimal growth expected. As a result, the current estimated wastewater flow and waste loading are used for future conditions.

Land use is not expected to change significantly in the immediate vicinity of the City. There is some land available for future development on the east and north sides of the City. Based on the past growth of the community, it is viewed as sufficient to meet the community's needs.

Due to the importance of conserving water, money and energy, various means for reducing wastewater flows and water usage are recommended. First, by using faucet aerators, reduced flush toilets and limited flow showerheads, wastewater flow and water use can be reduced. Second, sump pumps and drain tile that empty into the sanitary sewer system should be modified to discharge outside the sanitary sewer system.

4 WASTEWATER SYSTEM ALTERNATIVES

The alternatives developed for the City of Miller were composed to demonstrate some options available to fix the identified deficiencies in the system. There are no areas within the city limits that are not served by municipal sanitary sewer. Therefore, no restoration of septic systems is necessary. All sewage collection is by conventional methods. The current collection system consists of gravity flow and force main pipes that transport sewage to the treatment system. No alternative collection systems were considered in this report. The City of Miller has some commercial activities but no federal facilities.

4.1 CAUTIONARY NOTES CONCERNING COST ESTIMATES

The opinions of probable cost provided with the following alternatives reflect the anticipated costs for administration, engineering design, construction, contingencies, construction observation, and other costs related to completion of the project. The costs as presented are based on an analysis and comparison of projects of similar size and scope. The actual construction and project costs will vary on an individual project basis. The actual bid cost will reflect the bidder's evaluation of construction problems, weather, soils and difficulty of work. Thus, the engineer cannot be held responsible for the accuracy of the estimates made in this report, as the engineer has no control over the contractors' bid costs.

Changes in materials, equipment and energy costs, as well as availability of other construction work at the time of the bid opening, could substantially influence actual project cost. Construction costs will also vary somewhat based on the quantity of items necessary to construct the project. The quantities and costs contained in this report are preliminary estimates based on our best judgment without field measurements. Final quantities and opinions of probable cost and final construction costs must be based upon final design.

Different funding sources have different requirements for some non-construction items. Therefore, actual costs of non-construction items should be considered tentative at this

time and subject to later modifications and adjustments as current situations and funding sources dictate. Further, inasmuch as the period of construction cannot be accurately predicted, the costs as presented in this report have not been adjusted to reflect projected inflation factors. Therefore, it is important that the estimate of costs as presented be reviewed and updated periodically to reflect construction cost trends.

4.2 EQUIVALENT UNIFORM ANNUAL COST

The equivalent uniform annual cost (EUAC) not only takes the capital costs into account when evaluating the options but also looks at the salvage value of the components and the expected annual operation and maintenance costs. The result is a comparison of the alternatives on an overall basis throughout a design life of 20 years. The EUAC is eliminated from consideration since the proposed improvements presented subsequently offer one viable alternative for each set of improvements or would only be a factor of the capital cost, as is the case of sanitary sewer improvements. The lift station options presented would also only vary by capital cost factors since the operation and maintenance of both options are very similar.

4.3 PROPOSED SANITARY SEWER IMPROVEMENTS

A general recommendation is the enforcement of a sewer use ordinance that prevents connections of sump pumps and other inflow sources from being contributed to the collection system. Otherwise, the reduction of the infiltration that occurs from the results of installing new pipe could be unnoticed compared to that occurring from these sources. Based on conversations with City representatives, there are many homes with sump pumps that are connected directly to the sanitary sewer. The difficulty arises in locating these sump pumps and obtaining homeowners' cooperation in changing the discharge points to a location other than the sewer system. Nevertheless, the City should attempt to work with homeowners to eliminate sump pumps from discharging to the wastewater collection system.

The operating characteristics and deficiencies of the wastewater collection system are discussed in detail in Section 3 of this report. The following is a summary of the deficiencies of Miller's sanitary sewer.

- Approximately 73 percent of the sewer system is composed of VCP which has varying degrees of structural deficiencies, some of which are very serious.
- Many manholes are in very poor structural condition.
- The smoke testing revealed that there is a general problem with clogged or submerged sewer sections throughout the City.
- Two storm sewer inlets were found connected to the sanitary sewer on Broadway south of Third Street.
- Inflow and infiltration is considered excessive based on wastewater flow monitoring and lift station records.

4.3.1 Sanitary Sewer Option 1: Do Nothing

The first option that was considered is the "do nothing" option. This option will not repair the structural deficiencies identified in the collection system. The excessive infiltration and inflow rates in the collection system will continue to occur. Because the problems with the collection system will not be fixed, this option is not recommended.

4.3.2 Sanitary Sewer Option 2: Priority 1 and 2 Sanitary Sewer

Figure 4.1 is a map of the sewer system showing the proposed pipe according to the priority rating. Sections with a rating of one require replacement as soon as possible due to a major threat of collapse or line blockage. Sections with a rating of two require replacement because of sags, offset or separated joints, major cracked pipe and other issues. Point repairs are also shown in the figure that require a location of pipe to be replaced due to a significant sag, offset, crushed pipe or other issue. There are several sections of sewer added to the scope of work in order to eliminate small gaps in replacement work.

The existing piping shown in Figure 4.1 will be replaced with eight-, 10 - and 12-inch pipe as part of this option. The sewer services would be replaced within the rights-of-way with four-inch pipe.

SANITARY SEWER MAP
CITY OF
MILLER

SCALE: 1" = 800'

LEGEND

- 4" SEWER MAIN
- 6" SEWER MAIN
- 8" SEWER MAIN
- 10" SEWER MAIN
- 12" SEWER MAIN
- 15" SEWER MAIN
- 18" SEWER MAIN
- 24" SEWER MAIN
- MANHOLE
- CLEANOUT
- PVC PIPE
- VCP PIPE
- PRIORITY 1
- PRIORITY 2
- ADDITIONAL
- NEW FORCEMAIN ROUTE
- POINT REPAIR
- CIPP
- REPLACE DUE TO STORM SEWER IMPROVEMENTS
- ADD OR REPLACE MANHOLE
- LINE MANHOLE

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

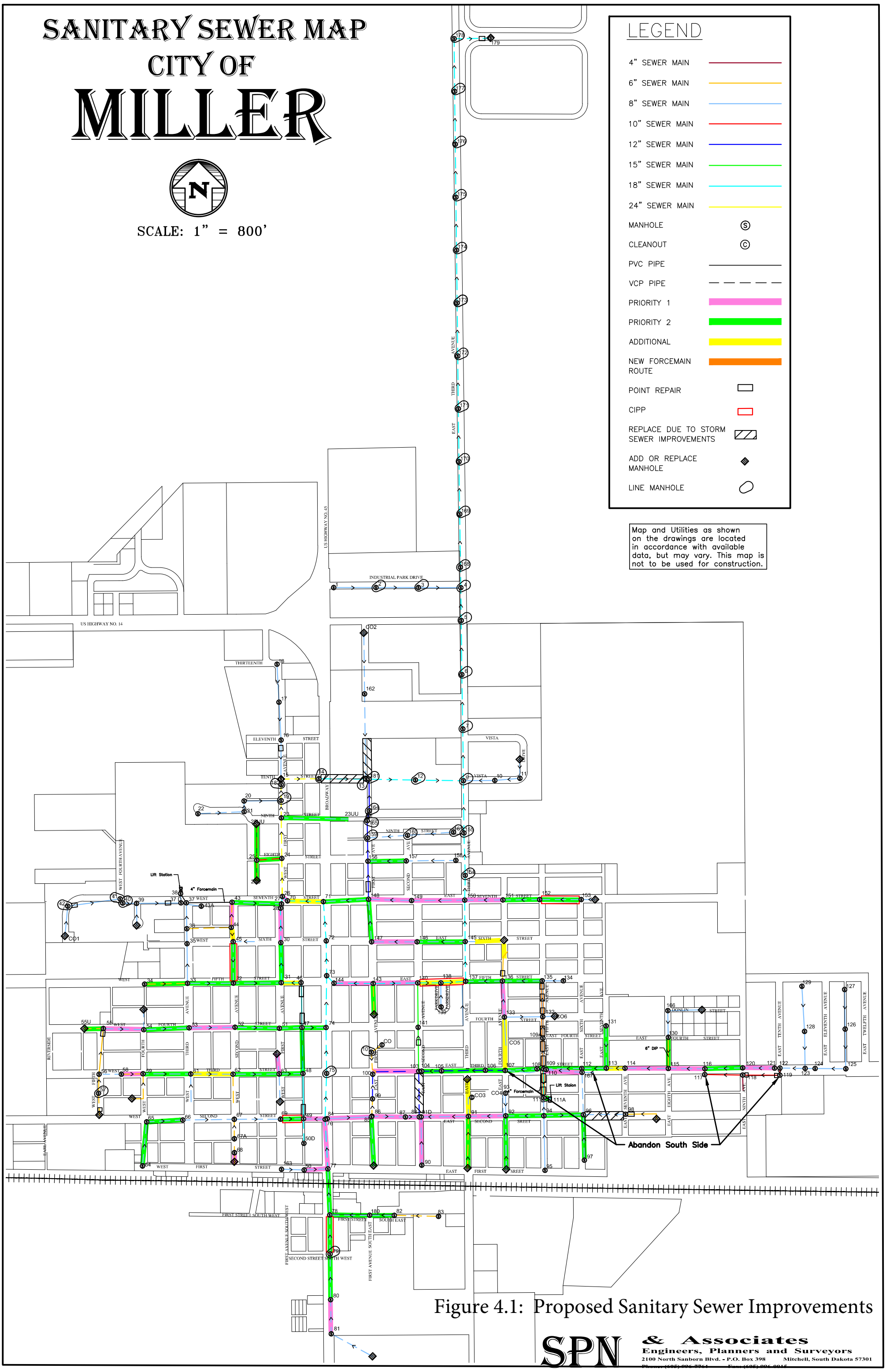


Figure 4.1: Proposed Sanitary Sewer Improvements

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

The option of pipe lining or cast-in-place pipe (CIPP) for the method of repairing the sewer system will be applicable for some sections. The use of the CIPP liner allows a trenchless method of rehabilitating the sanitary sewer main and saves the cost of rebuilding the street surface. CIPP liner will not solve any problems with sags, flattened pipe, poorly aligned pipe or improperly sized pipe. As a result, these locations must be repaired with the use of open trenches and associated street repairs. This is the case with most of the pipe sections. Typically, the CIPP method can be practical when asphalt or concrete streets are involved because of the high cost associated with street surfacing. CIPP becomes less cost effective in pipe sections with numerous service connections where trenches must be dug to connect the service pipe. During the design phase the TV inspections and other information will be used to verify the most cost effective process to make the sewer repairs for the entire system. The preliminary review of available data indicates that there are approximately five sections of existing piping that would be likely candidates for lining.

The manholes adjacent to pipe which will be replaced will also be replaced. The rehabilitation or lining of manholes is a potential method for repairing the manholes which are not next to the proposed construction area. An evaluation of each manhole was completed to determine exactly which manholes should be replaced and/or rehabilitated. Figure 4.1 shows manholes that will be added where necessary, replaced due to failing structures and lined to allow the continued use of the existing manhole. There are approximately 37 manholes that require lining. One manhole should be replaced and is not adjacent to the proposed replacement of the sanitary sewer piping.

The improvements proposed would result in a reduction of the infiltration due to the newly installed pipe. The proposed improvements amount to approximately 41 percent of the total sewer system length. It is likely that a significant reduction in the infiltration and inflow will occur as a result of this project.

Because of the size of this project, Option 2 is split into three phases. The smaller parts of the overall project will make the project more manageable in terms of both funding

and implementation. It is very difficult to split the project into parts for implementation because the major deficiencies are basically widespread throughout the City. Note that upon completion of Phase 1, Phase 2 is immediately recommended with Phase 3 to follow. Effort was made to split Option 2 into somewhat equal parts based on cost as much as practical.

4.3.2.1 Sanitary Sewer Phase 1

The goal of the first phase of work is to implement the lowest elevation of the sewer main in the area of the new east lift station. Refer to Figure 4.2 for a map showing the phases of implementation of Option 2. The estimated costs associated with the Phase 1 improvements are presented in Table 4.1.

4.3.2.2 Sanitary Sewer Phase 2

The second phase of work involves the next higher elevation of the sewer in the area of the new east lift station. The manholes which require lining or replacement will be completed in Phase 2. The estimated costs associated with the Phase 2 improvements are presented in Table 4.2.

4.3.2.3 Sanitary Sewer Phase 3

The third phase of work includes the west side of the City and remaining sanitary sewer that must be replaced after Phases 1 and 2. The sewer main which is to be lined will be completed in Phase 3. The estimated costs associated with the Phase 3 improvements are presented in Table 4.3.

SANITARY SEWER MAP
CITY OF
MILLER

SCALE: 1" = 800'

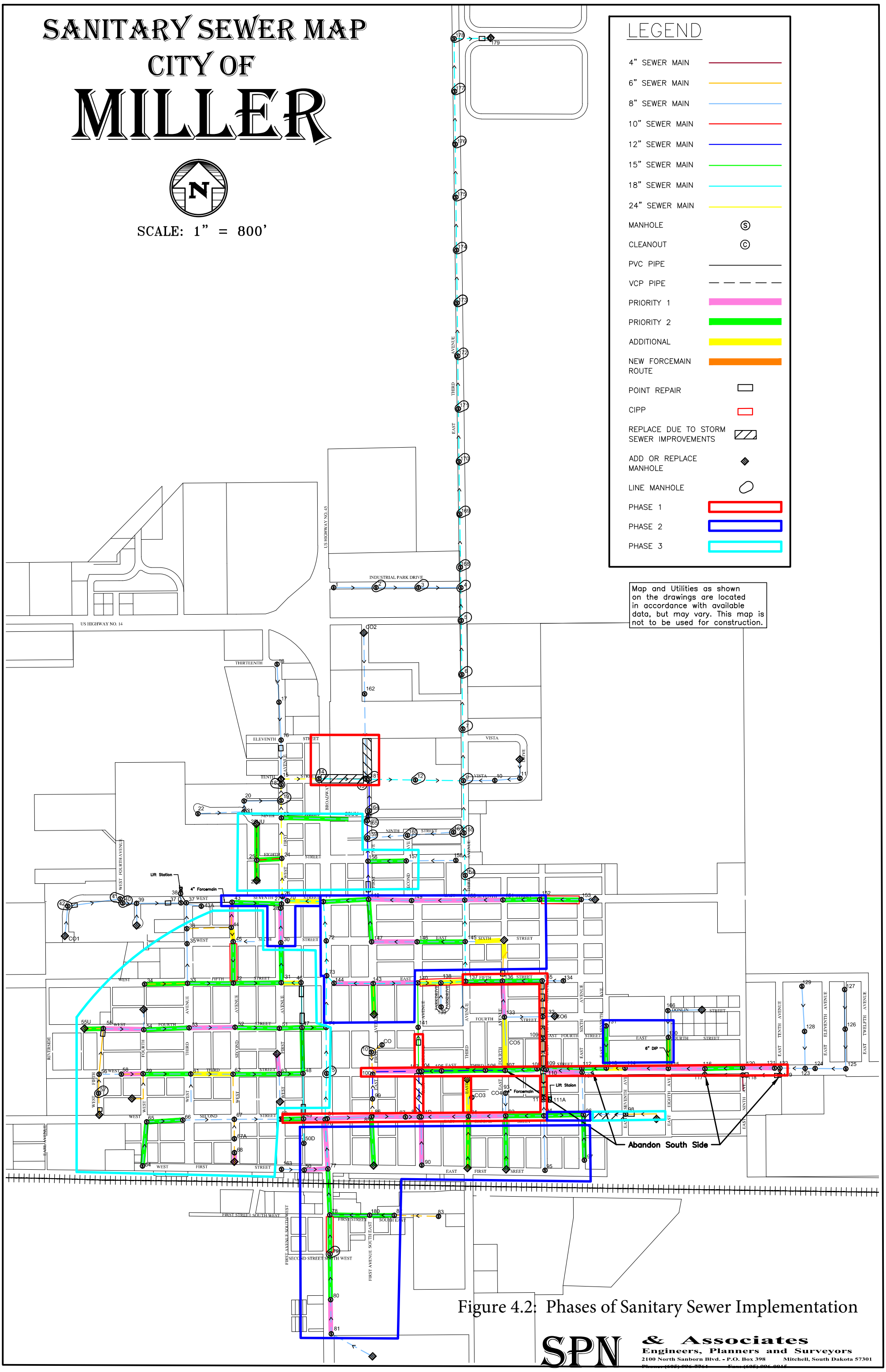


Figure 4.2: Phases of Sanitary Sewer Implementation

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

Table 4.1: Estimated Costs of Sanitary Sewer Phase 1

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$209,800.00	$209,800.00
2	Full Depth Concrete Saw Cut	700	LF	$6.00	$4,200.00
3	Full Depth Asphalt Saw Cut	1,100	LF	$4.00	$4,400.00
4	Remove and Dispose of Concrete Paving	3,200	SY	$10.00	$32,000.00
5	Pulverize and Salvage Existing Asphalt	26,100	SY	$3.50	$91,350.00
6	Remove and Dispose of Existing Manholes	42	EA	$400.00	$16,800.00
7	Remove and Dispose of Curb and Gutter	2,310	LF	$4.00	$9,240.00
8	4" Sanitary Sewer Service Pipe	3,930	LF	$26.00	$102,180.00
9	8" Sanitary Sewer Pipe	9,630	LF	$45.00	$433,350.00
10	12" Sanitary Sewer Pipe	930	LF	$51.00	$47,430.00
11	18" Sanitary Sewer Pipe	20	LF	$80.00	$1,600.00
12	Trench Stabilization for High Groundwater	2,600	TN	$30.00	$78,000.00
13	Sanitary Sewer Manholes	30	EA	$3,800.00	$114,000.00
14	Connect to Existing Sewer Service	131	EA	$250.00	$32,750.00
15	8" x 4" Sanitary Sewer Wyes	91	EA	$200.00	$18,200.00
16	12" x 4" Sanitary Sewer Wyes	40	EA	$300.00	$12,000.00
17	Post TV Inspection of Sewer	10,560	LF	$1.00	$10,560.00
18	Place Recycled Asphalt	26,100	SY	$2.00	$52,200.00
19	Fine Grading of Base Material	26,100	SY	$2.00	$52,200.00
20	Curb and Gutter	2,310	LF	$33.00	$76,230.00
21	Gravel Base Course or Surfacing	16,100	TN	$22.00	$354,200.00
22	Concrete Paving	3,200	SY	$80.00	$256,000.00
23	Asphalt Surfacing	3,600	TN	$120.00	$432,000.00
24	Double Blotter Coat	15,700	SY	$8.00	$125,600.00
25	Bypass Pumping	1	LS	$39,000.00	$39,000.00
26	Traffic Control	1	LS	$31,000.00	$31,000.00
27	Siltation and Erosion Control	1	LS	$10,000.00	$10,000.00
28	Topsoil, Seed, Fertilize & Mulch	9,300	SY	$1.50	$13,950.00
29	Incidental Construction Items	1	LS	$172,000.00	$172,000.00
				Subtotal	$2,832,240.00
				Contingencies	$283,200.00
				Total Construction Cost	$3,115,440.00
				Legal and Administration Cost	$62,300.00
				Design Engineering	$181,500.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$308,600.00
				Total Project Cost	$3,673,840.00

Table 4.2: Estimated Costs of Sanitary Sewer Phase 2

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$219,800.00	$219,800.00
2	Full Depth Concrete Saw Cut	600	LF	$6.00	$3,600.00
3	Full Depth Asphalt Saw Cut	1,000	LF	$4.00	$4,000.00
4	Pulverize and Salvage Existing Asphalt	33,600	SY	$3.50	$117,600.00
5	Remove and Dispose of Existing Manholes	28	EA	$400.00	$11,200.00
6	Remove and Dispose of Curb and Gutter	2,580	LF	$4.00	$10,320.00
7	4" Sanitary Sewer Service Pipe	4,740	LF	$26.00	$123,240.00
8	8" Sanitary Sewer Pipe	9,740	LF	$45.00	$438,300.00
9	10" Sanitary Sewer Pipe	50	LF	$48.00	$2,400.00
10	12" Sanitary Sewer Pipe	2,320	LF	$51.00	$118,320.00
11	18" Sanitary Sewer Pipe	420	LF	$80.00	$33,600.00
12	Trench Stabilization for High Groundwater	3,000	TN	$30.00	$90,000.00
13	Sanitary Sewer Manholes	35	EA	$3,800.00	$133,000.00
14	Connect to Existing Sewer Main	30	EA	$500.00	$15,000.00
15	Connect to Existing Sewer Service	158	EA	$250.00	$39,500.00
16	8" x 4" Sanitary Sewer Wyes	145	EA	$200.00	$29,000.00
17	12" x 4" Sanitary Sewer Wyes	13	EA	$300.00	$3,900.00
18	Post TV Inspection of Sewer	12,110	LF	$1.00	$12,110.00
19	Manhole Lining	340	VF	$180.00	$61,200.00
20	Place Recycled Asphalt	33,600	SY	$2.00	$67,200.00
21	Fine Grading of Base Material	33,600	SY	$2.00	$67,200.00
22	Curb and Gutter	2,580	LF	$33.00	$85,140.00
23	Gravel Base Course or Surfacing	19,000	TN	$22.00	$418,000.00
24	Asphalt Surfacing	3,300	TN	$120.00	$396,000.00
25	Double Blotter Coat	24,200	SY	$8.00	$193,600.00
26	Bypass Pumping	1	LS	$37,000.00	$37,000.00
27	Traffic Control	1	LS	$27,000.00	$27,000.00
28	Siltation and Erosion Control	1	LS	$10,000.00	$10,000.00
29	Topsoil, Seed, Fertilize & Mulch	13,200	SY	$1.50	$19,800.00
30	Incidental Construction Items	1	LS	$180,000.00	$180,000.00
				Subtotal	$2,967,030.00
				Contingencies	$296,700.00
				Total Construction Cost	$3,263,730.00
				Legal and Administration Cost	$65,300.00
				Design Engineering	$189,500.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$322,200.00
				Total Project Cost	$3,846,730.00

Table 4.3: Estimated Costs of Sanitary Sewer Phase 3

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$136,900.00	$136,900.00
2	Full Depth Concrete Saw Cut	400	LF	$6.00	$2,400.00
3	Full Depth Asphalt Saw Cut	1,250	LF	$4.00	$5,000.00
4	Pulverize and Salvage Existing Asphalt	21,300	SY	$3.50	$74,550.00
5	Remove and Dispose of Existing Manholes	34	EA	$400.00	$13,600.00
6	Remove and Dispose of Curb and Gutter	1,910	LF	$4.00	$7,640.00
7	4" Sanitary Sewer Service Pipe	2,730	LF	$26.00	$70,980.00
8	8" Sanitary Sewer Pipe	6,600	LF	$45.00	$297,000.00
9	12" Sanitary Sewer Pipe	1,060	LF	$51.00	$54,060.00
10	18" Sanitary Sewer Pipe	880	LF	$80.00	$70,400.00
11	Trench Stabilization for High Groundwater	1,900	TN	$30.00	$57,000.00
12	Sanitary Sewer Manholes	50	EA	$3,800.00	$190,000.00
13	Connect to Existing Sewer Service	91	EA	$250.00	$22,750.00
14	8" x 4" Sanitary Sewer Wyes	73	EA	$200.00	$14,600.00
15	12" x 4" Sanitary Sewer Wyes	18	EA	$300.00	$5,400.00
16	Post TV Inspection of Sewer	9,380	LF	$1.00	$9,380.00
17	Clean, Inspect and Pre-rehabilitation Televising of Sewer	1,720	LF	$2.00	$3,440.00
18	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	5	EA	$120.00	$600.00
19	8" Cured-in-Place Pipe Liner	970	LF	$27.00	$26,190.00
20	12" Cured-in-Place Pipe Liner	500	LF	$32.00	$16,000.00
21	18" Cured-in-Place Pipe Liner	250	LF	$75.00	$18,750.00
22	Sewer Service Tap Cut-Out	92	EA	$175.00	$16,100.00
23	Place Recycled Asphalt	21,300	SY	$2.00	$42,600.00
24	Fine Grading of Base Material	21,300	SY	$2.00	$42,600.00
25	Curb and Gutter	1,910	LF	$33.00	$63,030.00
26	Gravel Base Course or Surfacing	10,900	TN	$22.00	$239,800.00
27	Asphalt Surfacing	300	TN	$120.00	$36,000.00
28	Double Blotter Coat	18,500	SY	$8.00	$148,000.00
29	Bypass Pumping	1	LS	$18,000.00	$18,000.00
30	Traffic Control	1	LS	$10,000.00	$10,000.00
31	Siltation and Erosion Control	1	LS	$7,000.00	$7,000.00
32	Topsoil, Seed, Fertilize & Mulch	10,300	SY	$1.50	$15,450.00
33	Incidental Construction Items	1	LS	$112,000.00	$112,000.00
				Subtotal	$1,847,220.00
				Contingencies	$184,700.00
				Total Construction Cost	$2,031,920.00
				Legal and Administration Cost	$40,600.00
				Design Engineering	$123,000.00
				Bidding Phase Engineering	$18,000.00
				Construction Engineering	$209,100.00
				Total Project Cost	$2,422,620.00

4.3.3 Sanitary Sewer Option 3: Priority 3 Sanitary Sewer

Sections with a priority rating of three are composed of clay pipe in good condition or with minor deficiencies such as light sags, small cracks or other similar issues. The priority three-rated pipe is shown previously in Figure 3.2.

The existing piping will be replaced with eight- and 12-inch pipe as part of this option. The sewer services would be replaced within the rights-of-way with four-inch pipe.

The preliminary review of available data indicates that there are approximately seven sections of existing piping that would be likely candidates for lining. The manholes adjacent to pipe which will be replaced will also be replaced.

The improvements proposed would result in a reduction of the infiltration due to the newly installed pipe. The proposed improvements amount to approximately 34 percent of the total sewer system length. The estimated costs associated with the Priority 3 improvements are presented in Table 4.4.

Table 4.4: Estimated Costs of Priority 3 Sewer

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$308,100.00	$308,100.00
2	Full Depth Concrete Saw Cut	848	LF	$6.00	$5,088.00
3	Full Depth Asphalt Saw Cut	1,650	LF	$4.00	$6,600.00
4	Pulverize and Salvage Existing Asphalt	37,950	SY	$3.50	$132,825.00
5	Remove and Dispose of Existing Manholes	78	EA	$400.00	$31,200.00
6	Remove and Dispose of Curb and Gutter	2,120	LF	$4.00	$8,480.00
7	4" Sanitary Sewer Service Pipe	6,360	LF	$26.00	$165,360.00
8	8" Sanitary Sewer Pipe	6,890	LF	$45.00	$310,050.00
9	12" Sanitary Sewer Pipe	13,940	LF	$51.00	$710,940.00
10	Trench Stabilization for High Groundwater	5,200	TN	$30.00	$156,000.00
11	Directionally Bored Casing for 8" Sewer	100	LF	$100.00	$10,000.00
12	Directionally Bored Casing for 12" Sewer	100	LF	$150.00	$15,000.00
13	Sanitary Sewer Manholes	88	EA	$3,800.00	$334,400.00
14	Connect to Existing Sewer Service	212	EA	$250.00	$53,000.00
15	8" x 4" Sanitary Sewer Wyes	110	EA	$200.00	$22,000.00
16	12" x 4" Sanitary Sewer Wyes	102	EA	$300.00	$30,600.00
17	Post TV Inspection of Sewer	23,000	LF	$1.00	$23,000.00
18	Clean, Inspect and Pre-rehabilitation Televising of Sewer	2,170	LF	$2.00	$4,340.00
19	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	10	EA	$120.00	$1,200.00
20	8" Cured-in-Place Pipe Liner	1,110	LF	$27.00	$29,970.00
21	12" Cured-in-Place Pipe Liner	200	LF	$32.00	$6,400.00
22	18" Cured-in-Place Pipe Liner	860	LF	$75.00	$64,500.00
23	Sewer Service Tap Cut-Out	38	EA	$175.00	$6,650.00
24	Place Recycled Asphalt	37,950	SY	$2.00	$75,900.00
25	Fine Grading of Base Material	37,950	SY	$2.00	$75,900.00
26	Curb and Gutter	2,120	LF	$33.00	$69,960.00
27	Gravel Base Course or Surfacing	23,300	TN	$22.00	$512,600.00
28	Asphalt Surfacing	1,800	TN	$120.00	$216,000.00
29	Double Blotter Coat	25,500	SY	$8.00	$204,000.00
30	Gravel Surfacing (4")	8,700	TN	$22.00	$191,400.00
31	Bypass Pumping	1	LS	$56,000.00	$56,000.00
32	Traffic Control	1	LS	$36,000.00	$36,000.00
33	Siltation and Erosion Control	1	LS	$10,000.00	$10,000.00
34	Topsoil, Seed, Fertilize & Mulch	15,800	SY	$1.50	$23,700.00
35	Incidental Construction Items	1	LS	$252,000.00	$252,000.00
				Subtotal	$4,159,163.00
				Contingencies	$415,900.00
				Total Construction Cost	$4,575,063.00
				Legal and Administration Cost	$91,500.00
				Design Engineering	$231,400.00
				Bidding Phase Engineering	$15,000.00
				Construction Engineering	$277,700.00
				Total Project Cost	$5,190,663.00

4.4 LIFT STATION IMPROVEMENTS

A summary of the identified lift station deficiencies is as follows:

- The City currently has one generator that is rotated between the two lift station sites during a power outage. An automatic stand-by emergency generator is recommended for each site.
- The concrete surfaces in the wet well at the east lift station are in poor condition.
- The pumps in both lift stations have capacities that are lower than expected. This could be due to worn pumps or partially plugged force mains.
- The pumps in the west lift station seem to be inadequately sized. Larger pumps would increase the velocity in the force main to an acceptable velocity.
- The surfaces of the pumps, fittings, valves and piping in the east lift station are rusty.
- The east lift station's dry pit leaks groundwater and has no flood water alarm.
- A lift station supervisory control and data acquisition (SCADA) system is recommended to provide for operator control, monitoring and record keeping.

4.4.1 Lift Station Option 1: Do Nothing

There are certain deficiencies that should be addressed for continued operation of the lift stations. Because doing nothing will not address any of the problems with the system, it is not considered as an acceptable option.

4.4.2 Lift Station Option 2: West Lift Station Repair

This option considers replacing the pumps in the west lift station to increase the flow rate. The higher flow rate will increase the velocity in the force main to an acceptable flow rate. Cleaning of the force main is also recommended and is included in the cost estimate.

To reduce the risk of flooding the lift station, the wet well and electrical materials adjacent to the lift station will be raised. An automatic stand-by generator is recommended to provide power during emergencies. The fittings, valves and piping should be prepared and recoated to preserve the life of the materials. The costs associated with the proposed improvements are presented in Table 4.5.

Table 4.5: Estimated Costs of West Lift Station Repair

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$9,000.00	$9,000.00
2	Adjust Wet Well / Guiderails	4	VF	$2,000.00	$8,000.00
3	Adjust Valve Pit	4	VF	$1,000.00	$4,000.00
4	Raise Control Panel	1	LS	$1,200.00	$1,200.00
5	Electrical Adjustments	1	LS	$3,200.00	$3,200.00
6	Embankment and Access Road	200	CY	$10.00	$2,000.00
7	Gravel Surfacing (6")	110	TN	$20.00	$2,200.00
8	Topsoil, Seed, Fertilizer & Mulch	300	SY	$1.25	$375.00
9	Erosion Control	1	LS	$1,000.00	$1,000.00
10	Remove and Replace West Lift Station Pumps	1	LS	$15,000.00	$15,000.00
11	40-kW Trailer-Mounted Generator	1	EA	$40,000.00	$40,000.00
12	Sandblast and Recoat Fittings, Valves and Piping	1	LS	$10,000.00	$10,000.00
13	Force Main Cleaning with Poly Swab	1	LS	$3,000.00	$3,000.00
				Subtotal	$98,975.00
				Contingencies	$9,900.00
				Total Construction Cost	$108,875.00
				Legal and Administration Cost	$2,200.00
				Design Engineering	$9,800.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$11,800.00
				Total Project Cost	$138,675.00

4.4.3 Lift Station Option 3: East Lift Station Replacement

There are several deficiencies associated with the east lift station. However, the main reason for the required replacement is due to the need for a deeper structure and a greater capacity. The existing sewer was built with flat slopes that do not meet current design criteria. The sewer replacement plan will include re-routing much of the sewer in the area to the east lift station. This will allow the proposed slopes to meet current design practice, but will collect a greater percentage of waste in the area. The route of the force main must be extended to the nearest manhole from which the sewer flows by gravity to the primary treatment pond. A new dual six-inch force main is proposed for increased capacity. An automatic stand-by generator is recommended to provide power during an emergency. Two types of lift stations are evaluated and discussed subsequently.

4.4.4 Lift Station Option 3a: Wet Well / Dry Pit

The first lift station type considered is a wet well / dry well type, similar to the existing lift station. The wet well would be composed of a precast concrete structure. The dry pit would be composed of a steel structure that houses the pumps, controls and related electrical equipment. The costs associated with the proposed improvements are presented in Table 4.6.

Table 4.6: Estimated Costs of East Lift Station Replacement

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$56,000.00	$56,000.00
2	Abandon Existing Lift Station	1	LS	$10,000.00	$10,000.00
3	12" Sanitary Sewer Pipe	100	LF	$70.00	$7,000.00
4	6" PVC Dual Force Main	1,200	LF	$38.00	$45,600.00
5	6" PVC 90° Bend	4	EA	$400.00	$1,600.00
6	Connect to Existing Manhole	2	EA	$1,500.00	$3,000.00
7	1" Type K Copper Water Service Pipe	80	LF	$23.00	$1,840.00
8	1" Curb Stop	1	EA	$275.00	$275.00
9	Lift Station Wet Well and Appurtenances	1	LS	$130,000.00	$130,000.00
10	Furnish Dry Pit Station and Appurtenances	1	LS	$120,000.00	$120,000.00
11	Install Dry Pit Station and Appurtenances	1	LS	$100,000.00	$100,000.00
12	Electrical Concrete Pad	1	LS	$1,000.00	$1,000.00
13	Rock Surfacing	50	TN	$30.00	$1,500.00
14	Site Grading and Access Road Embankment	1	LS	$4,500.00	$4,500.00
15	Gravel Surfacing	550	TN	$22.00	$12,100.00
16	60 kW Automatic Stand-by Generator	1	LS	$50,000.00	$50,000.00
17	Electrical Work and Materials	1	LS	$20,000.00	$20,000.00
18	Bypass Pumping	1	LS	$5,000.00	$5,000.00
19	Clean Force Main	1	LS	$5,000.00	$5,000.00
20	Traffic Control	1	LS	$5,000.00	$5,000.00
21	Erosion Control	1	LS	$1,000.00	$1,000.00
22	Dewatering	1	LS	$15,000.00	$15,000.00
23	Seed, Fertilize and Mulch Disturbed Area	7,100	SY	$1.50	$10,650.00
				Subtotal	$606,065.00
				Contingencies	$60,600.00
				Total Construction Cost	$666,665.00
				Legal and Administration Cost	$13,300.00
				Design Engineering	$34,000.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$40,000.00
				Total Project Cost	$758,965.00

4.4.5 Lift Station Option 3b: Submersible with Building

The second type of lift station evaluated is a submersible type. Typically, submersible lift stations are constructed more economically, but require different types of maintenance and operation. In order to provide ease of operation a building is proposed which will house the controls and valves. The costs associated with the proposed improvements are presented in Table 4.7.

Table 4.7: Estimated Costs of East Lift Station Replacement

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$47,000.00	$47,000.00
2	Abandon Existing Lift Station	1	LS	$10,000.00	$10,000.00
3	12" Sanitary Sewer Pipe	100	LF	$70.00	$7,000.00
4	6" PVC Dual Force Main	1,200	LF	$38.00	$45,600.00
5	6" PVC 90° Bend	4	EA	$400.00	$1,600.00
6	Connect to Existing Manhole	2	EA	$1,500.00	$3,000.00
7	1" Type K Copper Water Service Pipe	80	LF	$23.00	$1,840.00
8	1" Curb Stop	1	EA	$275.00	$275.00
9	Lift Station Wet Well and Appurtenances	1	LS	$120,000.00	$120,000.00
10	Above-Ground Piping, Fittings and Related Items	1	LS	$50,000.00	$50,000.00
11	Control Building with Concrete and Related Items	1	LS	$90,000.00	$90,000.00
12	Rock Surfacing	50	TN	$30.00	$1,500.00
13	Site Grading and Access Road Embankment	1	LS	$4,500.00	$4,500.00
14	Gravel Surfacing	550	TN	$22.00	$12,100.00
15	60 kW Automatic Stand-by Generator	1	LS	$50,000.00	$50,000.00
16	Electrical Work and Materials	1	LS	$20,000.00	$20,000.00
17	Bypass Pumping	1	LS	$5,000.00	$5,000.00
18	Clean Force Main	1	LS	$5,000.00	$5,000.00
19	Traffic Control	1	LS	$5,000.00	$5,000.00
20	Erosion Control	1	LS	$1,000.00	$1,000.00
21	Dewatering	1	LS	$15,000.00	$15,000.00
22	Chain Linked Fence with Gates	1	LS	$7,000.00	$7,000.00
23	Seed, Fertilize and Mulch Disturbed Area	7,100	SY	$1.50	$10,650.00
				Subtotal	$513,065.00
				Contingencies	$51,300.00
				Total Construction Cost	$564,365.00
				Legal and Administration Cost	$11,300.00
				Design Engineering	$34,000.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$40,000.00
				Total Project Cost	$654,665.00

4.4.6 Lift Station Option 4: Lift Station SCADA

A lift station SCADA system is recommended to improve control of the lift stations. The SCADA system would be integrated with the City's existing SCADA system to provide for overall control of the City's facilities. The SCADA system would provide alarm functions for emergencies, log events and records for future use and provide remote access for ease of use. The estimated cost of the SCADA system is presented in Table 4.8.

Table 4.8: Estimated Costs for Lift Station SCADA

Item	Description	Quantity		Unit Price	Total Cost
1	Furnish SCADA Equipment	1	LS	$30,000.00	$30,000.00
2	Install SCADA Equipment	1	LS	$15,000.00	$15,000.00
				Subtotal	$45,000.00
				Contingencies	$4,500.00
				Total Construction Cost	$49,500.00
				Legal and Administration Cost	$1,000.00
				Design Engineering	$8,200.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$9,800.00
				Total Project Cost	$74,500.00

4.5 PROPOSED WASTEWATER TREATMENT IMPROVEMENTS

The following is a summary of the deficiencies of Miller's wastewater treatment system.

- The manhole upstream of Cell One is in poor condition. The repair of this manhole is included in the sanitary sewer improvements.
- Cell Two is much smaller than Cells One and Three which makes it difficult to properly operate the WWTF.
- There is an unknown degree of sludge build-up in Cell One. The City plans to remove this sludge when necessary.
- The treatment system is overloaded hydraulically.
- The discharge monitoring reports indicate violations of the limits. This is most likely due to the hydraulic overloading of the facility.
- The new permit will include limitations on ammonia which may be difficult to meet with the current facility.

The improvements made to the wastewater collection system (if any) would reduce the current infiltration and inflow rate. However, these estimates of infiltration and inflow reduction could vary greatly based on many factors such as: groundwater levels, soil conditions and pipe deficiencies. The currently estimated infiltration and inflow rate is used for the sizing of WWTF improvements in this section.

The enforcement of a sump pump ordinance and public notification of the problems being created by discharging sump pump waste to the sewer system could have a profound impact on the reduction of infiltration and inflow. In order to provide a conservative sizing of the WWTF the current infiltration and inflow rate is used for the design values. Since the reduction of the infiltration and inflow sources due to these actions cannot be quantified prior to the design, the wastewater flows should be monitored to determine the actual reduction of infiltration and inflow achieved by the resulting modifications.

4.5.1 Treatment System Option 1: Do Nothing

This option involves no improvements made to the WWTF and will not improve the hydraulic overloading of the WWTF and other identified deficiencies. Because of the major work proposed on the sanitary sewer, it is likely that a significant reduction in infiltration and inflow will be realized. The reduction in infiltration and inflow could potentially eliminate the need for an expansion of the facility. Therefore, the "Do Nothing" option should be carefully considered.

4.5.2 Treatment System Option 2: WWTF Expansion

In order to add hydraulic capacity and improve the ability of the WWTF to meet the discharge limits a pond area expansion is recommended. The third column shown in Table 4.9 includes the proposed extra pond area which is necessary to provide adequate storage for the winter period. The most likely location for the proposed pond would be on the east side of the existing facility. The City owns the property adjacent to Cell Two that can be used for expansion.

The proposed treatment cell would be incorporated with the existing Cell Two to create a 18.2-acre Cell Two. This will promote better operation of the WWTF than the continued use of the relatively small existing Cell Two. The costs associated with the Option 2 improvements are presented in Table 4.10. Figure 4.3 shows the proposed layout of the Cell Two expansion.

Table 4.9: Proposed Hydraulic Capacity

	Current	Expand Cell 2
Population	1489	1489
Domestic Wastewater Flow, gpcpd	66.5	66.5
Domestic Wastewater Flow, gpd	99,019	99,019
Design Infiltration and Inflow, gpd	228,000	228,000
Total Hydraulic Loading, gpd	327,019	327,019
Total WWTF Volume Required, gal	58,863,330	58,863,330
Pond Capacity, gal	45,563,730	58,863,330
Capacity Shortage, gal	13,299,600	0
Capacity Shortage, gpd	73,887	

Table 4.10: Anticipated Costs of WWTF Improvements

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$60,000.00	$60,000.00
2	Remove and Dispose of Fence	2,070	LF	$1.00	$2,070.00
3	Remove and Stockpile Topsoil	11,100	CY	$2.00	$22,200.00
4	Pond Excavation	79,600	CY	$2.50	$199,000.00
5	Pond Dike Construction	11,000	CY	$3.00	$33,000.00
6	Construct Pond Clay Liner	8,300	CY	$4.00	$33,200.00
7	Place Topsoil	11,100	CY	$3.00	$33,300.00
8	Remove and Salvage Riprap	3,400	TN	$35.00	$119,000.00
9	Riprap with Fabric Filter	1,900	TN	$32.00	$60,800.00
10	Connect to Existing Pond Piping	2	EA	$2,000.00	$4,000.00
11	Depth Indicator	1	EA	$1,500.00	$1,500.00
12	Inlet Structure	2	EA	$3,000.00	$6,000.00
13	Outlet Structure	1	EA	$2,500.00	$2,500.00
14	Seepage Collars	3	EA	$500.00	$1,500.00
15	12" Ductile Iron Pipe	200	LF	$50.00	$10,000.00
16	8" Control Valve	1	EA	$1,800.00	$1,800.00
17	Gravel Surfacing for Pond Access	500	TN	$22.00	$11,000.00
18	Warning Signs	1	LS	$1,000.00	$1,000.00
19	Transfer Pumping	1	LS	$20,000.00	$20,000.00
20	12" Straw Wattles	2,000	LF	$5.00	$10,000.00
21	Barbed Wire Fence	2,300	LF	$3.50	$8,050.00
22	Seeding, Fertilizing and Mulching	8,700	SY	$1.20	$10,440.00
				Subtotal	$650,360.00
				Contingencies	$65,000.00
				Total Construction Cost	$715,360.00
				Legal and Administration Cost	$14,300.00
				Design Engineering	$45,700.00
				Bidding Phase Engineering	$4,500.00
				Construction Engineering	$54,800.00
				Total Project Cost	$834,660.00

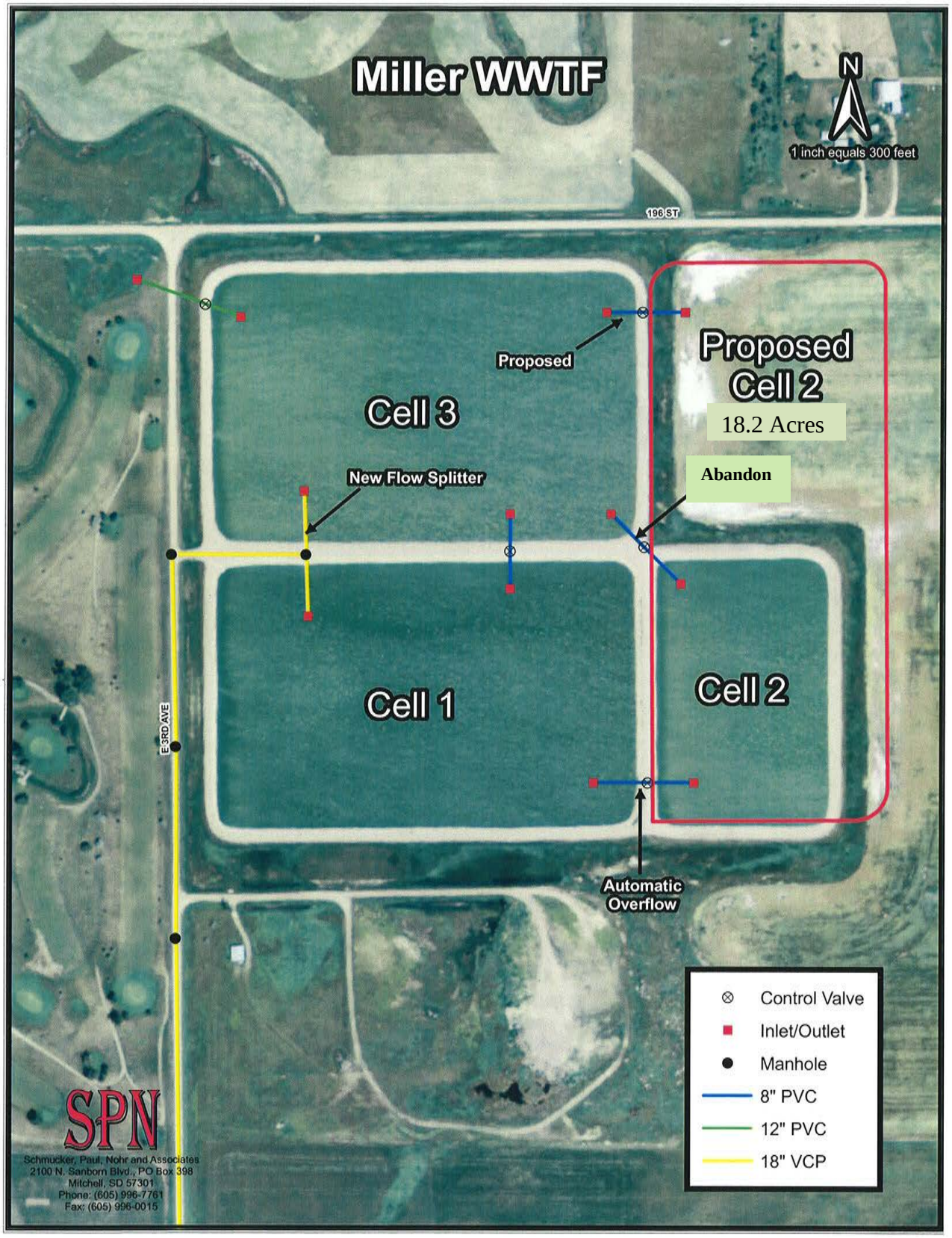


Figure 4.3: Proposed Layout of WWTF Improvements

4.6 OPTIMUM OPERATION OF EXISTING FACILITIES

The existing facilities are being operated in the most efficient manner that can be accomplished, considering the deficiencies and problems that will be addressed in the proposed improvements.

4.7 REGIONALIZATION

Saint Lawrence is located approximately one mile east of Miller. However, the town has recently completed a wastewater treatment facility upgrade and is not capable of handling the magnitude of wastewater flow from Miller. There are no other communities within a reasonable distance to make consideration of regional wastewater solutions feasible.

5 WASTEWATER SYSTEM RECOMMENDATIONS

A summary of the total project costs for each of the improvement options discussed in Section 4 is presented below.

Table 5.1: Summary of Costs

Improvement Options	Cost	Recommended for Phase 1	Recommended for Phase 2	Recommended for Phase 3
Sanitary Sewer Priority 1 & 2 - Phase 1	$3,673,840	$3,673,840		
Sanitary Sewer Priority 1 & 2 - Phase 2	$3,846,730		$3,846,730	
Sanitary Sewer Priority 1 & 2 - Phase 3	$2,422,620			$2,422,620
Sanitary Sewer Priority 3	$5,190,663			
West Lift Station Repair	$138,675	$138,675		
East Lift Station Replacement Option 1	$758,965			
East Lift Station Replacement Option 2	$654,665	$654,665		
Lift Stations SCADA	$74,500	$74,500		
WWTF Improvements	$834,660			
Total Cost of Wastewater System	**$17,595,318**	**$4,541,680**	**$3,846,730**	**$2,422,620**

5.1 WASTEWATER COLLECTION SYSTEM

The Sanitary Sewer Option 1 (Do Nothing) is not recommended because it would not address any of the identified structural deficiencies or potential health hazards associated with the existing sewer. Phase 1 of Option 2 is recommended to begin an implementation program to fix the major deficiencies identified by the TV inspection records. Phases 2 and 3 of Option 2 should be implemented upon completion of the previous phase. Option 3 (Priority 3 Sanitary Sewer) is not recommended at this time. The City can re-assess the need for the Priority 3 improvements as funding becomes available.

5.2 LIFT STATION IMPROVEMENTS

The “do nothing” option is not recommended because this will not provide the higher wastewater flow rate that is required at the west lift station. The force mains would not be cleaned and the east wet well would not be lined which would continue to degrade. The “do nothing” option is also not recommended because a second generator is recommended to operate the lift stations during emergencies. The flood alarm and the repair of the rusty pipe and fittings are recommended. The replacement of the east lift

station will be necessary to provide for a greater service area and a deeper sewer upon the implementation of the Phase 1 improvements.

Lift Station Option 2 (West Lift Station Repair) is recommended to return the lift station to proper operating conditions and provide for many more years of service. Lift Station Option 3 (East Lift Station Replacement) is recommended to provide service to the larger service area and deeper sewer upon implementation of the Phase 1 improvements. The lift station replacement will also take care of the identified lift station deficiencies. Lift Station Option 4 (Lift Station SCADA) is recommended to provide an appropriate control, monitoring and record-keeping system that will greatly benefit the operators.

5.3 WASTEWATER TREATMENT IMPROVEMENTS

WWTF Option 1 (Do Nothing) is recommended as the Option 2 Sanitary Sewer improvements should significantly reduce the infiltration and inflow which most likely will eliminate the identified deficiencies without the implementation of the WWTF expansion.

5.4 DEMONSTRATION OF FINANCIAL CAPABILITY

As part of the cost analysis of the recommended improvements, the City's ability to pay for the projects is evaluated. The total costs of the improvements are listed in Table 5.1. For the purpose of this financial evaluation, the total cost of the improvements is assumed to be eligible for a low interest loan from the DENR's State Revolving Fund program. This, however, is subject to change due to decisions that must be made by the appropriate funding agencies.

Table 5.2 summarizes the financial data that was supplied by the City Finance Officer and is used to determine the proposed operational surplus or deficit of the Wastewater Fund. The budgeted revenues generated from user fees are listed in Table 5.2.

The budget analysis indicates that the current revenue is sufficient until the payment for the proposed project loan is added. The new loan will create a deficit and require an increase in user fees. The increase in user fees will depend on the actual financing that is

available. The current sewer fee schedule is a flat rate of $31.65 per month for residential use which includes a surcharge for a previous project. Sewer rates for commercial use are $31.65 per month plus a charge of $1 per 1,000 gallons of water used over 6,000 gallons. The DENR requires a minimum sewer rate of $22 per month to qualify for funding consideration. The operation and maintenance costs for the Wastewater Fund are based on the costs for 2015. These costs include the salaries and all expenses incurred during the year.

The annual loan payment for principal and interest on the total cost of the improvements is calculated based on a 30-year loan period and an interest rate of 3.25 percent. The implementation of the recommended improvements will require an increase in user fees. The increase in user fees will depend on the actual financing that is available. The proposed improvements are expected to reduce the annual costs of operation and maintenance as shown in Table 5.2.

The short-lived asset replacement cost is included in Table 5.2 and consists of lift station pump replacement, control equipment replacement and general repair items. The calculations for the short-lived asset replacement are shown in Table 5.3. The City should budget this amount annually for maintenance. Because the financing that will be supplied by various funding agencies is unknown at this time, multiple columns of budget information are provided in Table 5.4 based on varying grant percentages. The City would need a grant of approximately 84 percent to balance the sewer fund with the current rate structure or an increase of $24.25 per user per month. An alternate table for sewer rate analysis is presented in Table 5.5 for a Rural Development loan which would have a term of 40 years and an interest rate of 2.625 percent.

Table 5.2: Operation of the Wastewater Fund

	2015 Budget	2016 Budget
Total Cost of Improvements		$4,541,680
Revenue from User Fees	+ $283,000	+ $283,000
Current O & M Cost - Expenses	- $260,225	- $220,311
Short-Lived Asset Replacement	- $9,200	- $9,200
Current Principal and Interest Payments	- $11,500	- $11,414
Retirement of Debt Incurred with This Project	- $0	- $239,264
Debt Reserves (10% of Loan Payment)	- $0	- $23,930
Remaining Surplus	**$2,075**	**($221,119)**
Increase of User Fee		$24.25
Number of Accounts	765	765
Added Revenue	$0	$222,615
Surplus After Increase in User Fee	**$2,075**	**$1,496**
Current Sewer Fee (Residential)	$31.65	$31.65
New Sewer Fee	$31.65	$55.90

Table 5.3: Short-Lived Asset Replacement Calculations

Expenses	Annual Cost	Cost	Future Cost	Period of Service, yr	Start Service
Lift Station Pumps	$4,800	$50,000	$103,946	15	2016
Lift Station Controls	$2,900	$30,000	$62,368	15	2016
Lift Station Equipment	$1,500	$16,000	$33,263	15	2016
Annual Total to Be Budgeted	$9,200				

Table 5.4: Sewer Rate Analysis (SRF)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$220,311	$220,311	$220,311	$220,311	$220,311	$220,311
Amount Amortized	$1,135,420	$1,362,504	$1,589,588	$1,816,672	$2,043,756	$2,270,840
Grant Amount	$3,406,260	$3,179,176	$2,952,092	$2,725,008	$2,497,924	$2,270,840
Annual Payment	$59,816	$71,779	$83,742	$95,705	$107,669	$119,632
Debt Reserves	$5,982	$7,178	$8,374	$9,571	$10,767	$11,963
Current Debt/Asset/Other Cost	$20,614	$20,614	$20,614	$20,614	$20,614	$20,614
Total Annual Costs	$306,722	$319,882	$333,041	$346,201	$359,360	$372,520
Annual Revenue	$283,000	$283,000	$283,000	$283,000	$283,000	$283,000
Surplus/Deficit After Project	-$23,722	-$36,882	-$50,041	-$63,201	-$76,360	-$89,520
Minimum Sewer Rate Increase	$2.75	$4.25	$5.50	$7.00	$8.50	$10.00
New Sewer Rate	$34.40	$35.90	$37.15	$38.65	$40.15	$41.65

Table 5.5: Sewer Rate Analysis (RD)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$220,311	$220,311	$220,311	$220,311	$220,311	$220,311
Amount Amortized	$1,135,420	$1,362,504	$1,589,588	$1,816,672	$2,043,756	$2,270,840
Grant Amount	$3,406,260	$3,179,176	$2,952,092	$2,725,008	$2,497,924	$2,270,840
Annual Payment	$46,188	$55,426	$64,663	$73,901	$83,139	$92,376
Debt Reserves	$4,619	$5,543	$6,466	$7,390	$8,314	$9,238
Current Debt/Asset/Other Cost	$20,614	$20,614	$20,614	$20,614	$20,614	$20,614
Total Annual Costs	$291,732	$301,893	$312,055	$322,216	$332,378	$342,539
Annual Revenue	$283,000	$283,000	$283,000	$283,000	$283,000	$283,000
Surplus/Deficit After Project	-$8,732	-$18,893	-$29,055	-$39,216	-$49,378	-$59,539
Minimum Sewer Rate Increase	$1.00	$2.25	$3.25	$4.50	$5.50	$6.50
New Sewer Rate	$32.65	$33.90	$34.90	$36.15	$37.15	$38.15

6 STORM DRAINAGE EVALUATION

6.1 DRAINAGE ANALYSIS

The rational method as used in this drainage analysis determines the peak runoff rate that can be expected. The rational method is one of the most common methods to calculate expected runoff due to a rainfall event. The rational method is used to calculate the runoff from small drainage basins and simple collection systems.

The basic formula of the rational method is: Q = C x I x A (runoff in cubic feet per second = runoff coefficient x rainfall intensity in inches per hour x drainage area in acres). The concept of the rational method is that a rainfall with a given intensity will generate the maximum runoff when the entire drainage area is contributing runoff to the outlet. The duration of the storm between the start of the rainfall and the period when the entire drainage area is contributing runoff is referred to as the time of concentration. The runoff coefficient is a factor that represents the fraction of the rainfall that is anticipated to be generated as runoff. This coefficient varies by land use and soil type. The intensity of the rainfall can be chosen from intensity-duration-frequency (IDF) charts which are published for certain geographical areas. When the time of concentration is used to determine the intensity of the storm from the IDF curves, an estimate of the peak storm water runoff rate is generated with the rational method.

6.1.1 Runoff Coefficient

Coefficients that are utilized for design calculations are 0.2 for farmland, 0.4 for residential areas, and 0.7 for commercial land. For the purpose of this study a runoff coefficient of 0.6 was used as an average representation for design.

6.1.2 Time of Concentration

The time of concentration at a given location is a measure of the time elapsed after rainfall begins to when the entire drainage area is contributing runoff to a given area. Thus, the time of concentration is the greatest possible duration of a given unit of runoff to a particular point in the drainage system. This design parameter determines the

duration of the design storm for runoff calculations based on the distance and elevation difference for the most remote contributing point. The storm water run-off values generated for this report are conservative in that it is assumed that the storm water run-off can flow freely through the drainage area with no restrictions.

6.1.3 Rainfall Intensity

The time of concentration is used to determine the duration of the design storm. The intensity of the design storm is taken from the Hydrometeorological Design Studies Center NOAA Atlas 14 Point Precipitation Frequency Estimates of South Dakota. The estimates are based on frequency analysis of a partial duration series which means that the intensity, duration and frequency of the storms were analyzed for the area. The rainfall event that was used for this evaluation is considered a five-year event which means that there is a 20 percent chance that at least one event of that magnitude will happen each year. It is impractical to design a storm drainage system for the worst-case storm. As a result, designing for a storm event that is fairly common will lessen the impacts of larger storm events and is reasonably economical to construct. Taking all this into account, a five-year event is typically utilized by many communities and is recommended for the capacity of proposed improvements.

6.2 EXISTING DRAINAGE SYSTEM EVALUATION

The City of Miller is relatively flat sloping from south to north. Ree Creek flows around the west side of the City and collects a majority of the storm water run-off. Storm water is conveyed away from the City by multiple storm water drainage systems. Those systems consist of concrete curb and gutter, asphalt streets, storm sewer inlets and storm sewer piping which include reinforced concrete pipe (RCP), polyvinyl chloride (PVC) pipe, asbestos cement pipe (ACP) and vitrified clay pipe (VCP).

Previous smoke testing which was conducted as part of the *Facility Plan for the Wastewater Collection and Treatment Systems* identified two locations where a cross connection between the sanitary and storm sewer existed. The two cross connections were storm sewer inlets on Broadway south of Third Street. Cross connections allow

storm water to directly enter the sanitary sewer system adding unwanted volume to the system. A drain tile was found connected directly to the sewer on the southwest corner of West Fourth Avenue and West Third Street.

A segment located in east central Miller from East First Avenue to East Third Avenue between East Third Street and East Fifth Street experiences flooding and standing water. Any time storm water is allowed to remain stagnant for a duration of time, it can greatly undermine the integrity of the streets by weakening the subgrade. After time and repeated traffic use the street will deteriorate requiring additional maintenance or complete street reconstruction.

East Second Street from East Third to East Seventh Avenue and the surrounding area also experience flooding during spring thaw and rain events. A 36-inch RCP culvert is located to the east of this area which conveys storm water under the railroad tracks and contributes to flooding within the City. Storm water has flowed over the railroad tracks into the City which has added to flooding within the City. The lift station located on East Fifth Avenue north of Second Street has experienced flooding allowing storm water to infiltrate the sanitary sewer system. Flooding in this area needs to be reduced in order to decrease inflow into the sanitary sewer system and to provide relief to residents.

Flooding has also been observed on West Second Avenue on the northwest side of the City. An eight-inch PVC line with inlets conveys storm water to Crystal Lake. The piping system is inadequate to carry any significant rain event. On West Seventh Street and West Third Avenue a sanitary sewer lift station experiences flooding during spring thaw and rain events.

Other areas of the City do not see the extent of flooding as described above but prolonged drainage throughout the City can ultimately present the same results and undermine asphalt streets. The City of Miller has taken a proactive approach by installing an extensive amount of curb and gutter and storm sewer piping with inlets. However, standing water throughout the City after rain events gives clear signs that the existing

storm sewer piping and inlets is undersized. For example, areas of flooding which will be described in more detail takes place where existing inlets are located.

The majority of the storm sewer system was cleaned and televised as part of projects in 2014 and 2015. The majority of the storm sewer inlets and manholes were also inspected. The televising showed many areas of failing pipe as well as inadequate storm sewer inlets. The following sections will discuss these deficiencies in greater detail.

6.3 REGIONAL DRAINAGE SYSTEMS

The City of Miller contains four major underground piping systems: the West, Central, Northeast and Southeast Systems. The drainage systems are shown in Figure 6.1. Three of the four main piping systems discharge to Ree Creek which flows south to north around the west side of the City. Storm water is routed to the storm drainage systems by curb and gutter flow to storm sewer inlets. The drainage systems are discussed in greater detail in the following sections.

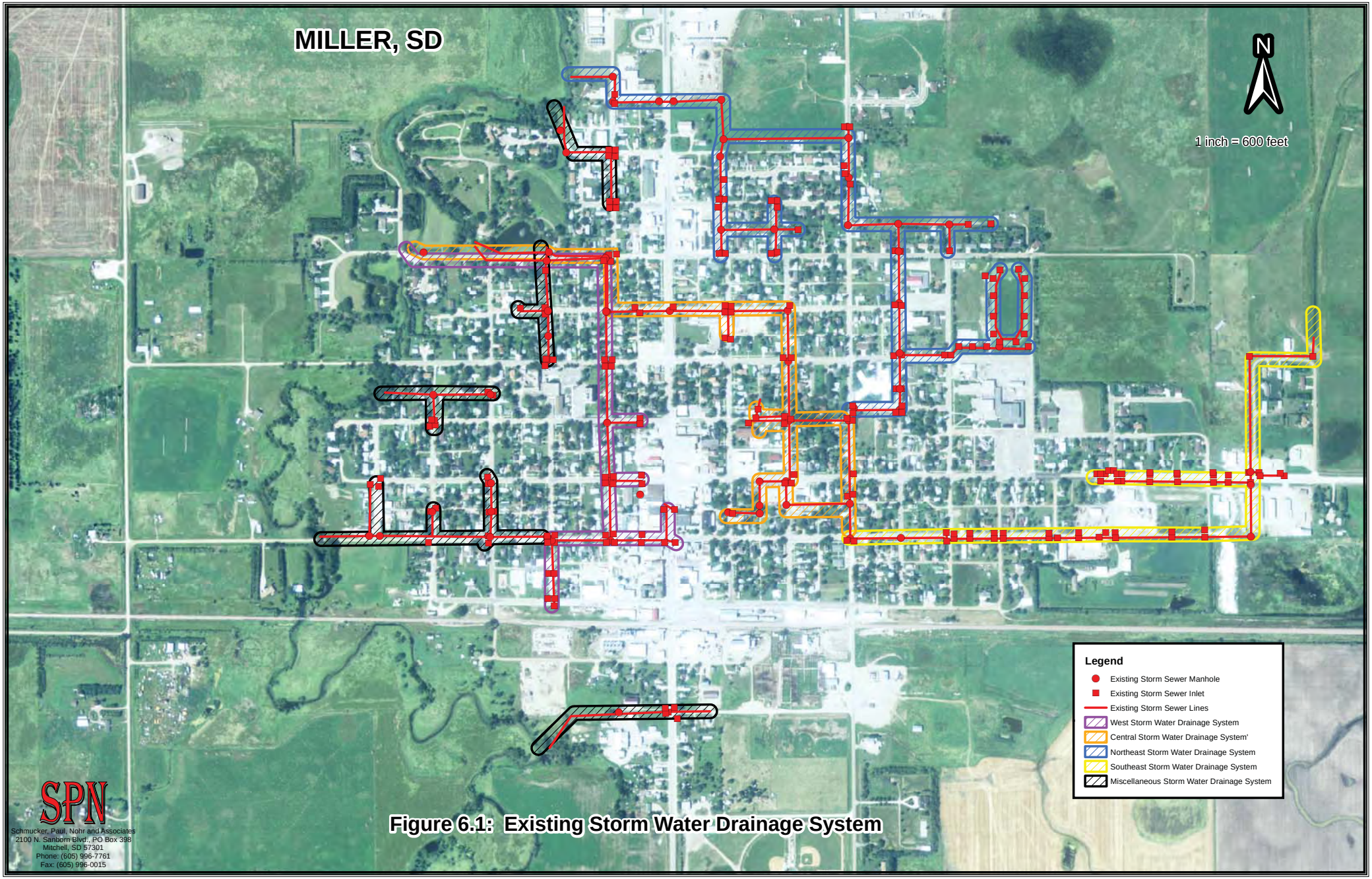


Figure 6.1: Existing Storm Water Drainage System

6.3.1 Drainage System 1: West Drainage System

An underground storm water drainage system is located on the west side of the City on West First Avenue stretching from West First to West Seventh Streets. This stretch of storm sewer was incorporated as part of the initial storm water drainage system. The system consists of approximately 4,600 linear feet of reinforced concrete pipe and vitrified clay pipe and approximately 28 storm sewer inlets. All streets in the vicinity of the system have curb and gutter which allows the storm water to be directed to storm sewer inlets. City of Miller personnel have joined this system with the West Second Street drainage system in an attempt to take pressure off the system when applicable. Table 6.1 has been provided to show the capacities for the different sections of pipe throughout the system. Figure 6.2 illustrates a typical storm sewer inlet located within the system. Figure 6.3 illustrates an inlet with a CMP pipe concreted into the flow line. Storm sewer calculations have been provided in Appendix E.

Table 6.1: Pipe Capacity for West Drainage System

Section of Pipe	Pipe Size in	Pipe Capacity cfs	Slope %	Rain Event in/hr
W 2nd Avenue (W 1st Street - W 2nd Street)	18	7.4	0.50%	1.83
W 2nd Street (Broadway - W 1st Avenue)	18	7.4	0.50%	1.47
W 1st Avenue (W 2nd Street - W 3rd Street)	24	16.0	0.50%	0.81
W 1st Avenue (W 3rd Street - W 4th Street)	27	21.9	0.50%	0.84
W 1st Avenue (W 5th Street - W 6th Street)	30	29.0	0.50%	1.00
W 1st Avenue (W 4th Street - W 5th Street)	30	29.0	0.50%	0.85
W 1st Avenue (W 6th Street - W 7th Street)	36	47.2	0.50%	1.38
W 7th St (W 1st Ave - Ree Creek)	36	47.2	0.50%	1.29

* Size and type of pipe are an estimate from obtained data

* Slope of pipe is unknown, 0.5% was used as a conservative estimate

Figure 6.2: Typical Storm Sewer Inlet

Figure 6.3: Storm Sewer Inlet with CMP Flow Line

6.3.2 Drainage System 2: Central Drainage System

Drainage System 2 is a closed piping drainage system and is located in central Miller. The system consists of storm sewer inlets, storm manholes and approximately 6,500 linear feet of reinforced concrete pipe and vitrified clay pipe. The underground piping system was constructed as part of the initial storm water drainage system. City of Miller personnel have installed a pipe joining the Central and Southeast drainage systems to take pressure off the Central Drainage System. Additional piping has been installed in other areas of the Central Drainage System to improve drainage. Table 6.2 has been provided to show the capacities for the different sections of pipe throughout the system. Figures 6.4 through 6.7 illustrate deficient catch basins and piping within the system. Storm sewer calculations have been provided in Appendix E.

Table 6.2: Pipe Capacity for Central Drainage System

Section of Pipe	Pipe Size in	Pipe Capacity cfs	Slope %	Rain Event in/hr
E 4th St (E 2nd Ave - E 3rd Ave)	24	16.0	0.50%	0.69
E 2nd Ave (E 6th St - E 4th Street)	27	13.9	0.20%	0.38
W 6th St (W 1st Ave - E 2nd Ave)	30	13.0	0.10%	0.26
W 1st Avenue (W 7th Street - W 6th Street)	30	16.9	0.17%	0.33
W 7th St (W 1st Ave - W 2nd Ave)	30	28.7	0.49%	0.53
W 7th St (W 2nd Ave - Ree Creek)	36	46.7	0.49%	0.86

* Size, slope and type of pipe are an estimate from obtained data

Figure 6.4: Cracked Structure

Figure 6.5: Deficient pipe Opening

Figure 6.6: Broken Clay Tile

Figure 6.7: Inlet with CMP Invert

6.3.3 Drainage System 3: Northeast Drainage System

Drainage System 3 is a closed storm sewer system and was completed in 2000. The system conveys water from the northeast side of Miller to the northwest side of the City. The system consists of approximately 38 storm sewer inlets, 25 storm sewer manholes and approximately 8,000 linear feet of reinforced concrete pipe. Table 6.3 has been provided to show the capacities for the different sections of pipe throughout the system. The piping and inlets are in favorable condition as can be seen in Figure 6.8. Figure 6.9 illustrates an improperly installed storm sewer inlet with staggered adjusting rings. Figure 6.9 also illustrates a protruding pipe within an inlet. Storm sewer calculations have been provided in Appendix E.

Table 6.3: Pipe Capacity for Northeast Drainage System

Section of Pipe	Pipe Size in	Pipe Capacity cfs	Slope %	Rain Event in/hr
4th Street (E 3rd Avenue - E 4th Avenue)	18	4.7	0.20%	1.64
E 4th Avenue (4th Street - E 5th Street)	30	14.9	0.13%	1.16
E 4th Avenue (E 5th Street - E 7th Street)	36	24.2	0.13%	0.92
E 4th Avenue (E 7th Street - Alley)	36	24.2	0.13%	0.92
Alley (E 4th Avenue - E 3rd Avenue)	36	18.9	0.13%	0.64
E 3rd Avenue (Alley - Alley)	36	0.6	0.13%	0.64
Alley (E 3rd Avenue - E 1st Avenue)	36	32.0	0.23%	1.00
E 10th Street (E 1st Avenue - Ree Creek)	42	42.7	0.18%	0.99

* Size, type and slope of pipe obtained from previous as-built plans

Figure 6.8: Typical Storm Sewer Inlet

Figure 6.9: Improperly Installed Storm Sewer Inlet

6.3.4 Drainage System 4: Southeast Drainage System

Drainage System 4 is a closed storm sewer system which was constructed in 2001. The system consists of approximately 35 storm sewer inlets, two manholes and 3,700 feet of 24-inch reinforced concrete pipe. When constructed in 2001, a 24-inch pipe was the largest sized pipe allowed by the South Dakota Department of Transportation in the highway right-of-way. During the spring thaw and major storm events, massive amounts of flooding can occur in this area. The creek to the east can overflow its banks and flood into the City. The system is not capable of conveying the storm water away from the area which causes large amounts of flooding in the area. Table 6.4 has been provided to show the capacities for the different sections of pipe which were installed in 2001. Figure 6.10 illustrates a typical inlet within the system. Figure 6.11 illustrates a protruding pipe within an inlet. A portion of piping from East 3rd Avenue to East 5th Avenue which the City of Miller personnel connected to the system is not included in the table due to lack of available information. Its primary purpose is an overflow pipe which allows storm water to move from either system when overloaded. Storm sewer calculations have been provided in Appendix E.

Table 6.4: Pipe Capacity for Southeast Drainage System

Section of Pipe	Pipe Size in	Pipe Capacity cfs	Slope %	Rain Event in/hr
E 2nd Street (E 5th Avenue - E 7th Avenue)	24	42.1	0.18%	0.51
E 2nd Street (E 7th Avenue - E 10th Avenue)	24	42.1	0.18%	0.41
E 10th Avenue (E 2nd Street - E 3rd Street)	24	42.1	0.18%	0.35
E 3rd Street (E 8th Avenue - E 10th Avenue)	42	42.1	0.18%	2.83

* Size, type and slope of pipe obtained from previous as-built plans

Figure 6.10: Typical Storm Sewer Inlet

Figure 6.11: Protruding Pipe within Inlet

6.3.5 Drainage System 5: Additional Drainage Systems

The City of Miller has various smaller storm drainage systems in addition to the previously described larger systems. These systems consist of underground piping and inlets with various pipe types. The west side of Miller has two smaller underground piping systems on West Second Street and in the Alley between West Fifth and West Fourth Streets which convey storm water to Ree Creek. An underground storm water system on West First Avenue conveys storm water to the creek. A piping system located on West Second Avenue conveys storm water to Crystal Lake located on the northwest corner of Miller. An additional underground piping system conveys water from Second Street Southwest to the creek. The capacity of the outfall pipes has been provided in Table 6.5 for the above-listed piping systems. Figures 6.12 and 6.13 illustrate inlets located within the West Second Street storm sewer system.

Table 6.5: Pipe Capacity for Additional Drainage Systems

Location of Piping System	Pipe Size in	Outfall Pipe Capacity cfs	Slope %	Rain Event in/hr
W 2nd Street (W 2nd Avenue - Ree Creek)	12	3.6	0.50%	0.3
West Alley (W 3rd Avenue - Ree Creek)	18	7.4	0.50%	7.4
West 1st Avenue (W 7th Street - Ree Creek)	12	2.5	0.50%	0.3
W 2nd Avenue (W 5th Street - Crystal Lake)	8	1.2	0.50%	0.2
2nd Street SW (1st Avenue SE - Ree Creek)	18	10.8	0.50%	1.1

* Size and type of pipe are an estimate from obtained data

* Slope of pipe is unknown, 0.5% was used as a conservative estimate

Figure 6.12: Inlet Located in West Second Street Storm Sewer System

Figure 6.13: Inlet Located in West Second Street Storm Sewer System

7 STORM DRAINAGE ALTERNATIVES

The operating characteristics and deficiencies of the existing drainage areas that were discussed in Section 6 of this report require action by the City of Miller. The alternatives relating to the storm water systems that were evaluated to assist in the prevention and/or mitigation of the flooding problems are described below.

7.1 CAUTIONARY NOTES CONCERNING COST ESTIMATES

The opinions of probable cost provided with the following alternatives reflect the anticipated costs for administration, engineering design, construction, contingencies, construction observation, and other costs related to completion of the project. The costs as presented are based on an analysis and comparison of projects of similar size and scope. The actual construction and project costs will vary on an individual project basis. The actual bid cost will reflect the bidder's evaluation of construction problems, weather, soils and difficulty of work. Thus, the engineer cannot be held responsible for the accuracy of the estimates made in this report, as the engineer has no control over the contractors' bid costs.

Changes in materials, equipment and energy costs, as well as availability of other construction work at the time of the bid opening, could substantially influence actual project cost. Construction costs will also vary somewhat based on the quantity of items necessary to construct the project. The quantities and costs contained in this report are preliminary estimates based on our best judgment without field measurements. Final quantities and opinions of probable cost and final construction costs must be based upon final design.

Different funding sources have different requirements for some non-construction items. Therefore, actual costs of non-construction items should be considered tentative at this time and subject to later modifications and adjustments as current situations and funding sources dictate. Further, inasmuch as the period of construction cannot be accurately predicted, the costs as presented in this report have not been adjusted to reflect projected

inflation factors. Therefore, it is important that the estimate of costs as presented be reviewed and updated periodically to reflect construction cost trends.

7.2 EQUIVALENT UNIFORM ANNUAL COST

The equivalent uniform annual cost (EUAC) not only takes the capital costs into account when evaluating the options but also looks at the salvage value of the components and the expected annual operation and maintenance costs. The result is a comparison of the options on an overall basis throughout a design life. The EUAC is eliminated from consideration since the proposed improvements presented subsequently offer one viable option for each set of improvements or would only be a factor of the capital cost, as is the case of storm sewer improvements.

7.3 REPLACEMENT OF EXISTING SYSTEMS

The following Storm Water System Options propose updating previously installed storm water drainage systems. As described previously in Section 6 of this report, the existing storm drainage systems are only capable of conveying a limited precipitation event. In order to efficiently convey storm water away from the City of Miller, the existing systems will be updated to the five-year storm event, unless otherwise stated, which is utilized by most cities of similar size. New asphalt or blotter coated streets have been proposed to repair disturbed surfaces to ensure that storm water is conveyed to the gutter line which in turn will route the storm water to storm drainage inlets.

7.3.1 Replacement Option 1: Do Nothing

The first storm water system option that was considered was the “do nothing” option. Since Replacement Option 1 will not address the drainage problems experienced in the City, Replacement Option 1 is not considered as an acceptable option.

7.3.2 Replacement Option 2: West Drainage System

Replacement Option 2 proposes the installation of a new underground piping system with storm sewer inlets to replace the older existing system. The piping will also be installed to replace an existing eight-inch PVC line which experiences flooding during rain events. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage

system will consist of approximately 5,000 linear feet of reinforced concrete pipe, 32 storm sewer inlets and 15 storm sewer manholes.

The estimated project cost for the proposed system is shown in Table 7.1. A preliminary storm drainage system layout is shown in Figure 7.1. Storm sewer calculations have been provided in Appendix E.

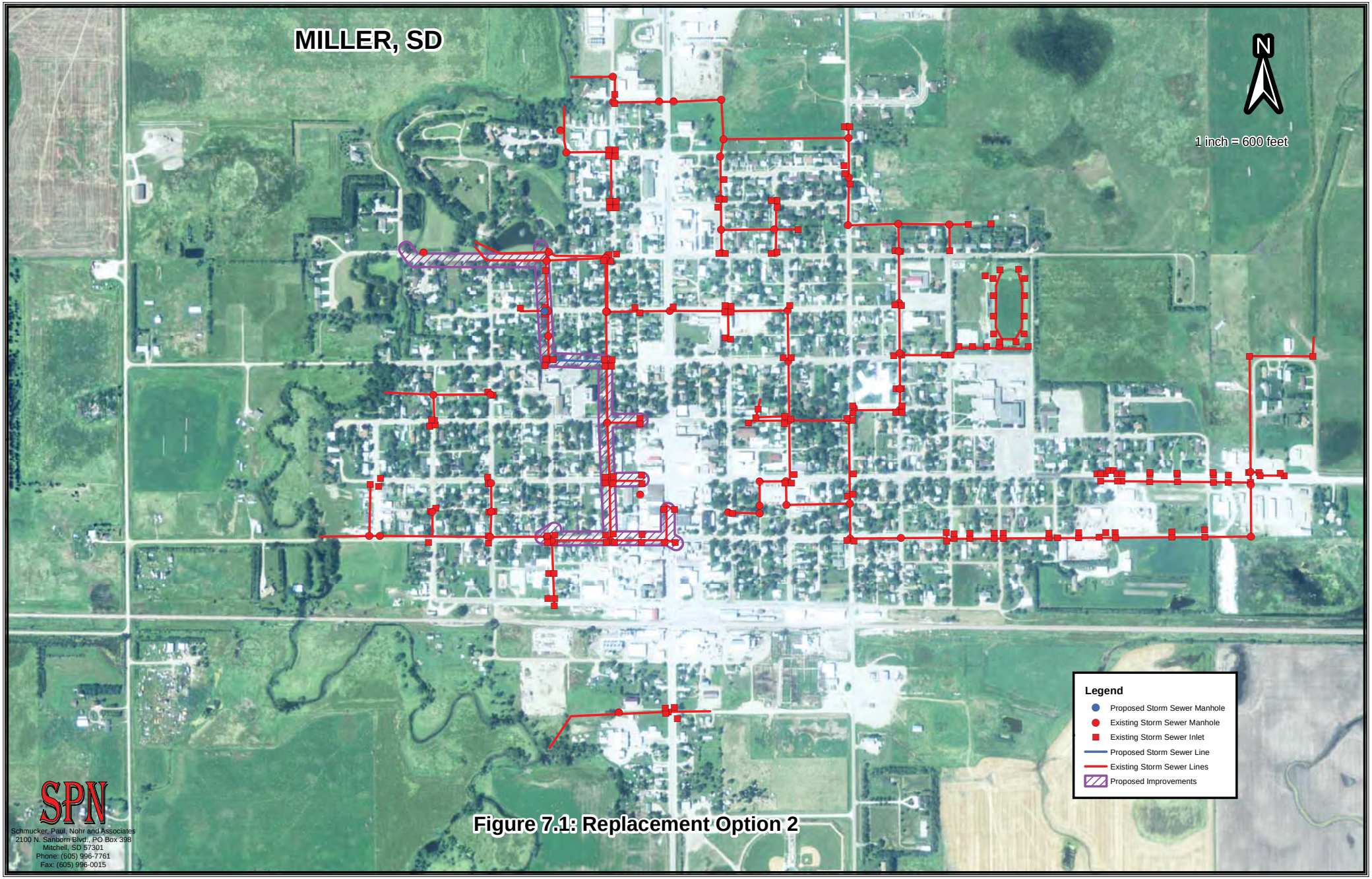


Figure 7.1: Replacement Option 2

Table 7.1: Estimated Project Cost for Replacement Option 2

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$119,000.00	$119,000.00
2	Pulverize and Salvage Existing Asphalt	23,000 SY	$3.50	$80,500.00
3	Remove and Dispose Existing Structures	47 EA	$400.00	$18,800.00
4	Remove Storm Sewer Pipe (12"-24")	1,700 LF	$25.00	$42,500.00
5	Remove Storm Sewer Pipe (27"-36")	3,200 LF	$35.00	$112,000.00
6	Storm Sewer Inlet	32 EA	$3,000.00	$96,000.00
7	Storm Sewer Manhole	15 EA	$5,000.00	$75,000.00
8	12" RCP Storm Sewer Pipe	480 LF	$50.00	$24,000.00
8	15" RCP Storm Sewer Pipe	240 LF	$60.00	$14,400.00
9	24" RCP Storm Sewer Pipe	1,080 LF	$80.00	$64,800.00
10	30" RCP Storm Sewer Pipe	230 LF	$90.00	$18,400.00
11	36" RCP Storm Sewer Pipe	430 LF	$110.00	$38,700.00
12	42" RCP Storm Sewer Pipe	860 LF	$125.00	$94,600.00
13	48" RCP Storm Sewer Pipe	450 LF	$150.00	$56,250.00
14	54" RCP Storm Sewer Pipe	1,775 LF	$200.00	$266,250.00
15	54" RCP Flared End Section	1 EA	$1,700.00	$1,700.00
16	Asphalt Surfacing	1,300 TN	$110.00	$143,000.00
17	Gravel Base Course and Surfacing	8,900 TN	$20.00	$178,000.00
18	Double Blotter Coat	16,700 SY	$8.00	$133,600.00
19	Topsoil, Seed, Fertilizer & Mulch	11,300 SY	$1.50	$16,950.00
20	Traffic Control	1 LS	$15,000.00	$15,000.00
21	Erosion Control	1 LS	$30,000.00	$30,000.00
22	Incidental Construction	1 LS	$74,000.00	$74,000.00
			Subtotal	$1,713,450.00
			Contingencies (12%)	$206,550.00
			Construction Total	$1,920,000.00
			Design Engineering	$111,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$167,000.00
			Administration and Legal	$58,000.00
			Total Project Cost	$2,261,000.00

7.3.3 Replacement Option 3: Central Drainage System

Replacement Option 3 proposes the installation of a new underground piping system with storm sewer inlets. The piping will be installed directly over the old system with inlets being placed in efficient areas to collect the storm water. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage system will consist of approximately 6,500 linear feet of reinforced concrete pipe, 26 storm sewer inlets and 18 storm sewer manholes.

A preliminary storm drainage system layout is shown in Figure 7.2. The estimated project cost for the proposed system is shown in Table 7.2. Storm sewer calculations have been provided in Appendix E.

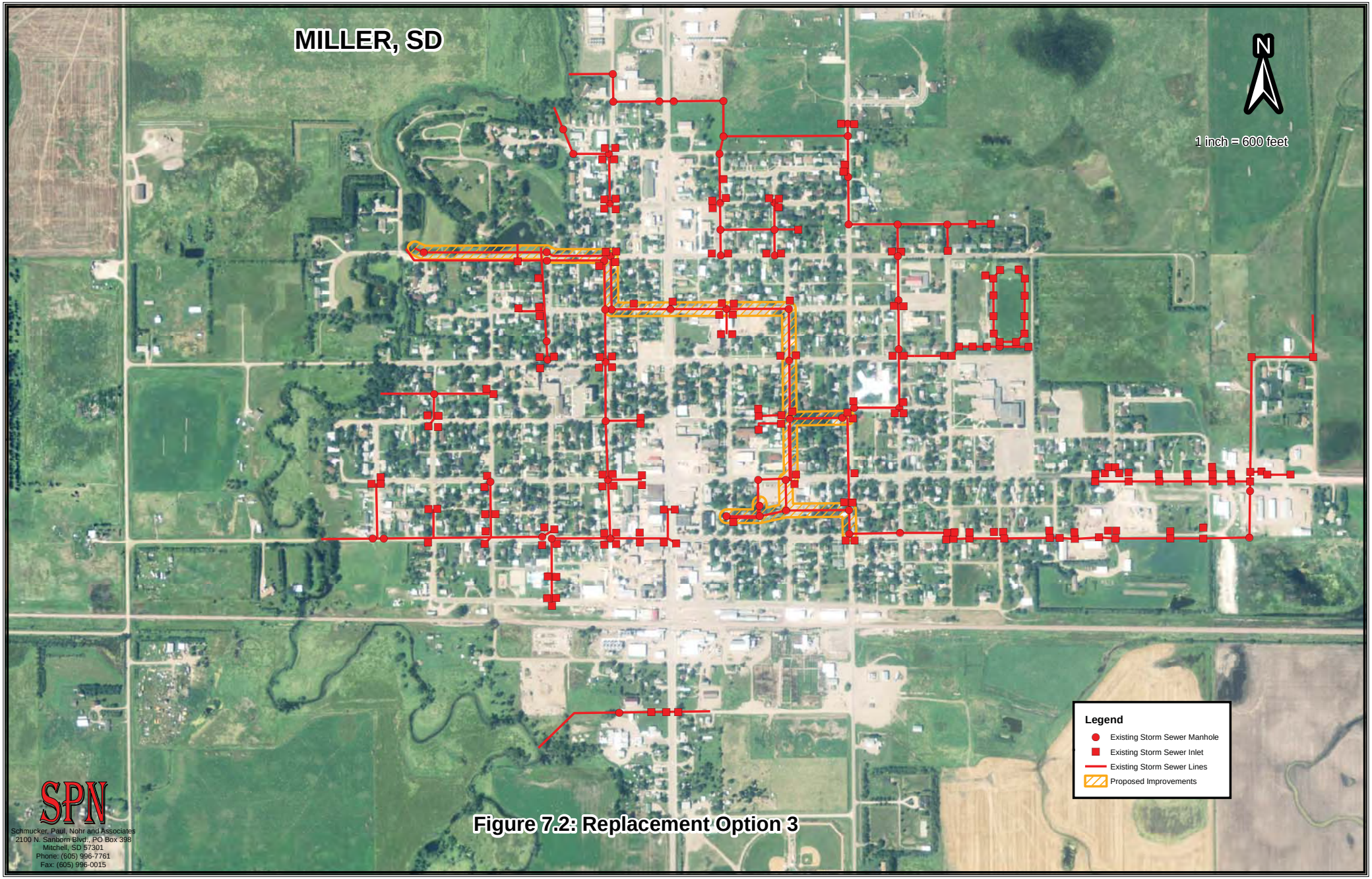


Figure 7.2: Replacement Option 3

Table 7.2: Estimated Project Cost for Replacement Option 3

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$181,000.00	$181,000.00
2	Pulverize and Salvage Existing Asphalt	18,760 SY	$3.50	$65,660.00
3	Remove and Dispose Existing Structures	50 EA	$400.00	$20,000.00
4	Remove Storm Sewer Pipe (12"-24")	2,700 LF	$25.00	$67,500.00
5	Remove Storm Sewer Pipe (27"-36")	3,900 LF	$35.00	$136,500.00
6	Storm Sewer Inlet	42 EA	$3,000.00	$126,000.00
7	Storm Sewer Manhole	18 EA	$5,000.00	$90,000.00
8	12" RCP Storm Sewer Pipe	630 LF	$50.00	$31,500.00
9	24" RCP Storm Sewer Pipe	630 LF	$80.00	$50,400.00
10	30" RCP Storm Sewer Pipe	1,350 LF	$90.00	$121,500.00
11	42" RCP Storm Sewer Pipe	450 LF	$125.00	$56,250.00
12	54" RCP Storm Sewer Pipe	1,240 LF	$200.00	$248,000.00
13	60" RCP Storm Sewer Pipe	2,600 LF	$250.00	$650,000.00
14	60" RCP Flared End Section	1 EA	$1,900.00	$1,900.00
15	Asphalt Surfacing	130 TN	$110.00	$14,300.00
16	Double Blotter Coat	18,760 SY	$8.00	$150,080.00
17	Gravel Base Course and Surfacing	8,200 TN	$20.00	$164,000.00
18	Topsoil, Seed, Fertilizer & Mulch	8,200 SY	$1.50	$12,300.00
19	Traffic Control	1 LS	$10,000.00	$10,000.00
20	Erosion Control	1 LS	$25,000.00	$25,000.00
21	Incidental Construction	1 LS	$212,000.00	$212,000.00
			Subtotal	$2,433,890.00
			Contingencies (12%)	$292,110.00
			Construction Total	$2,726,000.00
			Design Engineering	$152,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$228,000.00
			Administration and Legal	$82,000.00
			Total Project Cost	$3,193,000.00

7.3.4 Replacement Option 4A: Northeast Drainage System

Replacement Option 4A proposes the installation of a new underground piping system with inlets to replace the existing storm sewer system. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage system will consist of approximately 8,000 linear feet of reinforced concrete pipe, 36 storm sewer inlets and 24 storm sewer manholes.

A preliminary storm drainage system layout is shown in Figure 7.3. The estimated project cost for the proposed system is shown in Table 7.3. Storm sewer calculations have been provided in Appendix E.

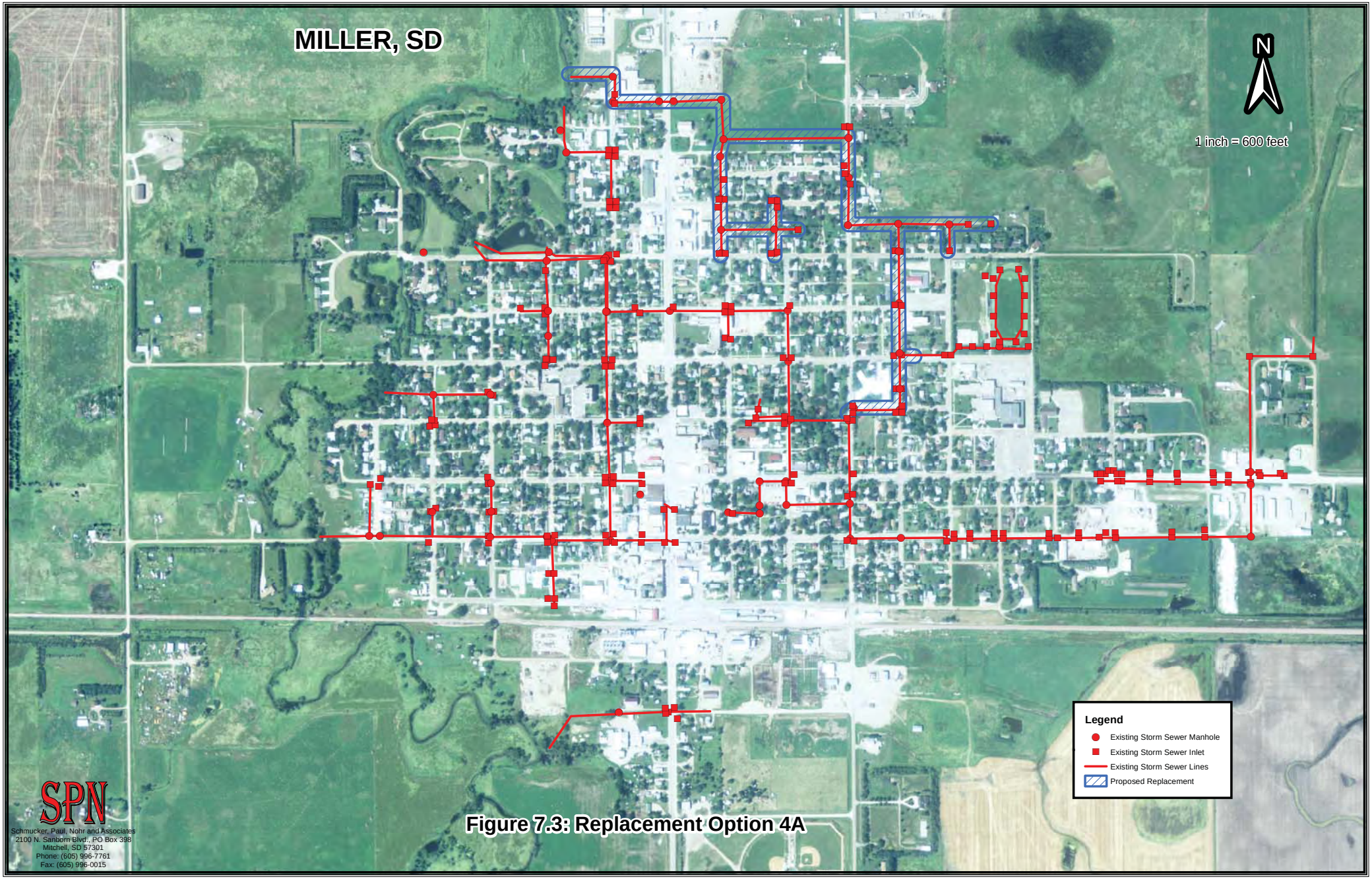


Figure 7.3: Replacement Option 4A

Table 7.3: Estimated Project Cost for Replacement Option 4A

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$198,000.00	$198,000.00
2	Pulverize and Salvage Existing Asphalt	20,400 SY	$3.50	$71,400.00
3	Remove and Dispose Existing Structures	57 EA	$400.00	$22,800.00
4	Remove Storm Sewer Pipe (12"-24")	3,570 LF	$25.00	$89,250.00
5	Remove Storm Sewer Pipe (27"-42")	4,880 LF	$35.00	$170,800.00
6	Storm Sewer Inlet	36 EA	$3,000.00	$108,000.00
7	Storm Sewer Manhole	24 EA	$5,000.00	$120,000.00
8	12" RCP Storm Sewer Pipe	540 LF	$50.00	$27,000.00
9	18" RCP Storm Sewer Pipe	262 LF	$60.00	$15,720.00
10	24" RCP Storm Sewer Pipe	2,236 LF	$80.00	$178,880.00
11	30" RCP Storm Sewer Pipe	402 LF	$90.00	$36,180.00
12	36" RCP Storm Sewer Pipe	665 LF	$110.00	$73,150.00
13	42" RCP Storm Sewer Pipe	411 LF	$125.00	$51,375.00
14	54" RCP Storm Sewer Pipe	957 LF	$200.00	$191,400.00
15	60" RCP Storm Sewer Pipe	3,510 LF	$250.00	$877,500.00
16	60" RCP Flared End Section	1 EA	$1,900.00	$1,900.00
17	Asphalt Surfacing	200 TN	$110.00	$22,000.00
18	Double Blotter Coat	20,400 SY	$8.00	$163,200.00
19	Gravel Base Course and Surfacing	11,300 TN	$20.00	$226,000.00
20	Topsoil, Seed, Fertilizer & Mulch	18,800 SY	$1.50	$28,200.00
21	Traffic Control	1 LS	$15,000.00	$15,000.00
22	Erosion Control	1 LS	$50,000.00	$50,000.00
23	Incidental Construction	1 LS	$124,000.00	$124,000.00
			Subtotal	$2,861,755.00
			Contingencies (12%)	$344,245.00
			Construction Total	$3,206,000.00
			Design Engineering	$177,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$266,000.00
			Administration and Legal	$97,000.00
			Total Project Cost	$3,751,000.00

7.3.5 Replacement Option 4B: Northeast Drainage System Extension

Option 4B proposes extending a storm sewer line to a proposed development to the northeast of the West First Avenue and West Tenth Street intersection. An existing drainage ditch would be utilized to channel flow to a 24-inch reinforced concrete pipe to an existing 42-inch reinforced concrete pipe and a proposed 60-inch reinforced concrete pipe which would be installed parallel to the 42-inch pipe. The system will be designed to convey a 3.1-inch-per-hour rain event. The estimated project cost for the proposed system is shown in Table 7.4. A preliminary storm drainage system layout is shown in Figure 7.4. Storm sewer calculations have been provided in Appendix E.

Table 7.4: Estimated Project Cost for Option 4B

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$54,000.00	$54,000.00
2	Pulverize and Salvage Existing Asphalt	1,600 SY	$3.50	$5,600.00
3	Remove and Dispose Existing Structures	5 EA	$400.00	$2,000.00
4	Remove Storm Sewer Pipe (27"-42")	1,250 LF	$35.00	$43,750.00
5	10' x 5' Box	6 EA	$7,500.00	$45,000.00
6	24" RCP Storm Sewer Pipe	550 LF	$80.00	$44,000.00
7	60" RCP Storm Sewer Pipe	1,250 LF	$250.00	$312,500.00
8	60" RCP Flared End Section	1 EA	$1,900.00	$1,900.00
9	Bore 60" RCP Storm Pipe	120 LF	$650.00	$78,000.00
10	Double Blotter Coat	1,600 SY	$8.00	$12,800.00
11	Gravel Base Course and Surfacing	1,800 TN	$20.00	$36,000.00
12	Topsoil, Seed, Fertilizer & Mulch	5,200 SY	$1.50	$7,800.00
13	Traffic Control	1 LS	$1,500.00	$1,500.00
14	Erosion Control	1 LS	$6,000.00	$6,000.00
15	Incidental Construction	1 LS	$30,000.00	$30,000.00
			Subtotal	$680,850.00
			Contingencies (12%)	$82,150.00
			Construction Total	$763,000.00
			Design Engineering	$52,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$78,000.00
			Administration and Legal	$23,000.00
			Total Project Cost	$921,000.00

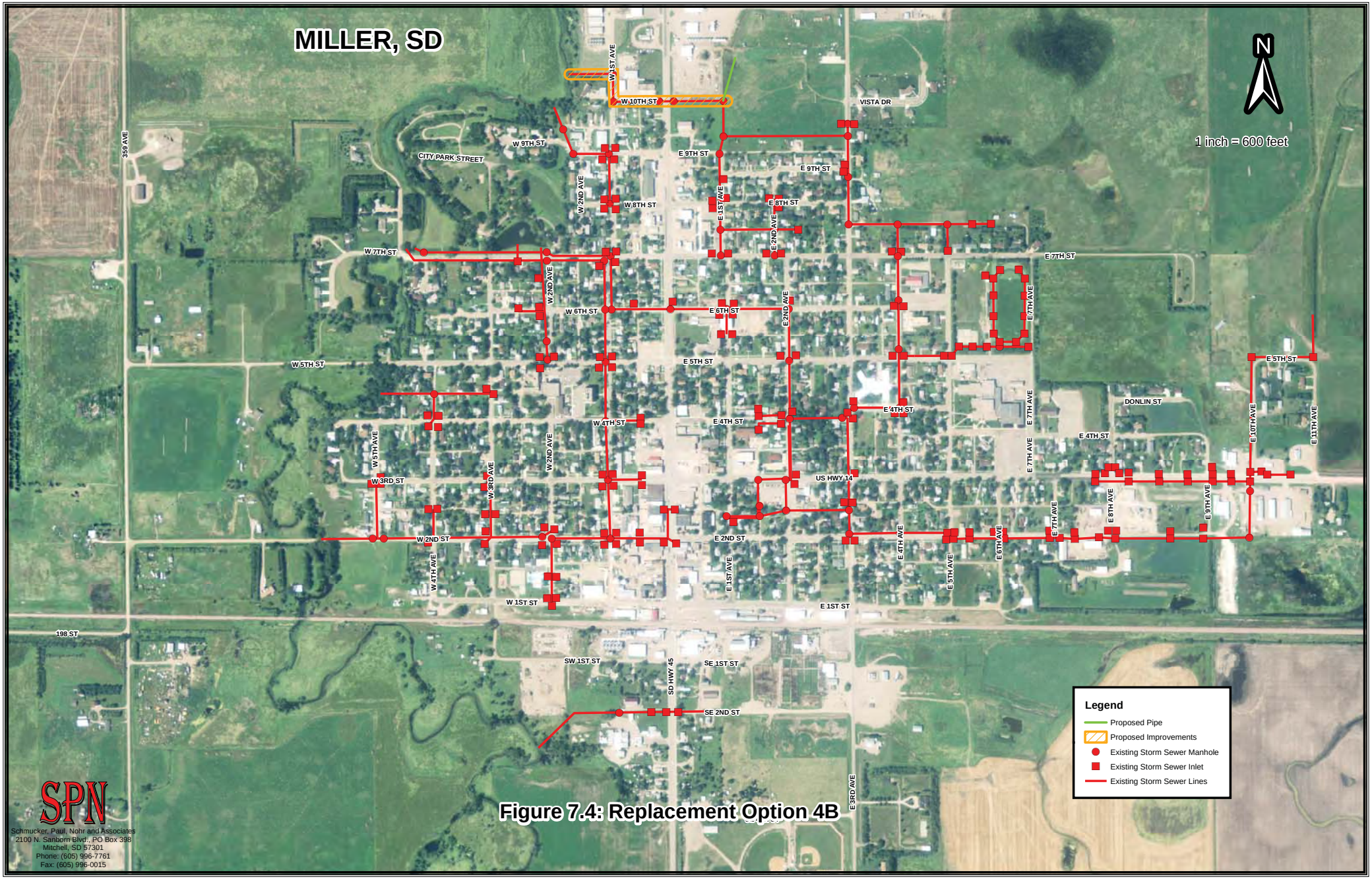


Figure 7.4: Replacement Option 4B

SPN
Schmucker, Paul, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 398
Mitchell, SD 57301
Phone: (605) 996-7761
Fax: (605) 996-0015

7.3.6 Replacement Option 5: Southeast Drainage System

Replacement Option 5 evaluates upgrading the Southeast Drainage System. A portion of the drainage system lies under US Highway 14. Generally, construction through US and SD highways are avoided due to high costs and permits. The previously installed system was only capable of conveying a 1.67-inch-per-hour storm event due to limitations of the Department of Transportation storm sewer piping. However, since a 1.67-inch-per-hour storm event is less than the target 3.1 inch-per-hour storm event, the option discussed will show the cost for maximizing the efficiency to update the entire system to convey a 3.1-inch-per-hour event.

Replacement Option 5 proposes the installation of a new underground piping system with inlets. The improvements would be designed to convey a 3.1-inch-per-hour rain event. Ditch shaping has been proposed to reduce the likelihood of storm water from reaching the City from the creek through a 36-inch reinforced concrete pipe located just to the east of the City under the railroad tracks. An area inlet will be added at the intersection of Second Street and East Tenth Avenue to catch storm water routed by the ditching to the storm piping system. From this intersection to the north, a dual piping system will be utilized to provide the needed capacity generated from the additional storm water. The drainage system will consist of approximately 6,500 linear feet of reinforced concrete pipe, 22 storm sewer inlets, nine storm sewer manholes and 4,000 linear feet of ditch shaping.

A preliminary storm drainage system layout is shown in Figure 7.5. The estimated project cost for the proposed system is shown in Table 7.5. Storm sewer calculations have been provided in Appendix E.

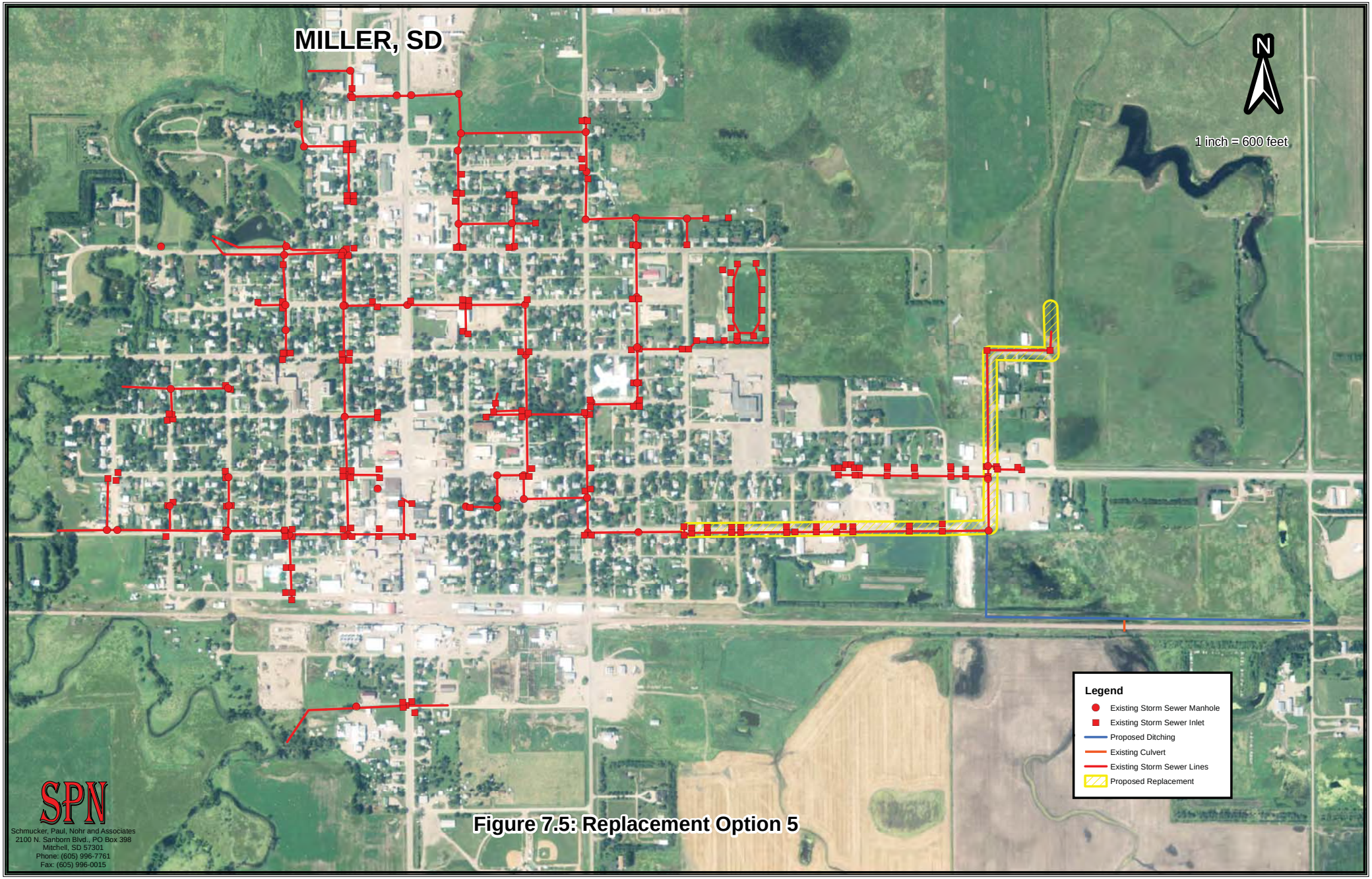


Figure 7.5: Replacement Option 5

Table 7.5: Estimated Project Cost for Replacement Option 5

1	Mobilization	1	LS	$134,000.00	$134,000.00
2	Pulverize and Salvage Existing Asphalt	6,400	SY	$3.50	$22,400.00
3	Remove and Dispose Existing Structures	25	EA	$400.00	$10,000.00
4	Remove Storm Sewer Pipe (12"-24")	3,400	LF	$25.00	$85,000.00
5	Remove Storm Sewer Pipe (27"-42")	1,500	LF	$35.00	$52,500.00
6	Storm Sewer Inlet	22	EA	$3,000.00	$66,000.00
7	Storm Sewer Manhole	9	EA	$5,000.00	$45,000.00
8	12" RCP Storm Sewer Pipe	440	LF	$50.00	$22,000.00
9	24" RCP Storm Sewer Pipe	700	LF	$80.00	$56,000.00
10	18" RCP Storm Sewer Pipe	38	LF	$70.00	$2,660.00
11	30" RCP Storm Sewer Pipe	54	LF	$90.00	$4,860.00
12	36" RCP Storm Sewer Pipe	50	LF	$110.00	$5,500.00
13	42" RCP Storm Sewer Pipe	354	LF	$125.00	$44,250.00
14	48" RCP Storm Sewer Pipe	810	LF	$150.00	$121,500.00
15	54" RCP Storm Sewer Pipe	1,000	LF	$200.00	$200,000.00
16	Dual 48" RCP Storm Sewer Pipe	2,100	LF	$290.00	$609,000.00
17	Dual 48" RCP Flared End Sections	2	EA	$3,000.00	$6,000.00
18	Dual 48" RCP Bore	100	LF	$650.00	$65,000.00
19	Double Blotter Coat	6,400	SY	$8.00	$51,200.00
20	Gravel Base Course and Surfacing	7,400	TN	$20.00	$148,000.00
21	Ditch Shaping	4,000	LF	$3.50	$14,000.00
22	Topsoil, Seed, Fertilizer & Mulch	12,400	SY	$1.50	$18,600.00
23	Traffic Control	1	LS	$9,000.00	$9,000.00
24	Erosion Control	1	LS	$33,000.00	$33,000.00
25	Incidental Construction	1	LS	$182,000.00	$182,000.00
				Subtotal	$2,007,470.00
				Contingencies (12%)	$241,530.00
				Construction Total	$2,249,000.00
				Design Engineering	$128,000.00
				Bidding and Contract Documents	$5,000.00
				Construction Engineering	$192,000.00
				Administration and Legal	$68,000.00
				Total Project Cost	$2,642,000.00

7.3.7 Replacement Option 6: West Second Street Drainage System

Replacement Option 6 proposes the installation of a new underground piping system with inlets. The system will be designed to convey a 3.1-inch-per-hour rain event. The system has been rerouted in order to accommodate the proposed sanitary sewer installation on East First Street and West Third Avenue. The drainage system will consist of approximately 3,800 linear feet of reinforced concrete pipe, 18 storm sewer inlets and seven storm sewer manholes. A preliminary storm drainage system layout is shown in Figure 7.6. The estimated project cost for the proposed system is shown in Table 7.6. Storm sewer calculations have been provided in Appendix E.

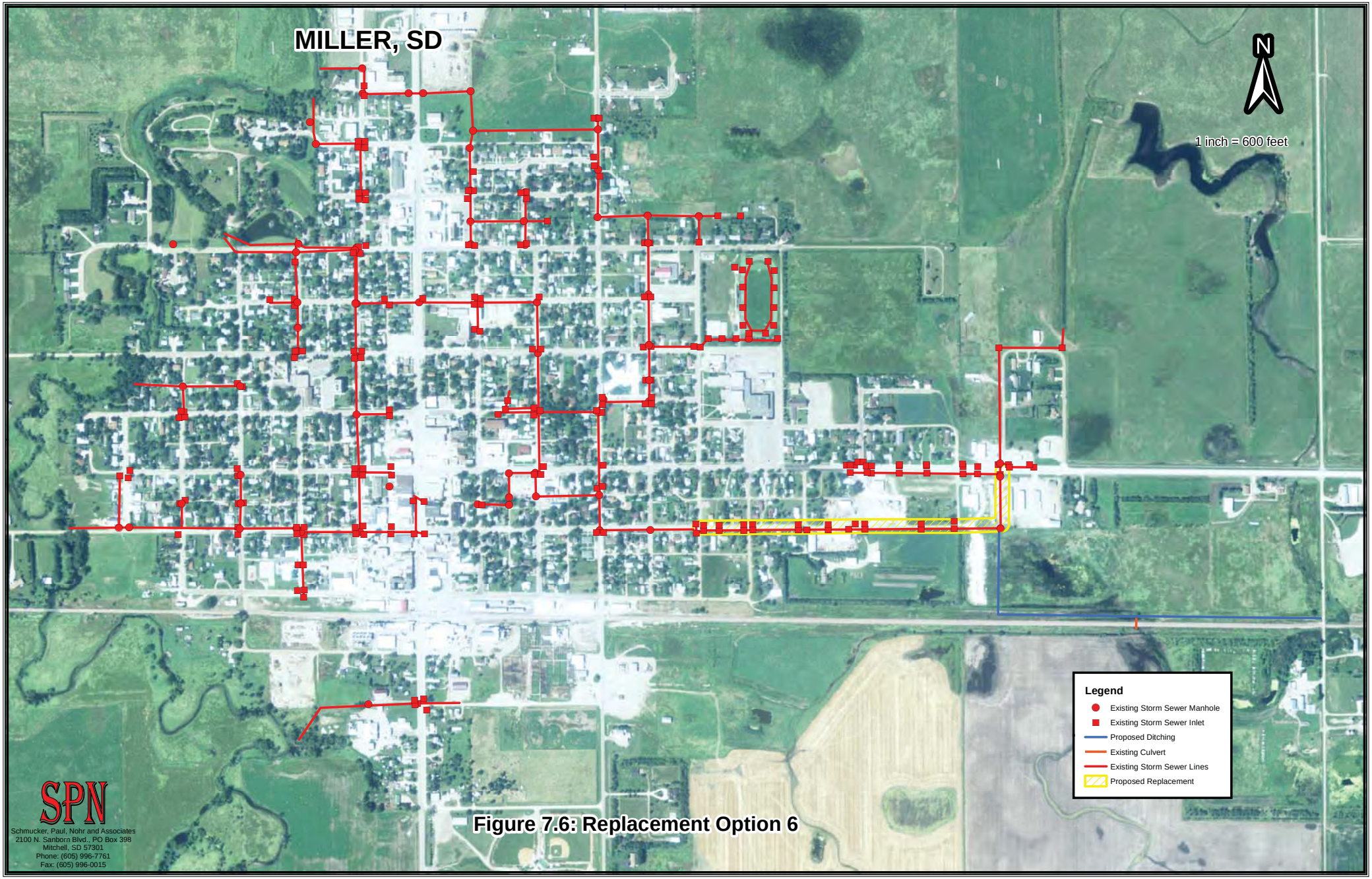


Figure 7.6: Replacement Option 6

Table 7.6: Estimated Project Cost for Replacement Option 6

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$82,000.00	$82,000.00
2	Remove Asphalt Surfacing	14,100 SY	$3.00	$42,300.00
3	Remove Storm Sewer Pipe (12"-24")	3,795 LF	$20.00	$75,900.00
4	Storm Sewer Inlet	18 EA	$3,000.00	$54,000.00
5	Storm Sewer Manhole	7 EA	$5,000.00	$35,000.00
6	12" RCP Storm Sewer Pipe	270 LF	$50.00	$13,500.00
7	15" RCP Storm Sewer Pipe	600 LF	$60.00	$36,000.00
8	18" RCP Storm Sewer Pipe	200 LF	$70.00	$14,000.00
9	24" RCP Storm Sewer Pipe	200 LF	$80.00	$16,000.00
10	30" RCP Storm Sewer Pipe	900 LF	$90.00	$81,000.00
11	36" RCP Storm Sewer Pipe	475 LF	$110.00	$52,250.00
12	42" RCP Storm Sewer Pipe	1,150 LF	$125.00	$143,750.00
13	42" RCP Flared End Section	1 EA	$1,400.00	$1,400.00
14	Double Blotter Coat	14,100 SY	$8.00	$112,800.00
15	Gravel Base Course and Surfacing	6,200 TN	$20.00	$124,000.00
16	Topsoil, Seed, Fertilizer & Mulch	7,900 SY	$1.50	$11,850.00
17	Traffic Control	1 LS	$9,000.00	$9,000.00
18	Erosion Control	1 LS	$25,000.00	$25,000.00
19	Incidental Construction	1 LS	$98,000.00	$98,000.00
			Subtotal	$1,027,750.00
			Contingencies (15%)	$154,250.00
			Construction Total	$1,182,000.00
			Design Engineering	$73,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$110,000.00
			Administration and Legal	$36,000.00
			Total Project Cost	$1,406,000.00

7.3.8 Replacement Option 7: West Alley Drainage System

Replacement Option 7 proposes the installation of a new underground piping system with inlets. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage system will consist of approximately 1,100 linear feet of reinforced concrete pipe, six storm sewer inlets and three storm sewer manholes.

The estimated project cost for the proposed system is shown in Table 7.7. A preliminary storm drainage system layout is shown in Figure 7.7. Storm sewer calculations have been provided in Appendix E.

Table 7.7: Estimated Project Cost for Replacement Option 7

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$21,000.00	$21,000.00
2	Remove Asphalt Surfacing	3,200 SY	$3.00	$9,600.00
3	Storm Sewer Inlet	6 EA	$3,000.00	$18,000.00
4	Storm Sewer Manhole	3 EA	$5,000.00	$15,000.00
5	12" RCP Storm Sewer Pipe	72 LF	$50.00	$3,600.00
6	24" RCP Storm Sewer Pipe	200 LF	$80.00	$16,000.00
7	30" RCP Storm Sewer Pipe	400 LF	$90.00	$36,000.00
8	36" RCP Storm Sewer Pipe	400 LF	$110.00	$44,000.00
9	36" RCP Flared End Section	1 EA	$1,200.00	$1,200.00
10	Double Blotter Coat	3,200 SY	$8.00	$25,600.00
11	Gravel Base Course and Surfacing	1,400 TN	$20.00	$28,000.00
12	Topsoil, Seed, Fertilizer & Mulch	2,300 SY	$1.50	$3,450.00
13	Traffic Control	1 LS	$3,000.00	$3,000.00
14	Erosion Control	1 LS	$7,000.00	$7,000.00
15	Incidental Construction	1 LS	$25,000.00	$25,000.00
			Subtotal	$256,450.00
			Contingencies (15%)	$38,550.00
			Construction Total	$295,000.00
			Design Engineering	$24,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$36,000.00
			Administration and Legal	$9,000.00
			Total Project Cost	$369,000.00

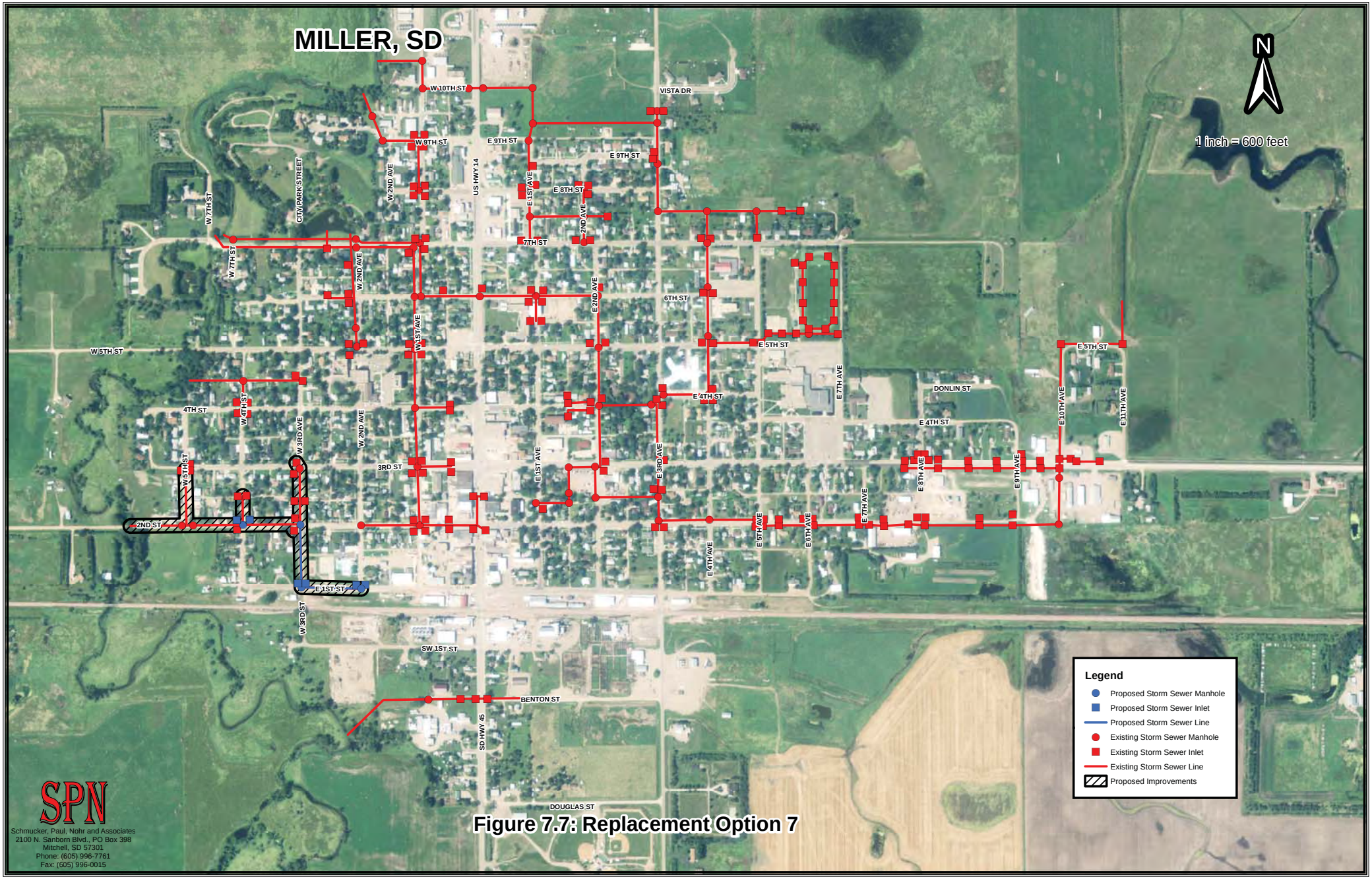


Figure 7.7: Replacement Option 7

SPN
Schmucker, Paul, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 398
Mitchell, SD 57301
Phone: (605) 996-7761
Fax: (605) 996-0015

7.3.9 Replacement Option 8: West First Avenue Drainage System

Replacement Option 8 proposes the installation of a new underground piping system with inlets. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage system will consist of approximately 1,000 linear feet of reinforced concrete pipe, eight storm sewer inlets and three storm sewer manholes.

The estimated project cost for the proposed system is shown in Table 7.8. A preliminary storm drainage system layout is shown in Figure 7.8. Storm sewer calculations have been provided in Appendix E.

Table 7.8: Estimated Project Cost for Replacement Option 8

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$21,000.00	$21,000.00
2	Remove Asphalt Surfacing	3,200 SY	$3.00	$9,600.00
3	Storm Sewer Inlet	8 EA	$3,000.00	$24,000.00
4	Storm Sewer Manhole	3 EA	$5,000.00	$15,000.00
5	12" RCP Storm Sewer Pipe	96 LF	$50.00	$4,800.00
6	30" RCP Storm Sewer Pipe	1,000 LF	$90.00	$90,000.00
7	30" RCP Flared End Section	1 EA	$1,100.00	$1,100.00
8	Double Blotter Coat	3,200 SY	$8.00	$25,600.00
9	Gravel Base Course and Surfacing	1,400 TN	$20.00	$28,000.00
10	Topsoil, Seed, Fertilizer & Mulch	2,300 SY	$1.50	$3,450.00
11	Traffic Control	1 LS	$3,000.00	$3,000.00
12	Erosion Control	1 LS	$7,000.00	$7,000.00
13	Incidental Construction	1 LS	$25,000.00	$25,000.00
			Subtotal	$257,550.00
			Contingencies (15%)	$39,450.00
			Construction Total	$297,000.00
			Design Engineering	$24,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$36,000.00
			Administration and Legal	$9,000.00
			Total Project Cost	$371,000.00

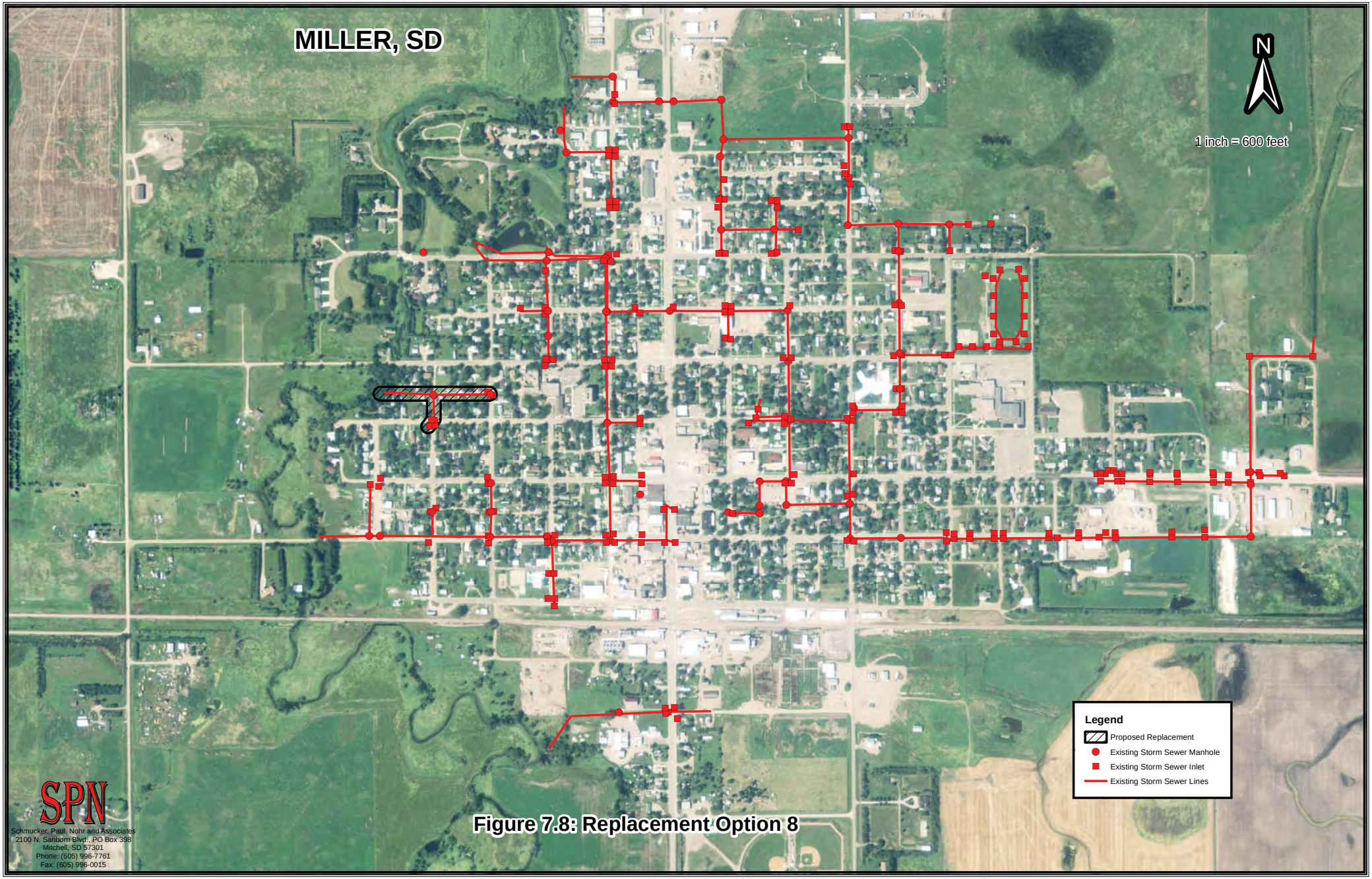


Figure 7.8: Replacement Option 8

7.3.10 Replacement Option 9: Second Street Southwest Drainage System

Replacement Option 9 proposes the installation of a new underground piping system with inlets. The system will be designed to convey a 3.1-inch-per-hour rain event. The drainage system will consist of approximately 1,250 linear feet of reinforced concrete pipe, four storm sewer inlets and three storm sewer manholes. The estimated project cost for the proposed system is shown in Table 7.9. A preliminary storm drainage system layout is shown in Figure 7.9. Storm sewer calculations have been provided in Appendix E.

Table 7.9: Estimated Project Cost for Replacement Option 9

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$18,000.00	$18,000.00
2	Remove Asphalt Surfacing	700 SY	$3.00	$2,100.00
3	Storm Sewer Inlet	4 EA	$3,000.00	$12,000.00
4	Storm Sewer Manhole	3 EA	$5,000.00	$15,000.00
5	12" RCP Storm Sewer Pipe	48 LF	$50.00	$2,400.00
6	30" RCP Storm Sewer Pipe	1,200 LF	$90.00	$108,000.00
7	30" Flared End Section	1 EA	$1,100.00	$1,100.00
8	Asphalt Surfacing	200 TN	$110.00	$22,000.00
9	Gravel Base Course and Surfacing	300 TN	$20.00	$6,000.00
10	Topsoil, Seed, Fertilizer & Mulch	2,700 SY	$1.50	$4,050.00
11	Traffic Control	1 LS	$2,000.00	$2,000.00
12	Erosion Control	1 LS	$6,000.00	$6,000.00
13	Incidental Construction	1 LS	$21,000.00	$21,000.00
			Subtotal	$219,650.00
			Contingencies (15%)	$33,350.00
			Construction Total	$253,000.00
			Design Engineering	$22,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$33,000.00
			Administration and Legal	$8,000.00
			Total Project Cost	$321,000.00

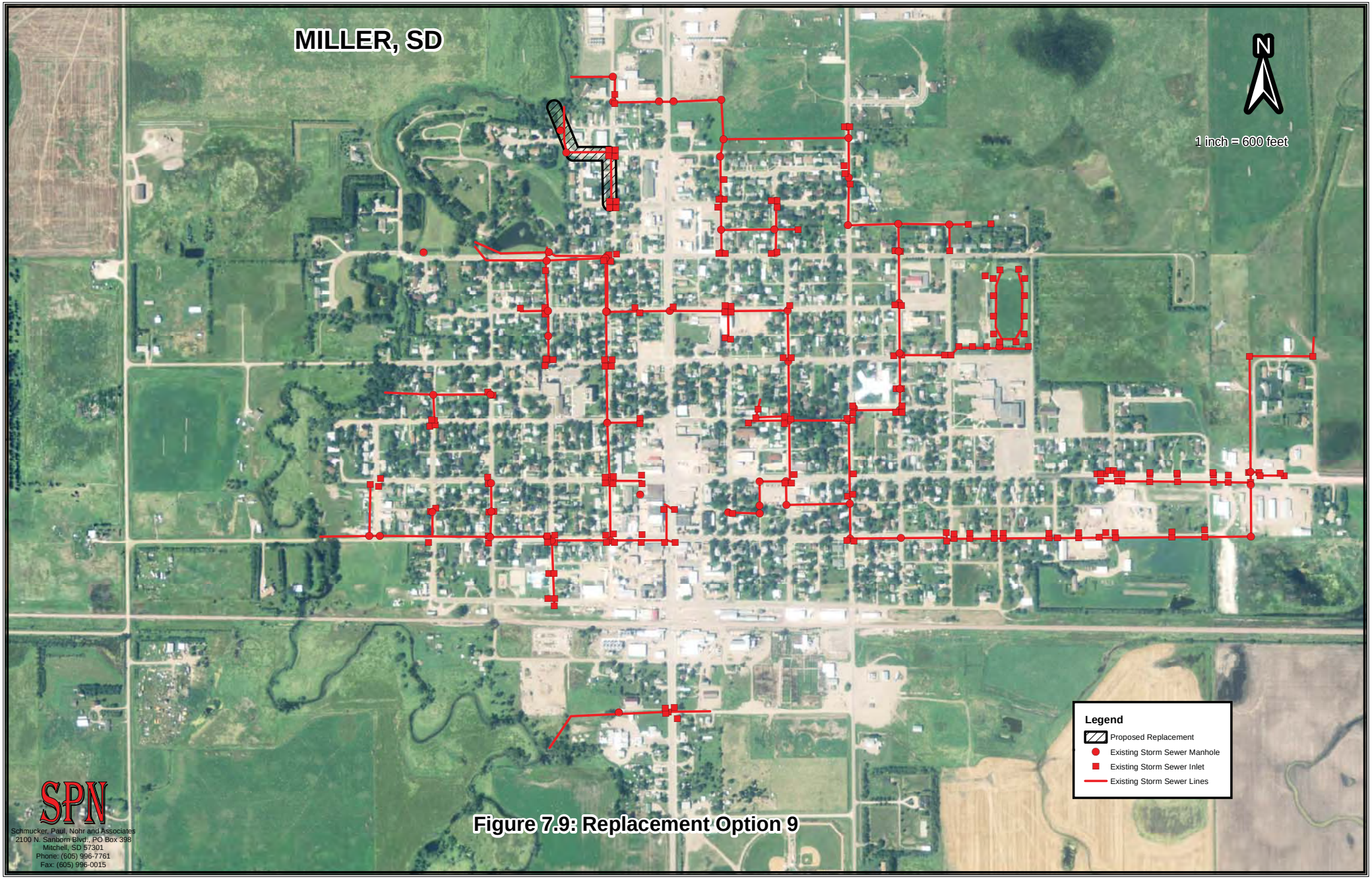


Figure 7.9: Replacement Option 9

7.3.11 Replacement Option 10: Spot Repairs

Replacement Option 10 proposes replacing inlets and sections of pipe found to be deficient and in need of replacement during the cleaning and televising completed in 2015. The estimated project cost for the proposed improvements is shown in Table 7.10.

Table 7.10: Estimated Project Cost for Replacement Option 10

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$10,000.00	$10,000.00
2	Pulverize and Salvage Existing Asphalt	350 SY	$3.50	$1,225.00
3	Remove and Dispose Existing Structures	10 EA	$400.00	$4,000.00
4	Storm Sewer Inlet - Spot Repairs	16 EA	$3,500.00	$56,000.00
5	Connect to Existing Storm Pipe - Spot Repairs	10 EA	$1,500.00	$15,000.00
6	New Storm Sewer Casting	2 EA	$500.00	$1,000.00
7	Storm Sewer Pipe - Spot Repairs	70 LF	$75.00	$5,250.00
8	12" RCP Storm Sewer Pipe	70 LF	$50.00	$3,500.00
9	Asphalt Surfacing	70 TN	$110.00	$7,700.00
10	Gravel Base Course and Surfacing	200 TN	$20.00	$4,000.00
11	Topsoil, Seed, Fertilizer & Mulch	400 SY	$1.50	$600.00
12	Traffic Control	1 LS	$2,500.00	$2,500.00
13	Erosion Control	1 LS	$1,000.00	$1,000.00
14	Incidental Construction	1 LS	$10,000.00	$10,000.00
			Subtotal	$121,775.00
			Contingencies (12%)	$15,225.00
			Construction Total	$137,000.00
			Design Engineering	$13,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$20,000.00
			Administration and Legal	$5,000.00
			Total Project Cost	$180,000.00

7.3.12 Replacement Option 11: Phased Storm Sewer Improvements

The City of Miller plans to complete the storm sewer improvements in conjunction with the proposed water and sanitary sewer improvements. For this reason, the replacement options need to be customized to accommodate the priorities of the water and sanitary sewer improvements.

7.3.12.1 Storm Sewer Improvements Phase 1

Phase 1 proposes updating the Central Drainage Storm Sewer System from East Third Street to the south. The storm sewer improvements would be coordinated with water and sewer improvements also being completed in the area. The downstream piping will remain undersized until replaced as part of a Phase 2 project. Phase 1 improvements will also include extending storm sewer piping to a proposed development located northeast of the SD Highway 45 and West 10th Street intersection as proposed in Replacement Option 4B. A preliminary storm drainage system layout is shown in Figure 7.10. The estimated project cost for the proposed system is shown in Table 7.11.

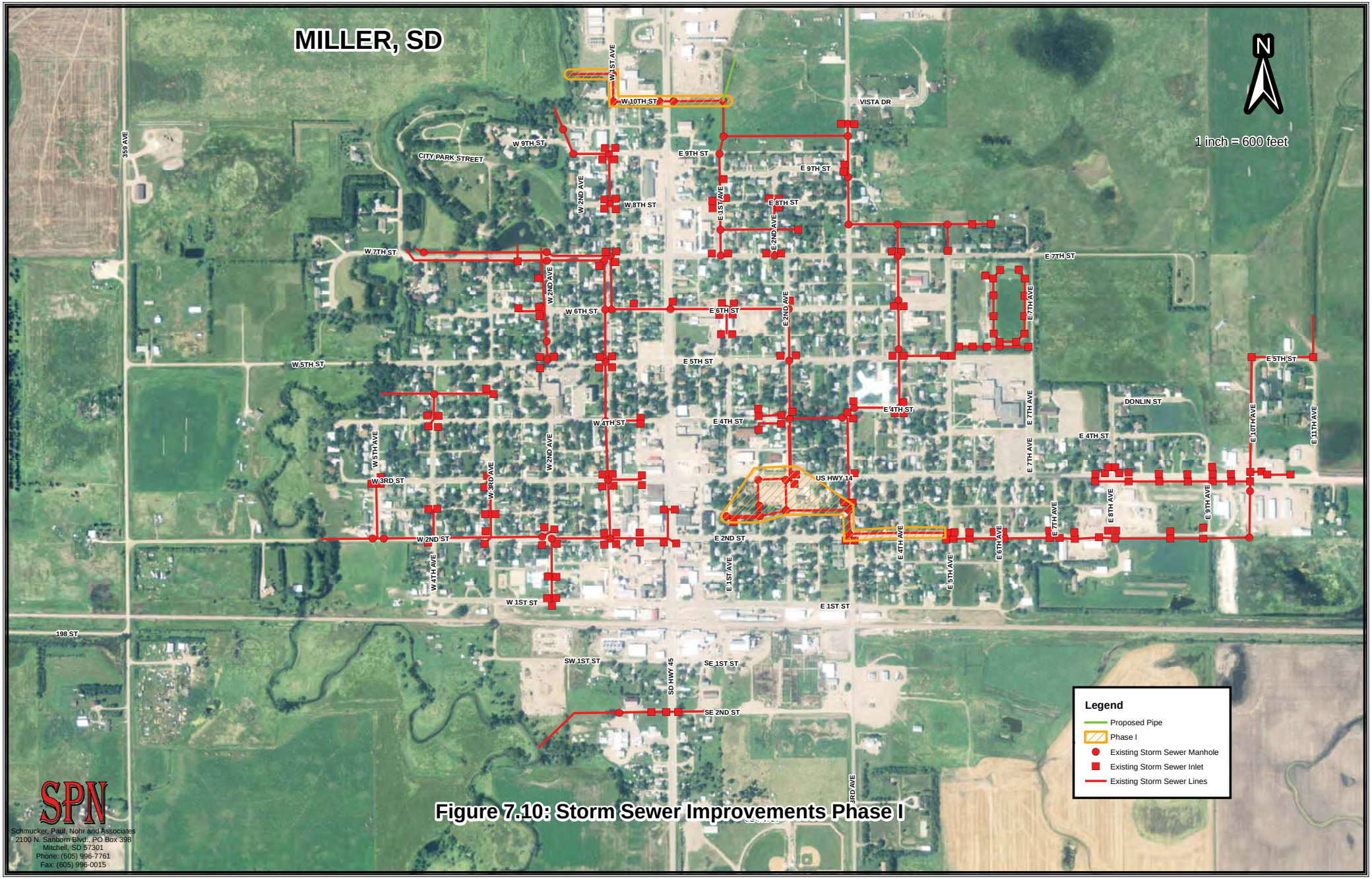


Figure 7.10: Storm Sewer Improvements Phase I

SPN
Schmucker, Paul, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 398
Mitchell, SD 57301
Phone: (605) 996-7761
Fax: (605) 996-0015

Table 7.11: Estimated Project Cost for Storm Sewer Phase 1

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$65,000.00	$65,000.00
2	Pulverize and Salvage Existing Asphalt	7,670 SY	$3.50	$26,845.00
3	Remove and Dispose Existing Structures	10 EA	$400.00	$4,000.00
4	Remove Storm Sewer Pipe (12"-24")	2,050 LF	$25.00	$51,250.00
5	Storm Sewer Inlet	22 EA	$3,000.00	$66,000.00
6	Storm Sewer Inlet - Spot Repairs	16 EA	$3,500.00	$56,000.00
7	Connect to Existing Storm Pipe - Spot Repairs	10 EA	$1,500.00	$15,000.00
8	New Storm Sewer Casting	2 EA	$500.00	$1,000.00
9	Storm Sewer Manhole	12 EA	$5,000.00	$60,000.00
10	Storm Sewer Pipe - Spot Repairs	70 LF	$75.00	$5,250.00
11	12" RCP Storm Sewer Pipe	422 LF	$50.00	$21,100.00
12	24" RCP Storm Sewer Pipe	700 LF	$80.00	$56,000.00
13	30" RCP Storm Sewer Pipe	1,350 LF	$90.00	$121,500.00
14	Asphalt Surfacing	200 TN	$110.00	$22,000.00
15	Double Blotter Coat	7,670 SY	$8.00	$61,360.00
16	Gravel Base Course and Surfacing	3,650 TN	$20.00	$73,000.00
17	Topsoil, Seed, Fertilizer & Mulch	4,600 SY	$1.50	$6,900.00
18	Traffic Control	1 LS	$2,500.00	$2,500.00
19	Erosion Control	1 LS	$7,000.00	$7,000.00
20	Incidental Construction	1 LS	$48,000.00	$48,000.00
			Subtotal	$769,705.00
			Contingencies (12%)	$93,295.00
			Construction Total	$863,000.00
			Design Engineering	$57,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$86,000.00
			Administration and Legal	$26,000.00
			Total Project Cost	$1,037,000.00

7.3.12.2 Storm Sewer Improvements Phase 2

Phase 2 proposes completing the Central Drainage System as described in Replacement Option 3. The storm sewer improvements would be coordinated with water and sewer improvements also being completed in the area. Due to the planned sanitary sewer improvements proposed storm sewer improvements will be completed on East 2nd Street from East 5th Avenue to East 6th Avenue. The downstream piping will remain undersized until replaced as part of a Phase 3 project. A preliminary storm drainage system layout is shown in Figure 7.11. The estimated project cost for the proposed system is shown in Table 7.12.

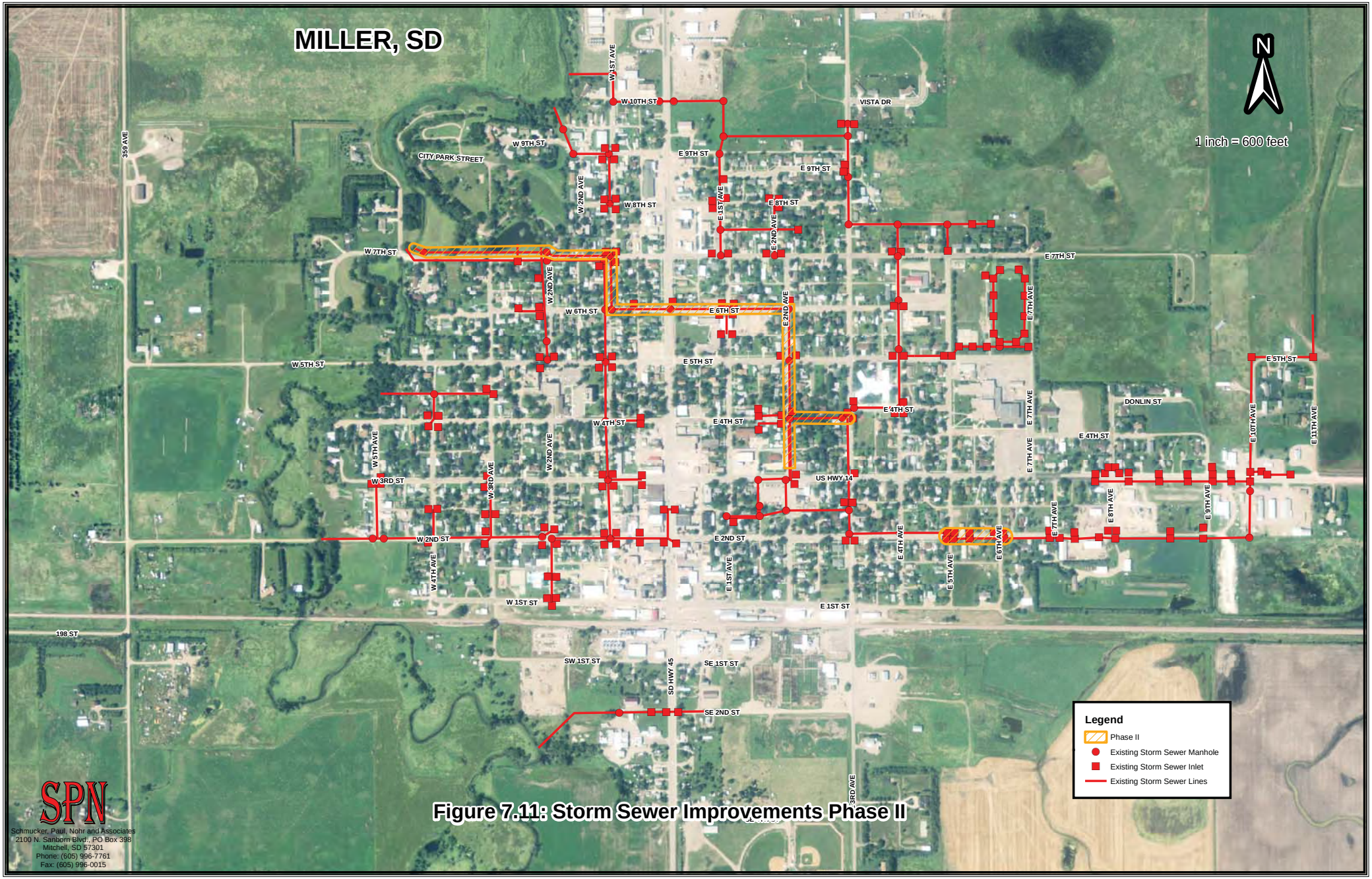


Figure 7.11: Storm Sewer Improvements Phase II

Table 7.12: Estimated Project Cost for Storm Sewer Phase 2

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$149,000.00	$149,000.00
2	Pulverize and Salvage Existing Asphalt	14,760 SY	$3.50	$51,660.00
3	Remove and Dispose Existing Structures	47 EA	$400.00	$18,800.00
4	Remove Storm Sewer Pipe (12"-24")	2,476 LF	$25.00	$61,900.00
5	Remove Storm Sewer Pipe (27"-36")	3,900 LF	$35.00	$136,500.00
6	Storm Sewer Inlet	42 EA	$3,000.00	$126,000.00
7	Storm Sewer Manhole	18 EA	$5,000.00	$90,000.00
8	12" RCP Storm Sewer Pipe	630 LF	$50.00	$31,500.00
9	18" RCP Storm Sewer Pipe	38 LF	$70.00	$2,660.00
10	24" RCP Storm Sewer Pipe	630 LF	$80.00	$50,400.00
11	30" RCP Storm Sewer Pipe	54 LF	$90.00	$4,860.00
12	36" RCP Storm Sewer Pipe	50 LF	$110.00	$5,500.00
13	42" RCP Storm Sewer Pipe	804 LF	$125.00	$100,500.00
14	54" RCP Storm Sewer Pipe	1,240 LF	$200.00	$248,000.00
15	60" RCP Storm Sewer Pipe	2,600 LF	$250.00	$650,000.00
16	60" RCP Flared End Section	1 EA	$1,900.00	$1,900.00
17	Asphalt Surfacing	200 TN	$110.00	$22,000.00
18	Double Blotter Coat	14,760 SY	$8.00	$118,080.00
19	Gravel Base Course and Surfacing	6,500 TN	$20.00	$130,000.00
20	Topsoil, Seed, Fertilizer & Mulch	6,200 SY	$1.50	$9,300.00
21	Traffic Control	1 LS	$10,000.00	$10,000.00
22	Erosion Control	1 LS	$25,000.00	$25,000.00
23	Incidental Construction	1 LS	$93,000.00	$93,000.00
			Subtotal	$2,136,560.00
			Contingencies (12%)	$256,440.00
			Construction Total	$2,393,000.00
			Design Engineering	$135,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$203,000.00
			Administration and Legal	$72,000.00
			Total Project Cost	$2,808,000.00

7.3.12.3 Storm Sewer Improvements Phase 3

Phase 3 proposes finishing the improvements started in Phase 2 as described in Replacement Option 5 Southeast Miller Storm Water Drainage System. The cost estimate for the remaining work from Option 5 is presented in Table 7.13. Storm Sewer Improvements Phase 3 also proposes installing new storm sewer improvements as described in Replacement Option 6 West Second Street Drainage System. The estimated project cost for the proposed system is shown in Table 7.13. A preliminary storm drainage system layout is shown in Figure 7.12.

Table 7.13: Estimated Project Cost for Remaining Work in Option 5

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$111,000.00	$111,000.00
2	Pulverize and Salvage Existing Asphalt	2,000 SY	$3.50	$7,000.00
3	Remove and Dispose Existing Structures	15 EA	$400.00	$6,000.00
4	Remove Storm Sewer Pipe (12"-24")	2,904 LF	$25.00	$72,600.00
5	Reomve Storm Sewer Pipe (27"-42")	1,500 LF	$35.00	$52,500.00
6	Storm Sewer Inlet	12 EA	$3,000.00	$36,000.00
7	Storm Sewer Manhole	9 EA	$5,000.00	$45,000.00
8	12" RCP Storm Sewer Pipe	240 LF	$50.00	$12,000.00
9	48" RCP Storm Sewer Pipe	810 LF	$150.00	$121,500.00
10	54" RCP Storm Sewer Pipe	1,000 LF	$200.00	$200,000.00
11	Dual 48" RCP Storm Sewer Pipe	2,100 LF	$290.00	$609,000.00
12	Dual 48" RCP Flared End Sections	2 EA	$3,000.00	$6,000.00
13	Dual 48" RCP Bore	100 LF	$650.00	$65,000.00
14	Double Blotter Coat	2,000 SY	$8.00	$16,000.00
15	Gravel Base Course and Surfacing	5,500 TN	$20.00	$110,000.00
16	Ditch Shaping	4,000 LF	$3.50	$14,000.00
17	Topsoil, Seed, Fertilizer & Mulch	9,300 SY	$1.50	$13,950.00
18	Traffic Control	1 LS	$7,000.00	$7,000.00
19	Erosion Control	1 LS	$28,000.00	$28,000.00
20	Incidental Construction	1 LS	$111,000.00	$111,000.00
			Subtotal	$1,643,550.00
			Contingencies (12%)	$197,450.00
			Construction Total	$1,841,000.00
			Design Engineering	$107,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$161,000.00
			Administration and Legal	$56,000.00
			Total Project Cost	$2,170,000.00

Table 7.14: Estimated Project Cost for Option 6

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$82,000.00	$82,000.00
2	Remove Asphalt Surfacing	14,100 SY	$3.00	$42,300.00
3	Remove Storm Sewer Pipe (12"-24")	3,795 LF	$20.00	$75,900.00
4	Storm Sewer Inlet	18 EA	$3,000.00	$54,000.00
5	Storm Sewer Manhole	7 EA	$5,000.00	$35,000.00
6	12" RCP Storm Sewer Pipe	270 LF	$50.00	$13,500.00
7	15" RCP Storm Sewer Pipe	600 LF	$60.00	$36,000.00
8	18" RCP Storm Sewer Pipe	200 LF	$70.00	$14,000.00
9	24" RCP Storm Sewer Pipe	200 LF	$80.00	$16,000.00
10	30" RCP Storm Sewer Pipe	900 LF	$90.00	$81,000.00
11	36" RCP Storm Sewer Pipe	475 LF	$110.00	$52,250.00
12	42" RCP Storm Sewer Pipe	1,150 LF	$125.00	$143,750.00
13	42" RCP Flared End Section	1 EA	$1,400.00	$1,400.00
14	Double Blotter Coat	14,100 SY	$8.00	$112,800.00
15	Gravel Base Course and Surfacing	6,200 TN	$20.00	$124,000.00
16	Topsoil, Seed, Fertilizer & Mulch	7,900 SY	$1.50	$11,850.00
17	Traffic Control	1 LS	$9,000.00	$9,000.00
18	Erosion Control	1 LS	$25,000.00	$25,000.00
19	Incidental Construction	1 LS	$98,000.00	$98,000.00
			Subtotal	$1,027,750.00
			Contingencies (15%)	$154,250.00
			Construction Total	$1,182,000.00
			Design Engineering	$73,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$110,000.00
			Administration and Legal	$36,000.00
			Total Project Cost	$1,406,000.00

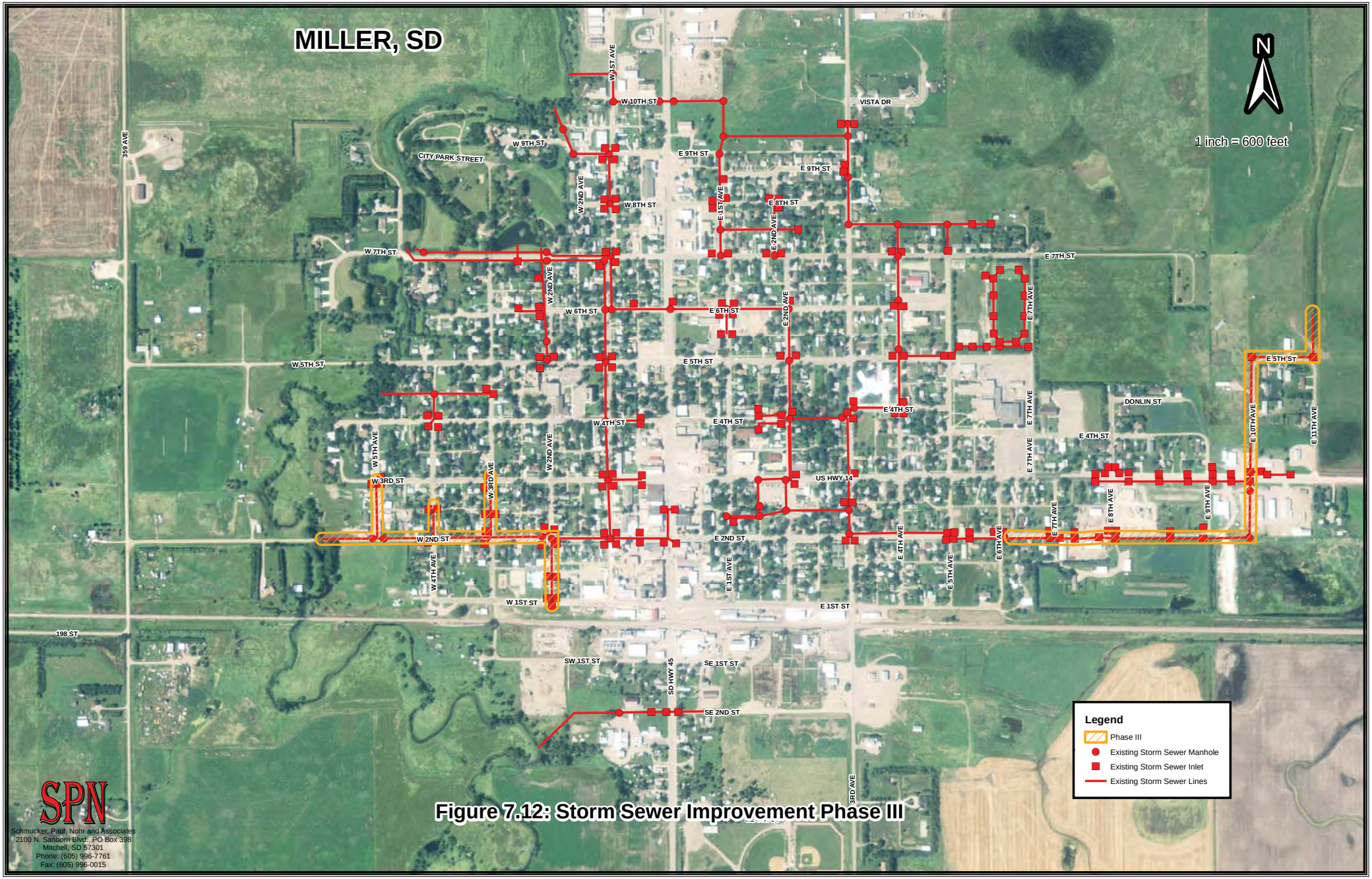


Figure 7.12: Storm Sewer Improvement Phase III

SPN
Schmucker, Paul, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 398
Mitchell, SD 57301
Phone: (605) 996-7761
Fax: (605) 996-0015

8 STORM DRAINAGE RECOMMENDATIONS

The options discussed have been analyzed and the following is a recommendation for the implementation of the options for the City of Miller.

8.1 REPLACEMENT OF EXISTING SYSTEMS

8.1.1 Replacement Option 1: Do Nothing

Since this option will not address current storm water deficiencies located in the City of Miller, the "Do Nothing" option is not recommended.

8.1.2 Replacement Option 2: West Drainage System

The existing West Miller Drainage System is an underground piping system consisting of reinforced concrete pipe and vitrified clay pipe. The age and size of the pipe and type of inlets associated with the system warrants the complete replacement and resizing of the storm water drainage system piping and inlets. Our recommendation to the City of Miller is to implement the construction when feasible.

8.1.3 Replacement Option 3: Central Miller Drainage System

The existing underground piping system located in central Miller consists of reinforced concrete and vitrified clay pipe. The area served by the system experiences periods of prolonged flooding due to plugged or inadequate pipe sizes. Our recommendation to the City of Miller is to implement the proposed improvements as described in Replacement Option 11.

8.1.4 Replacement Option 4A: Northeast Miller Drainage System

The existing storm water drainage system located in northeast Miller serves a large portion of the City and is undersized for a 3.1-inch-per-hour rain event. The drainage problems that are experienced in conjunction with the storm sewer system warrant upgrading the system from its current state. Our recommendation to the City of Miller is to implement the construction when feasible.

8.1.5 Replacement Option 4B: Northeast Drainage System Extension

Option 4B proposes extending drainage piping to a possible development area. The City has expressed great interest in this project. For this reason it is our recommendation to the City of Miller to implement the proposed improvements as described in Replacement Option 11.

8.1.6 Replacement Option 5: Southeast Drainage System

Replacement Option 5 proposes installing a storm water system capable of conveying a 3.1-inch-per-hour rain event. In order to convey the amount of storm water generated in this area during a five-year storm event, it is our recommendation to the City of Miller to implement the proposed improvements as described in Replacement Option 11.

8.1.7 Replacement Option 6: West Second Street Drainage System

The storm drainage system located on West Second Street is not capable of conveying a five-year rain event. Televising videos and inlet and manhole reports show that the condition of this piping system is in poor condition. Our recommendation to the City of Miller is to implement the proposed improvements as described in Replacement Option 11.

8.1.8 Replacement Option 7: West Alley Drainage System

Replacement Alternative 7 proposes upgrading a 12-inch PVC storm sewer line to reinforced concrete pipe large enough to convey a 3.1-inch-per-hour storm event. The City of Miller does not perceive the drainage area as an area of concern. For this reason the improvements are not recommended at this time.

8.1.9 Replacement Option 8: West First Avenue Drainage System

Replacement Option 8 also proposes upgrading a 12-inch PVC Storm sewer line with reinforced concrete pipe capable of conveying a 3.1-inch-per-hour rain event. The City of Miller does not perceive the drainage area as an area of concern. For this reason the improvements are not recommended at this time.

8.1.10 Replacement Option 9: Second Street Southwest Drainage System

Replacement Option 9 proposes up-sizing an existing piping system at the intersection of SD Hwy 45 and Second Street Southwest. The piping system will adequately convey storm water from the street to the creek. The intersection is not a primary concern and the improvements are not recommended at this time.

8.1.11 Replacement Option 10: Clean and Televise Spot Repairs

Replacement Option 10 proposes correcting deficiencies identified in the clearing and televising reports completed in 2015. If the improvements are not completed, the storm sewer piping and inlets' condition will continue to deteriorate possibly causing hazards to the public. Our recommendation to the City of Miller is to implement the proposed improvements as described in Replacement Option 11.

8.1.12 Replacement Option 11: Phased Improvements

The City of Miller plans to complete the storm sewer improvements in conjunction with the proposed water and sanitary sewer improvements. For this reason, the replacement options need to be customized to accommodate the priorities of the water and sanitary sewer improvements. Phase 1 should be implemented as soon as possible. Phases 2 and 3 should be implemented subsequently.

8.2 ECONOMIC EVALUATION

Table 8.1 lists a summary of costs for the recommended improvements contained in this report.

Table 8.1: Summary of Costs for Project Phases

Recommended Improvements	Cost
Phase 1	
Spot Repairs and Upstream Improvements to Central Drainage	$1,037,000
Option 4B (Northeast Drainage Extension)	$921,000
Total Costs for Phase 1	$1,958,000
Phase 2	
Remainder of Central & Portion of Southeast Drainage System	$2,808,000
Total Costs for Phase 2	$2,808,000
Phase 3	
Remainder of Southeast Drainage System	$2,170,000
Option 6 (West Second Street Drainage System)	$1,406,000
Total Costs for Phase 3	$3,576,000
Total Costs for All Improvements	$8,342,000

8.3 DEMONSTRATION OF FINANCIAL CAPABILITY

As part of the cost analysis of the recommended improvements, the City's ability to pay for the projects is evaluated. The total costs of the improvements are listed in Table 8.1. For the purpose of this financial evaluation, the total cost of the improvements is assumed to be eligible for a low interest loan from the DENR's State Revolving Fund program. This, however, is subject to change due to decisions that must be made by the appropriate funding agencies.

The annual loan payment for principal and interest on the total cost of the improvements is calculated based on a 30-year loan period and an interest rate of 3.25 percent. Storm drainage system expenses are currently funded by the City's General Fund. In order to pay for a loan on this project a system of fee collection or increased taxes will be necessary. For the purpose of this evaluation, the required loan payments are assumed to be funded by a grant and loan package as depicted in Table 8.2. The cost of the loan expense is shown in terms of cost per sanitary sewer connection at the bottom of Table 8.2. The actual cost per user will depend on the financing that is available and the structure used to collect additional revenue to pay for the loan. An alternate table for

sewer rate analysis is presented in Table 8.3 for a Rural Development loan which would have a term of 40 years and an interest rate of 2.625 percent. Tables 8.2 and 8.3 include a short-term asset replacement cost for cleaning the sewer lines. The short-term asset replacement cost calculations are shown in Table 8.4.

Table 8.2: Storm Sewer Fee Analysis (SRF)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$0	$0	$0	$0	$0	$0
Amount Amortized	$489,500	$587,400	$685,300	$783,200	$881,100	$979,000
Grant Amount	$1,468,500	$1,370,600	$1,272,700	$1,174,800	$1,076,900	$979,000
Annual Payment	$25,788	$30,945	$36,103	$41,260	$46,418	$51,575
Debt Reserves	$2,579	$3,095	$3,610	$4,126	$4,642	$5,158
Current Debt/Asset/Other Cost	$625	$625	$625	$625	$625	$625
Total Annual Costs	$28,991	$34,665	$40,338	$46,011	$51,685	$57,358
Annual Revenue	$0	$0	$0	$0	$0	$0
Surplus/Deficit After Project	-$28,991	-$34,665	-$40,338	-$46,011	-$51,685	-$57,358
Minimum Rate Increase	$3.25	$4.00	$4.50	$5.25	$5.75	$6.25

Table 8.3: Storm Sewer Fee Analysis (RD)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$0	$0	$0	$0	$0	$0
Amount Amortized	$489,500	$587,400	$685,300	$783,200	$881,100	$979,000
Grant Amount	$1,468,500	$1,370,600	$1,272,700	$1,174,800	$1,076,900	$979,000
Annual Payment	$19,913	$23,895	$27,878	$31,860	$35,843	$39,825
Debt Reserves	$1,991	$2,390	$2,788	$3,186	$3,584	$3,983
Current Debt/Asset/Other Cost	$625	$625	$625	$625	$625	$625
Total Annual Costs	$22,529	$26,910	$31,290	$35,671	$40,052	$44,433
Annual Revenue	$0	$0	$0	$0	$0	$0
Surplus/Deficit After Project	-$22,529	-$26,910	-$31,290	-$35,671	-$40,052	-$44,433
Minimum Rate Increase	$2.50	$3.00	$3.50	$4.00	$4.50	$5.00

Table 8.4: Short-Lived Asset Replacement Schedule

Expenses	Year															
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Clean Piping Every 20 Years	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625
Total Annual Budget	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625	$625

9 WATER SYSTEM EVALUATION

9.1 GENERAL INFORMATION

The City of Miller currently provides water service to approximately 820 connections. 129 of these connections are commercial-type connections. The remainder are residential connections. The City purchases 100 percent of its domestic demand from the Mid-Dakota Rural Water System (Mid-Dakota). The City has three wells inside the City limits which have degraded to a point that they are no longer operable.

9.2 WATER DEMAND

To evaluate the City of Miller's potential to meet the needs of the future, a review of past water usage records was completed. The process used to estimate future water demand included a determination of the current average per capita demand combined with a projection of the future population. Records of water purchased from Mid-Dakota and City water sales dated from January 1999 through October 2014 were obtained and utilized to create Table 9.1.

The sources and methods used to develop the information presented in Table 9.1 are described by the following:

- Water purchased per month from Mid-Dakota is based on information provided by the City of Miller.
- Water usage billed per month is based on data provided by the City of Miller. One value is shown red for June 2012 since this value was missing and is estimated.
- The percentage of unaccounted-for water per month and year is calculated by dividing the difference between the water purchased and the water billed.
- Monthly precipitation data for 1999-2014 is from the National Climatic Data Center Miller Station.
- Per capita per day usage for each month is calculated by dividing the water accounted for by the population and the days per month.
- Total sum of water usages is calculated by summing up the columns.

- Two average day values were calculated for the available months of each year. The daily water purchased and the daily water billed for each year were calculated by dividing the sum of the water for each month by the days in that period.

Table 9.1 indicates that the billed per capita water usage ranges from 64 gpcpd during February 2014 to 255 gpcpd during July 2006. The average per capita water usage based on purchase data for the period of January 1999 through 2014 was determined to be approximately 169 gpcpd. An analysis of the billed water data from 1999 through 2014 indicates that the City of Miller billed an average of 61.6 million gallons per year (mgy), or 112 gpcpd. The billed per capita data is within the typical range of 100 to 125 gpcpd for this size of community. For the purpose of this report the purchased per capita per day water usage of 169 will be used.

Table 9.1 indicates that the water losses in the system average 34 percent. The typical reasons for losses in the system are leaks, slow or malfunctioning meters and fire fighting. However, the City generally meters water used for fire fighting. Water loss is not often thought of as financial loss. However, when considering the amount of water purchased from Mid-Dakota and that sold to the residents of Miller, the financial loss becomes apparent. The average amount purchased from Mid-Dakota from 1999 through 2014 is approximately 92.8 million gallons per year, as compared to 61.6 million gallons per year sold. This water loss results in an average annual cost to the City of nearly $14,700 annually [(92.8 MG - 61.6 MG) x $0.47 per 1,000 gallons]. As a result, it is important that unaccounted-for water loss be limited to less than the generally accepted standard of 12 to 15 percent or roughly half that currently being experienced in the City's distribution system.

Table 9.1: Water Use Records

	1999					2000					2001				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	6.10	4.38	28%	0.24	92	8.61	4.43	49%	0.00	93	7.22	4.06	44%	0.71	86
February	6.84	4.18	39%	0.19	88	8.35	4.21	50%	0.33	89	6.24	3.32	47%	1.95	70
March	5.89	4.03	31%	0.79	85	6.44	3.72	42%	0.66	78	5.95	3.32	44%	0.12	70
April	7.07	4.43	37%	3.04	93	8.18	4.60	44%	2.92	97	7.47	3.98	47%	4.10	84
May	6.47	5.21	20%	4.36	110	9.16	5.13	44%	4.38	108	7.43	4.10	45%	2.78	87
June	11.00	6.97	37%	3.59	147	12.51	5.55	56%	2.21	117	7.79	5.46	30%	2.50	115
July	9.40	8.59	9%	1.35	181	10.54	6.96	34%	3.41	147	13.42	9.91	26%	2.64	209
August	14.73	11.34	23%	1.56	239	12.47	6.96	44%	2.09	147	10.52	7.13	32%	1.35	150
September	9.95	7.09	29%	2.22	150	11.32	7.16	37%	0.12	151	10.21	6.47	37%	1.99	136
October	7.89	5.47	31%	0.90	115	8.44	4.77	43%	2.66	101	7.25	4.44	39%	0.96	94
November	8.51	4.71	45%	0.00	99	5.51	3.77	32%	0.93	79	7.48	4.27	43%	1.49	90
December	10.31	6.13	41%	0.07	129	7.09	4.34	39%	0.22	92	4.66	3.61	23%	0.04	76
Total	104.15	72.53		18.31		108.63	61.59		19.93		95.64	60.06		20.63	
Average Day	285,353	198,707				296,803	168,273				262,038	164,540			
Average (gpcpd)	187	130				194	110				171	108			
Average Unacc %			31%					43%					38%		

Average Water Purchased Per Year =	92.8	MG
Average Water Accounted for Per Year =	61.6	MG
Maximum Month Billed =	11.8	MG
Minimum Month Billed =	2.08	MG
Average Day Purchased 1999-2014 =	254,270	gpd
Average Day Billed1999-2014 =	168,703	gpd
Average Per Capita Usage (Based on Purchased Water) =	169	gpcpd
Average Per Capita Usage (Based on Billed Data) =	112	gpcpd

Table 9.1: Water Use Records (Continued)

	2002					2003					2004				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	7.16	4.25	41%	0.65	90	5.23	3.96	24%	0.12	84	5.39	3.90	28%	0.04	82
February	5.47	3.96	28%	0.07	83	5.09	3.76	26%	1.27	79	5.16	3.60	30%	0.08	76
March	3.77	3.43	9%	0.44	72	4.44	3.64	18%	0.47	77	4.17	3.47	17%	2.66	73
April	5.67	4.20	26%	1.47	89	5.60	4.02	28%	1.80	85	4.80	4.02	16%	0.99	85
May	5.79	4.93	15%	0.72	104	6.14	4.73	23%	2.26	100	6.82	5.37	21%	3.06	113
June	11.62	9.43	19%	1.62	199	9.75	8.51	13%	3.32	179	6.18	5.22	16%	4.41	110
July	11.27	10.73	5%	2.39	226	7.34	8.01	-9%	2.24	169	7.40	6.58	11%	4.66	139
August	7.67	7.22	6%	3.06	152	13.31	9.28	30%	2.09	196	8.62	7.06	18%	2.98	149
September	8.47	7.15	16%	1.04	151	8.91	7.87	12%	1.54	166	7.23	5.82	19%	4.50	123
October	6.15	4.90	20%	1.12	103	6.86	6.34	8%	0.81	134	6.32	5.01	21%	1.78	106
November	5.20	4.01	23%	0.00	84	5.32	3.71	30%	1.42	78	4.88	3.65	25%	0.15	77
December	4.54	3.87	15%	0.03	82	6.18	3.77	39%	0.26	80	6.24	3.52	44%	0.00	74
Total	82.79	68.06		12.61		84.14	67.59		17.60		73.20	57.21		25.31	
Average Day	226,819	186,474				230,510	185,184				200,003	156,306			
Average (gpcpd)	148	122				151	121				131	102			
Average Unacc %			18%					20%					22%		

Table 9.1: Water Use Records (Continued)

	2005					2006					2007				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	5.23	4.14	21%	0.02	87	5.91	4.67	21%	0.10	101	7.77	3.78	51%	0.17	82
February	4.78	3.55	26%	0.13	75	6.02	3.45	43%	0.21	75	6.33	3.31	48%	0.49	72
March	4.54	3.16	30%	0.20	67	5.23	3.10	41%	1.06	67	5.46	3.10	43%	1.29	67
April	5.82	5.02	14%	1.17	106	6.23	3.89	37%	1.05	84	7.28	3.82	47%	2.54	83
May	6.62	5.25	21%	2.87	111	9.45	6.25	34%	0.41	135	9.36	5.72	39%	5.51	124
June	7.40	5.02	32%	7.83	106	14.07	10.59	25%	1.00	229	9.73	5.19	47%	3.29	112
July	12.26	9.51	22%	1.73	201	16.37	11.75	28%	0.31	255	12.45	10.07	19%	0.21	218
August	9.26	7.88	15%	3.75	166	12.52	9.45	24%	3.36	205	9.21	6.37	31%	8.55	138
September	8.83	6.63	25%	2.37	140	8.60	6.00	30%	2.81	130	7.53	5.09	32%	1.04	110
October	6.68	4.42	34%	0.84	93	7.00	4.16	41%	0.09	90	7.44	4.25	43%	3.33	92
November	6.09	4.11	33%	0.38	87	8.80	3.57	59%	1.09	77	6.58	3.64	45%	0	79
December	5.65	4.55	19%	0.23	96	5.76	3.52	39%	2.09	76	6.37	3.18	50%	0.28	69
Total	83.15	63.23		21.52		105.95	70.40		13.58		95.51	57.52		26.70	
Average Day	227,811	173,244				290,260	192,868				261,668	157,586			
Average (gpcpd)	153	116				195	130				176	106			
Average Unacc %			24%					35%					41%		

Table 9.1: Water Use Records (Continued)

	2008					2009					2010				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	5.72	3.94	31%	0.11	85	6.31	3.97	37%	0.16	86	5.97	3.37	44%	0.59	73
February	6.29	3.59	43%	0.10	78	6.79	3.86	43%	0.53	84	7.14	4.54	36%	0.94	98
March	6.69	3.22	52%	1.27	70	5.87	3.24	45%	2.61	70	6.51	3.35	49%	1.43	73
April	6.54	3.51	46%	1.44	76	6.11	3.87	37%	0.56	84	7.68	4.43	42%	2.91	96
May	6.28	4.17	34%	2.51	90	8.38	5.10	39%	1.09	111	8.57	4.44	48%	5.67	96
June	8.97	5.66	37%	3.95	123	9.35	6.75	28%	2.20	146	8.95	4.21	53%	5.04	91
July	10.87	8.05	26%	4.61	174	9.95	6.87	31%	3.05	149	10.08	5.29	48%	4.53	115
August	8.79	5.98	32%	1.16	129	9.77	6.59	33%	2.82	143	11.72	6.65	43%	1.47	144
September	8.77	6.28	28%	2.83	136	8.47	5.62	34%	1.23	122	9.59	6.68	30%	5.18	145
October	7.59	4.39	42%	2.68	95	6.32	3.87	39%	4.98	84	9.51	2.08	78%	0.95	45
November	6.66	4.22	37%	0.42	92	6.67	5.34	20%	0.06	116	7.58	4.66	39%	0.07	101
December	6.31	3.05	52%	0.51	66	6.25	3.25	48%	1.3	70	7.17	3.90	46%	0.71	84
Total	89.49	56.05		21.59		90.24	58.30		20.59		100.47	53.60		29.49	
Average Day	244,519	153,145				247,230	159,734				275,266	146,841			
Average (gpcpd)	164	103				166	107				185	99			
Average Unacc %			38%					36%					46%		

Table 9.1: Water Use Records (Continued)

	2011					2012					2013				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	8.34	3.71	56%	1.04	80	6.02	3.81	37%		83	4.43	3.84	13%	0.45	83
February	7.86	4.12	48%	1.67	89	5.71	3.31	42%		72	5.91	2.97	50%	0.65	64
March	7.02	4.16	41%	1.14	90	5.84	3.13	46%		68	5.18	3.23	38%	0.47	70
April	7.17	3.15	56%	2.82	68	6.14	5.36	13%		116	6.09	4.65	24%	2.22	101
May	8.97	2.73	70%	5.36	59	9.25	6.37	31%		138	7.15	5.59	22%	7.49	121
June	8.76	4.77	46%	6.98	103	10.67	6.52	39%	1.65	141	7.54	5.74	24%	5.28	124
July	8.65	5.03	42%	2.68	109	11.25	6.67	41%	2.31	145	11.52	6.67	42%	1.24	145
August	8.89	8.10	9%	3.01	175	11.51	10.14	12%	0.81	220	11.19	8.41	25%	1.32	182
September	8.10	5.99	26%	1.14	130	9.04	7.69	15%	0.16	167	10.37	8.11	22%	1.06	176
October	8.88	5.69	36%	1.02	123	8.03	4.56	43%	0.65	99	7.06	3.65	48%	5.44	79
November	5.97	4.37	27%	0.06	95	5.47	4.02	27%	0.18	87	6.22	4.15	33%	0.21	90
December	7.79	3.51	55%	0.22	76	5.12	3.84	25%	0.74	83	5.88	4.21	28%	0.29	91
Total	96.40	55.33		27.14		94.05	65.42		6.50		88.54	61.22		26.12	
Average Day	264,110	151,589				256,967	178,743				242,575	167,726			
Average (gpcpd)	177	102				173	120				163	113			
Average Unacc %			42%					31%					31%		

Table 9.1: Water Use Records (Continued)

	2014					2015				
Month	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)	Purchased (MG)	Billed (MG)	Unacc. for %	Precip (in)	Billed (gpcpd)
January	8.89	3.56	60%		77	3.89	3.03	22%		66
February	10.28	2.94	71%		64	4.08	2.96	27%		64
March	9.01	3.92	56%		85	3.53	3.01	15%		65
April	6.70	3.07	54%		67	4.28	4.44	-4%		96
May	6.81	4.82	29%		104	5.74	5.58	3%		121
June	9.71	6.59	32%		143	8.59	7.37	14%		160
July	11.07	11.15	-1%		242	7.74	7.22	7%		156
August	10.77	4.74	56%		103	7.89	6.71	15%		145
September	7.47	6.29	16%		136	7.29	7.19	1%		156
October	5.16	3.96	23%		86					
November	3.85	3.19	17%		69					
December	3.86	3.54	8%		77					
Total	93.58	57.77		0.00						
Average Day	256,384	158,282								
Average (gpcpd)	172	106								
Average Unacc %			35%							

Finding and/or attributing the cause for the water loss is not always easy. This is the case with Miller's system. Approximately 55 percent of the existing system is Asbestos Cement Pipe (ACP) which is also commonly referred to as transite pipe. This pipe is old and becomes brittle over time which makes it a headache for operators when fixing leaks. Discussions with the water operators indicate that in the past couplers used for repairing leaks and/or for rehabilitation of water main did not have stainless steel bolts. Over time the bolts that were used have rusted away. The City has fixed a number of leaks where the bolts associated with previous repairs had completely corroded away. New stainless steel bolts were added to the couplers and they are working properly now. The operator estimates that there are over 100 of these couplers in place throughout the system.

The City completed a water meter replacement project in 2010. Since old water meters tend to not read all of the flow that goes through them, the water loss was expected to decrease with the installation of the new meters. Unfortunately, that was not the case. Since the water loss continues to be excessive, it is apparent that the loss is within the distribution system and portions of the distribution system need to be replaced.

A significant increase in water usage is noticeable during the growing months of April through September. It should be noted that above-average precipitation during these months typically lessens the increase in usage just as the below-normal precipitation typically magnifies the increase in usage. This is clearly shown by the relatively low water usage during 2004, 2007 and 2010 which were fairly wet years and the high usages in 2002, 2003 and 2006 which were very dry years.

9.3 PROJECTION OF WATER DEMAND

Future water demand projections are the basis for establishing the water distribution system capacity and storage. These projections are based on historical data of per capita flows and population projections to determine peak day and peak hour demands to ensure that the system is capable of meeting the future demands of the City. As shown in Section 2.3 the population of Miller is expected to stabilize and remain fairly steady in

the foreseeable future. For this reason the 2010 population is used for determining the future water demands along with the average per capita demand of 169 gpd.

To meet the peak day water usage that may occur in the future, a peaking factor is generally determined. Smaller cities have a greater fluctuation than larger cities, but these fluctuations generally occur over a shorter period of time. As can be seen in Table 9.1, the water use in a city such as Miller that does not have a significant commercial or industrial user is largely dependent on the climate and its impact on lawn watering. Our experience has shown that the ratio of average day to peak day ranges from 2.0 to 7.0 for communities in South Dakota. This is confirmed by references in Salvato, 1982 which found peak day demands to be as high as 10 times that of the average day.

In Miller's case the peak month of water use occurred during July 2006 with 15.8 million gallons, according to Mid-Dakota's records, which is slightly different from the monthly record in Table 9.1. The basis for utilizing Mid-Dakota's numbers for this portion of the report is to be consistent with the use of records from one meter for capacity evaluations. It is beneficial to use the Mid-Dakota meter's records in this case because Mid-Dakota has daily records available whereas the City does not keep daily meter records.

Based on Mid-Dakota's monthly usage records, the average day during the peak month was nearly 510,000 gpd (15.8 MG / 31 days). The peak day during the peak month is expected to be 1.2 to 1.5 the daily usage during the peak month (Salvato, 1982). This would result in a range of expected peak day usage from 612,000 gallons to 765,000 gallons. However, Mid-Dakota's peak day flow recorded for July 2006 was only 552,000 gallons. This is not unexpected due to the fact that Mid-Dakota's system is designed to provide a maximum flow rate of approximately 350 gpm to the City of Miller, which would result in a maximum daily flow of 504,000 gallons over a 24-hour period. It is interesting that the peak daily flow record indicates a higher flow rate that what is currently contracted between the City and Mid-Dakota by 48,000 gpd or about 10 percent.

It should also be noted that, according to Mid-Dakota's records for the period from July 10 through 16 in 2006, the City was essentially receiving the maximum water flow every minute of every day. The operators noted that the tank levels during this time were decreasing during the day, but were filling for the most part during the night. This being the case it is difficult to determine the exact peak day usage. A review of the daily usage for the month of July indicates a usage that is fairly consistent (around 510,000 gpd). This and the fact that the storage did not become emptied, which would have occurred at the higher ratio, leads us to believe that the ratio of the flow for this month was on the low side of the range. Therefore, we have selected an average day to peak day ratio of 1.2 which results in a peak day usage of 612,000 gallons (510,000 gallons x 1.2). This results in a ratio of purchased peak day usage to average day flow of approximately 2.4 (612,000 gpd / 252,000 gpd). The peak day demand of 604,000 gpd (1,489 people x 169 gpcpd X 2.4) will be used throughout the remainder of the report.

Water treatment plants and pumping facilities within these plants are typically designed to meet the expected maximum day usage during the design life of the plant. In addition, these facilities are generally designed at a constant flow rate for production to meet the peak day demand. However, in the City of Miller's case the water supply is provided from Mid-Dakota. The contract between the City of Miller and the Mid-Dakota Rural Water System set the amount of water that Mid-Dakota is obligated to provide the City of Miller at 350 gpm or a maximum of 504,000 gpd. As discussed earlier, this is approximately 48,000 gallons less than the supplied peak day usage during 2006 and approximately 100,000 gallons less than the estimated peak day usage. However, this is associated with a high percentage of water loss at roughly 34 percent. If the water loss is reduced to the desired maximum of 15 percent, the peak day usage would be lowered to approximately 489,000 gpd [604,000 gpd x (100% - (34% - 15%))] which is less than the maximum contract rate. Therefore, no action toward increasing the Mid-Dakota contract rate is recommended at this time.

9.4 WATER SOURCES

9.4.1 Mid-Dakota Rural Water

The City of Miller is under contract with the Mid-Dakota Rural Water System to supply water at a maximum flow rate of 350 gpm over a 24-hour period or 504,000 gpd. The purchase of this water from Mid-Dakota currently costs the City a minimum monthly charge of $5,740 and a demand charge of $7,000 regardless of quantity of water used. In addition to the minimum bill and demand charge the City currently pays a water rate of $0.47 per thousand gallons delivered by Mid-Dakota. The contract also includes an Excess Capacity Rate should the City request and Mid-Dakota have the ability to deliver a demand rate above the contracted rate of 350 gpm. The cost of this additional flow rate is half the minimum bill rate or essentially $8.20 ($5,740 / 350 gpm / 2) per additional gallon per minute requested and delivered per month.

As discussed earlier, this contracted flow rate is not sufficient to meet the current or estimated future peak day usage for the City of Miller with the existing water loss. Reducing the water loss to an acceptable level needs to be a priority of the City. This will not only allow the current contract flow rate to be sufficient to meet the peak day needs, but will also save the City the cost of the water loss.

9.4.2 Existing Wells

The City has three wells that were formerly used as a back-up to Mid-Dakota or for non-potable water use. The wells have not been used in many years and have since become inoperable. The existing wells should be properly abandoned. There has been some discussion with the City about drilling a new well as a back-up water supply and for non-potable water use. However, the desire for the new well is not a very high priority considering the deficiencies identified with the water distribution system.

9.5 STORAGE

The City currently has two water reservoirs. Behind City hall is a 250,000-gallon glass-lined steel ground storage reservoir which is shown in Figure 9.1. A 400,000-gallon elevated storage reservoir is located next to City Hall and is shown in Figure 9.2. The 400,000-gallon single pedestal spheroid water tower was constructed in 2010. Both reservoirs are in good condition and are inspected periodically for needed maintenance.

Figure 9.1: 250,000-Gallon Ground Storage Reservoir

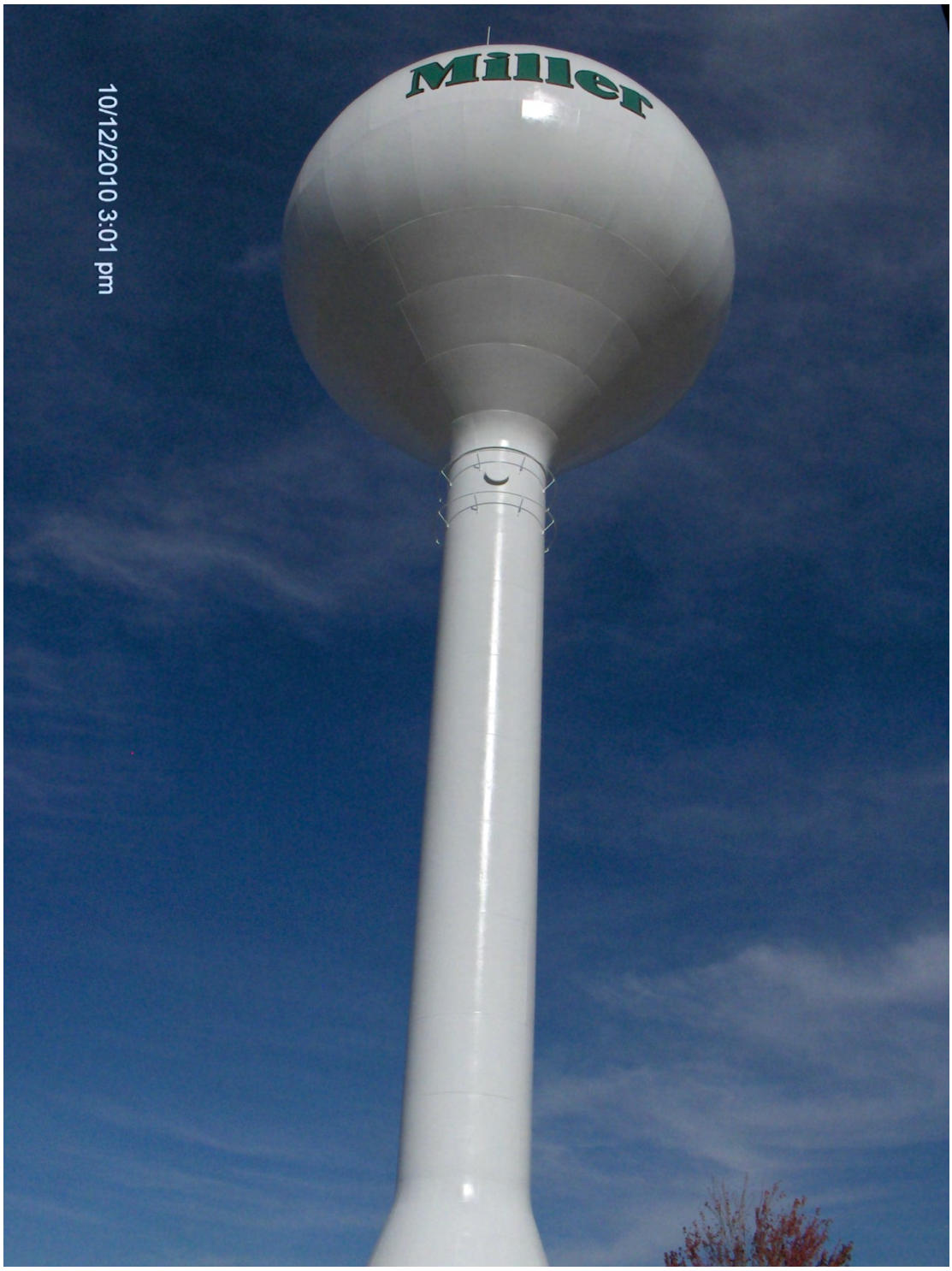


Figure 9.2: 400,000-Gallon Water Tower

Water storage establishes the pressure(s) for the distribution system; provides a means for equalizing operating pressures during high demand periods; provides emergency storage to temporarily offset the effects of downtime for pump repairs, pipeline repairs and power outages; and provides fire protection. Ground storage reservoirs cannot provide any of these attributes unless they are constructed on a hill or with the use of an automatic stand-by generator. As a result, ground storage is often referred to as dead storage. This is not to say that ground storage does not have its place or usefulness in a water system. Ground storage tanks are cheaper to construct than elevated storage tanks; however, the cost of the pumping facilities and the pumping cost must be added to the cost of the ground storage tank. In some circumstances, the water supply is such that pumping is required to increase the pressure to a desirable range and/or the supply is at a slow constant rate such that ground storage and pumping facilities are utilized to reduce the overall size of the elevated tank required. This is especially beneficial in small communities that need additional storage and have an existing water tower, but the cost of a new elevated tank is cost prohibitive.

There is not a defined method for determining the volume of elevated storage for water distribution systems. Standards such as the Ten State Standards say that if fire flow is to be provided, the flow guidelines established by ISO should be met. Thus, at 2000 gpm, a 2-hour fire event requires 240,000 gallons for the downtown area.

Equalization and emergency storage are the other factors in determining the volume of water required or desired. Equalization storage is required to supply the varying demands throughout each day. Figure 9.3 illustrates a typical variation of demand over a peak day. During those times that the water usage is shown to be over 100% of the supply rate, the system's storage must provide the additional water to meet the demands. Mays states that storage for equalization with constant rate pumps typically ranges from 10% to 25% of the peak day demand. The higher end of the range is for communities with high ratios of average day to peak day usage. Since the selected peak day to average day ratio for Miller is at the middle of the typical range of 2.0 to 3.0, the mid-point of the required range of equalization storage, or 17.5%, is selected for the desired equalization storage.

The projected peak day demand is 604,000 gpd and results in an equalization storage volume of approximately 106,000 gallons.

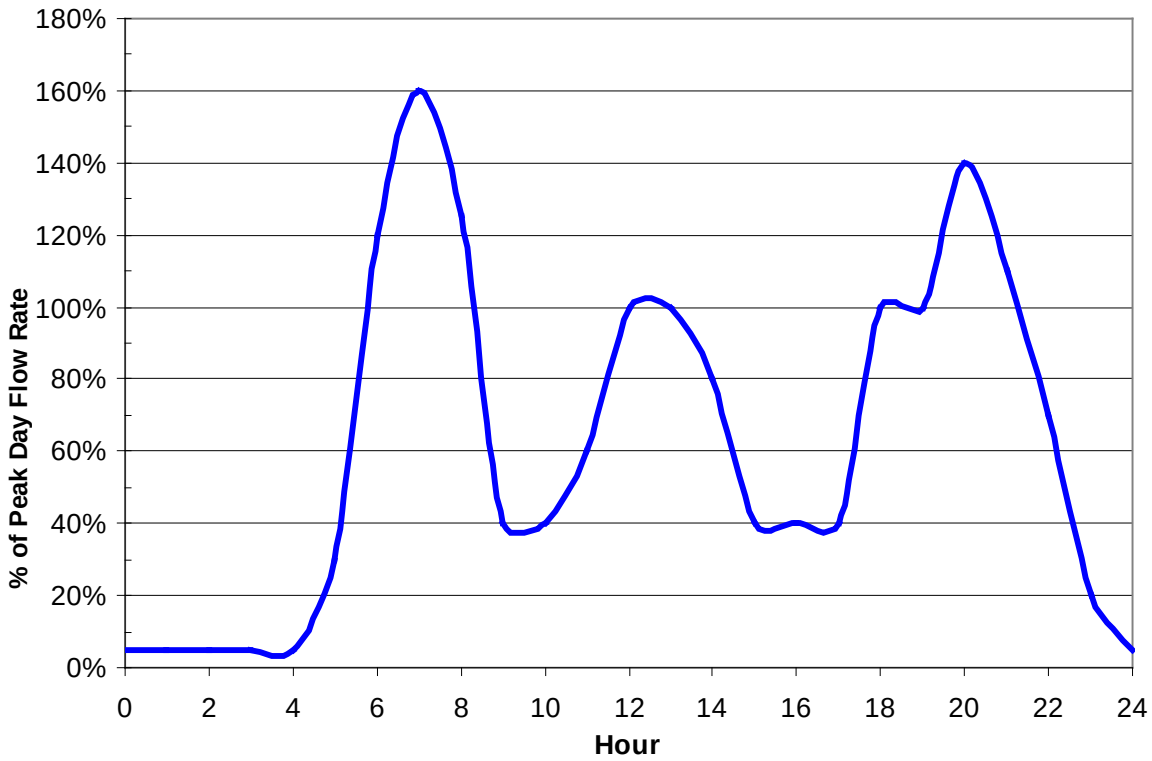


Figure 9.3: Water Demand Pattern Used in Model

Emergency storage is essentially the storage that a community feels comfortable with based on the reliability of the power supply and its water system in general. Emergency storage equal to the average day usage is commonly used for the emergency storage volume and is utilized in this report. The current average day water demand is 252,000 gallons.

The total required water storage for a community is generally considered to be the equalization storage plus the larger of fire or emergency storage (Mays 2000). In the case of Miller, the emergency storage governs. Therefore, the total elevated storage required to meet the emergency and equalization storage would be 252,000 gallons + 106,000 gallons or 358,000 gallons. The 400,000-gallon water tower has the storage capacity to

meet this recommended storage volume. Since the booster station has a stand-by emergency generator the 250,000 gallons of ground storage can also act as storage to meet the needs of the City.

9.6 BOOSTER STATION

The City of Miller's water system includes 250,000 gallons of ground storage. As discussed in the previous paragraphs, Miller's ground storage is considered "live" storage since the booster station has an emergency stand-by generator. Miller has three end suction pumps to move water from the ground storage tank to the water tower and distribution system. One pump is rated at 200 gpm. The other two pumps are rated at 700 gpm. Figure 9.4 is a photograph of the booster station building. Figure 9.5 shows a view of the pumps in the booster station.

Figure 9.4: Booster Pump Station

Figure 9.5: Booster Station Piping

9.7 DISTRIBUTION SYSTEM

According to available information the several types and sizes of water main used throughout the distribution system is shown in Figure 9.6. Currently, the City's piping consists of polyethylene (PE), polyvinyl chloride (PVC), cast iron pipe (CIP), ductile iron pipe (DIP) and asbestos cement pipe (ACP). The approximate total length of each size and type of pipe in the water distribution system is listed below.

Pipe Size	Pipe Type	Length
4	ACP	2,463
6	ACP	47,680
8	ACP	4,594
6	CIP	382
6	DIP	392
2	PE	6,131
2	PVC	4,943
6	PVC	31,415
8	PVC	315
10	PVC	881
12	PVC	184
		99,380

WATER MAP
CITY OF
MILLER
HAND COUNTY, SOUTH DAKOTA

SCALE: 1" = 800'

LEGEND

- 2" WATER MAIN
- 4" WATER MAIN
- 6" WATER MAIN
- 8" WATER MAIN
- 10" WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- HAND HYDRANT
- PVC PIPE
- TRANSITE PIPE
- PIPE AS LISTED

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

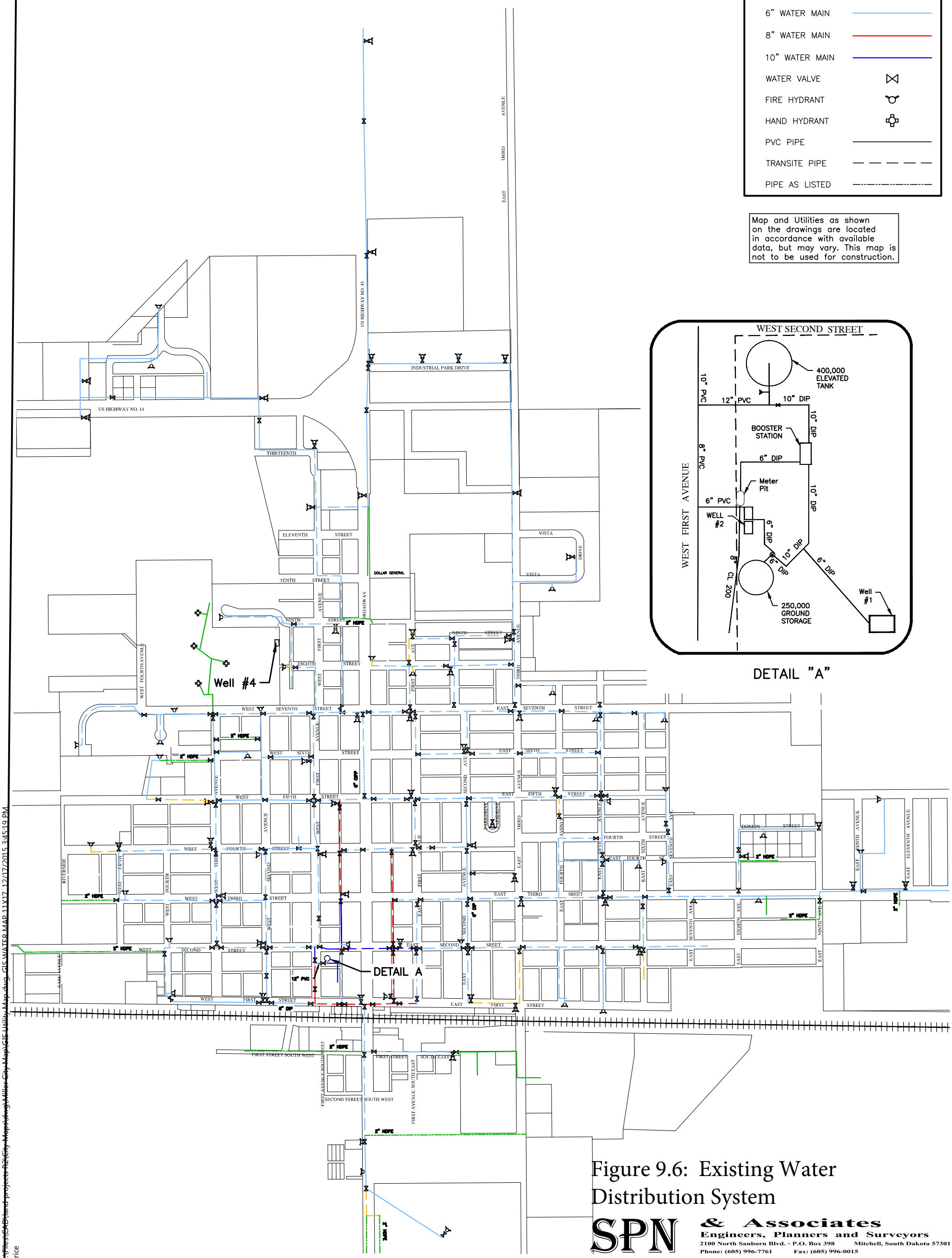


Figure 9.6: Existing Water Distribution System

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

G:\Files\CAD\land projects R2\City Maps\dwg\Miller City Map\GIS Utility Map.dwg, GIS WATER MAP 11X17, 12/17/2015 3:45:19 PM, drice

Approximately 55 percent of the distribution system piping is composed of ACP. The problem with the ACP is that the roughness coefficient is extremely low with pipe that is 40 years old. Calculations show that an 8-inch ACP is equal to a 7-inch PVC pipe and a 6-inch ACP is equal to a 5.3-inch PVC pipe. This roughness makes a substantial difference with fire flows.

The ACP has been noted to become brittle and break frequently, especially once it is exposed due to a repair, adding a connection or replacing a valve. The Environmental Protection Agency (EPA) indicates that the asbestos in the ACP is a fibrous material with high tensile strength. The asbestos was added to cement products as reinforcement to strengthen the material. The decay of this cement mixture allows asbestos to enter the drinking water. The EPA also states that asbestos may cause an increased risk of such health problems as developing benign intestinal polyps, lung disease, lung cancer, asbestosis (a respiratory disease) and mesothelioma (a form of cancer).

In addition, there are sections of CIP and DIP which are brittle and corroded. Typically, the inside of CIP will corrode over time. The corrosion can induce a build-up of scale which reduces the inside diameter and capacity of the pipe. The corrosion increases the roughness of the pipe which also reduces the capacity of the pipe by increasing friction. One section of DIP on East Second Avenue was installed as part of a soil remediation program where petroleum contaminated soil was present. This pipe has since been found to be severely corroded.

The Water Superintendent has indicated that the total frequency of water main breaks has been averaging around six per year which is high for this size of system. The soils in the area are considered to be corrosive; therefore, the exterior of the metallic pipes are typically quite corroded.

The main-line distribution system composed of pipe larger than two inches in diameter currently has approximately 27 dead ends. There are approximately 15 of these dead

ends that are not practically able to be looped due to their location. At a minimum, a fire hydrant should be located at the dead ends to properly flush and maintain water quality. Approximately five of the dead ends do not have fire hydrants. The City usually flushes the water mains twice a year. Without looping and multi-directional flow of water in the distribution system, water is supplied, for the most part, through a long single pipeline. In this type of distribution system, total water usage decreases the closer one gets toward the end of the lines. This results in decreased movement of water in the pipe and the possibility of exceptionally long retention times of the water in various segments of the pipe. Long retention times in a pipe can have a detrimental effect on the quality of the water in the pipe such as:

- A decrease in the disinfection levels in the water;
- An increase in the potential for the formation of carcinogenic disinfection process by-products; and
- An increased potential for the formation of biological growth.

9.7.1 Hydrants and Valves

The SD Department of Environment and Natural Resources (SD DENR), which is the state regulatory agency for public water supplies, requires that fire hydrants be served by water mains with a minimum diameter of six inches. There are approximately three hydrants that are served by four-inch lines. Hydrants used only for flushing dead-end lines may be located on four-inch mains. Figure 9.1 shown previously indicates the current main sizes of the City's distribution system. Based on available information there are approximately 96 hydrants.

There are an estimated 212 main-line water valves. Many of the old valves on the ACP lines are not working properly. For the most part, the spacing and locations of the valves appear to be sufficient to adequately maintain water service to the users of the system when portions of the system are taken offline due to maintenance or pipe repair. Overall, the water service valves are in unknown condition. City personnel access the valves only when necessary.

9.7.2 Hydraulic Evaluation

A hydraulic evaluation of the water system was conducted using the KY Pipe 2014 hydraulic computer model. This model utilizes the Hazen-Williams formula and commonly accepted friction factors for the pipeline material being considered to calculate head loss due to pipe friction and resulting flows and pressures. Two types of hydraulic analyses were performed with the hydraulic program to evaluate the City of Miller's distribution system. The first type is a general system analysis which provides a snapshot of the system at the set parameters. The second type is a fire flow analysis which predicts the fire flow from selected fire hydrants. The analyses were utilized to obtain a complete picture of the existing distribution system and to allow proper recommendations to be made that will improve the existing conditions.

Any hydraulic evaluation can find the existing water system to be inadequate by simply making the requirements very stringent. In the same manner, generally all systems are adequate to meet the average day demands. Deficiencies in a system are typically not apparent until system demands increase to provide the peak day or peak hour flows. The reason for this is that the flow rate in a pipeline significantly affects the downstream pressures. The friction loss, or the pressure loss, in a pipe is a function of the square of the velocity. Therefore, as the flow rate and corresponding velocity in a pipe increase, the resulting friction increases exponentially. As the flow rate increases above two feet per second, the corresponding friction loss begins to climb rapidly with a velocity of three feet per second generally considered the maximum desired velocity. As a result, it is common practice to evaluate the overall system deficiencies in a distribution system based on peak hour and peak day flows.

9.7.3 Modeled Flow Rates

The total water demand for the City consists of two main components. First, the non-residential use is modeled by distributing demands for the high water users throughout the water distribution model. The other component consists of a residential flow rate which is modeled at each metered connection. The water use demand is spread throughout the hydraulic model based on the density of housing and other connections.

Two sets of modeled system demands are created to place different loading conditions on the model:

- **Peak Hour Demand**

  Mays states that the peak hour to average day flow ratio typically ranges from 2.0 to 7.0:1. It is our opinion that the peak hour to average day ratio should be modeled as 3.84. This number was calculated by multiplying the highest usage shown in Figure 9.4 of 160 percent by the estimated peak day to average day ratio of 2.4. Therefore, the total modeled peak hour flow rate is estimated to be 672 gpm (0.252 MGD x 3.84 / 1440 minutes per day). This flow will be utilized in the general analysis to evaluate the distribution system's hydraulic capacity to maintain adequate water pressure during this high-use period.

  Approximately 16 percent of the total demand, or 110 gpm, is allotted to high water users which account for six of the total connections. The high user demands are spread throughout the model where the demands originate. The remainder of the demand, or 561 gpm, is for typical residential or light commercial use. The demands are spread throughout the model based on the density of housing and buildings at a rate of approximately 0.689 gpm per connection [561 gpm / (820 connections - 6 high rate users)] on the hydraulic model.

- **Peak Day Demand**

  The peak day demand in the models was set to approximately 0.604 MGD or 419 gpm based on the estimated water use projection discussed previously. This flow will be used in the fire flow analysis to evaluate potential fire flows.

  Approximately 16 percent of the total demand, or 69 gpm, is allotted to the high water users which account for six of the total connections. The high user demands are spread throughout the model where the demands originate. The remainder of the demand, or 350 gpm, is for residential use. The residential demands are spread throughout the model based on the density of housing at a rate of approximately 0.430 gpm per connection [350 gpm / (820 connections - 6 high rate users)] on the hydraulic model.

9.7.4 Pressure Analysis

To check the water system for low-pressure problems, hydraulic models are created with the following assumptions made:

- The peak hour demand is placed on the model according to Section 9.7.3.
- The operating elevation of the water towers is set to the mid-tank level which is approximately an elevation of 1,696 feet above mean sea level.
- The booster pumps that pump from the ground storage to the elevated storage are not operating.

SD DENR Recommended Design Criteria states in Section 8.4.2:

> *"A water distribution system shall be designed so as to provide a pressure of 20 pounds per square inch at each service outlet or connection under any or all conditions or demands that can be placed on the system. Under normal conditions, minimum pressures should be approximately 60 psi and not less than 35 psi."*

Section 7.3.1 of the Recommended Standards for Water Works by the Committee of the Great Lakes further recommends a minimum working pressure of 35 psi with a normal working pressure of 60 to 80 psi. The AWWA Distribution System Handbook by Mays states on page 3.8 that low operating pressures of less than 30 psi can result in annoying reductions in water flow when more than one water-using device is in service. The new minimum desired by many residents is 40 psi as that pressure is typically required to properly operate lawn sprinkler systems. Based on the references above, the recommended pressures for services are shown in Table 9.2.

Table 9.2: Recommended Pressures

Condition	Service Pressure Criteria (psi)
Maximum Pressure	60-80
Minimum Pressure During Peak Day	30-40
Minimum Pressure During Peak Hour	30
Minimum Pressure During Fire Flow	20

Figure 9.7 indicates that the operating pressures are above the minimum recommended pressure of 40 psi in all areas of the community. Figure 9.7 also shows the expected pipeline velocities during peak flow. Typically, three feet per second is the maximum recommended velocity since greater velocities introduce significant pressure loss within the water system. The hydraulic model results indicate all locations are below the recommended maximum velocity.

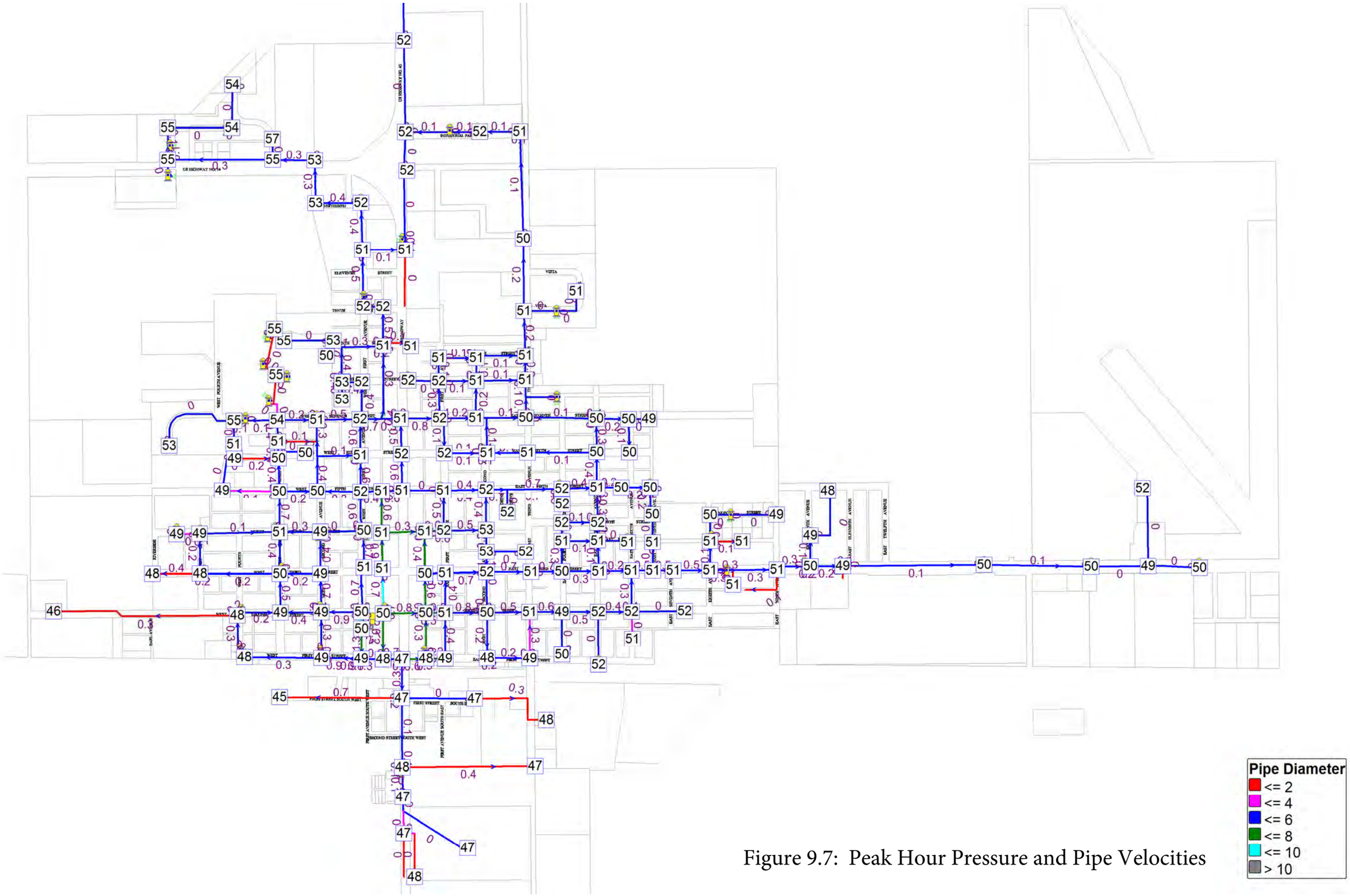


Figure 9.7: Peak Hour Pressure and Pipe Velocities

9.7.5 Fire Flow Simulation

In order to check the water system for low flow problems, hydraulic models are created with the following assumption made:

- The peak day demand is placed on the model according to Section 9.7.3.
- The operating level of the towers is set to the mid-tank level.
- The booster pumps are not operating.

Main pipelines are to deliver the needed fire flow to each hydrant in accordance with the ISO guidelines. The ISO guidelines are based on a number of variables including size of structure, construction material, occupancy, exposure and connections to other structures. For one- and two-family dwellings not exceeding two stories in height, the following needed fire flows are required:

Distance Between Buildings	Fire Flow Requirement
Over 100 feet	500 gpm
31 to 100 feet	750 gpm
11 to 30 feet	1,000 gpm
10 feet or less	1,500 gpm

As for the business district, the needed fire flow would be variable for each structure and an inspection and analysis of each structure would be required. Rather than performing these inspections and analyses, a minimum needed fire flow of 2,000 gpm is sought for business and school areas.

The fire flows that are estimated from the model are shown in Figure 9.8. As can be seen, many areas are served by fire flows that are less than the minimum required by ISO. The fire flows shown range from 250 gpm to 4,730 gpm. The low fire flows are due mainly to the long dead-end lines. The fire flow through a dead-end water main is typically lower than normal because of the increased friction and lack of multi-directional flow.

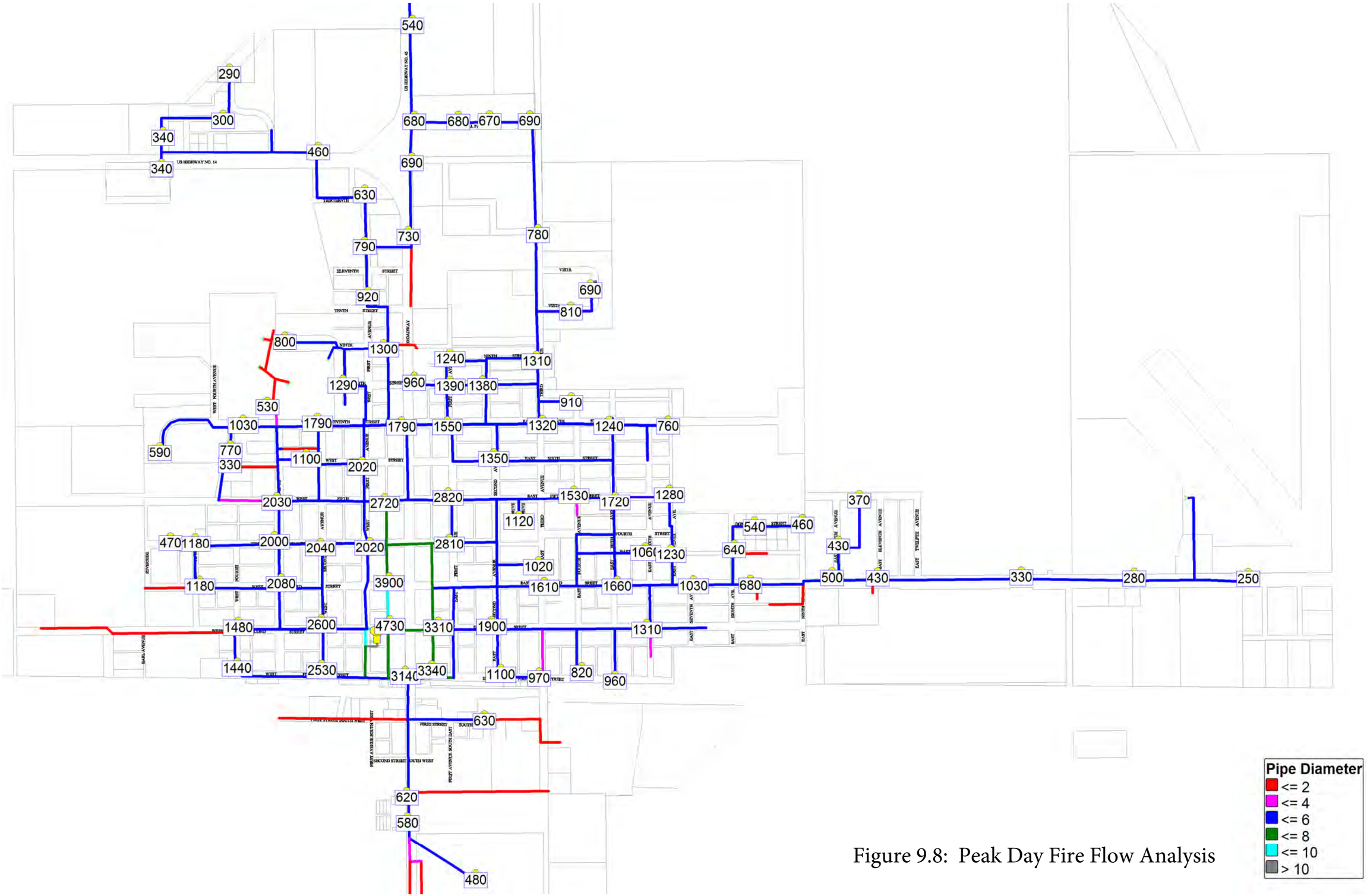


Figure 9.8: Peak Day Fire Flow Analysis

9.8 FUTURE CONDITIONS

Information related to project need and the planning area are found throughout Section 9 of this report. Specific information on population projections is found in Section 2.3. Land use is not expected to change significantly in the immediate vicinity of the City. There is some land available for future development and based on the past growth of the community, it is viewed as sufficient to meet community needs.

Due to the importance of conserving water, money and energy, various means for reducing wastewater flows and water usage are recommended. By using faucet aerators, reduced flush toilets, and limited flow showerheads, wastewater flow and water use can be reduced.

10 WATER SYSTEM ALTERNATIVES

10.1 GENERAL

The proposed improvements developed for the City of Miller were composed to demonstrate some possible options offered to fix the identified deficiencies in the water system.

10.2 CAUTIONARY NOTES CONCERNING COST ESTIMATES

The opinions of probable cost provided with the following alternatives reflect the anticipated costs for administration, engineering design, construction, contingencies, construction observation, and other costs related to completion of the project. The costs as presented are based on an analysis and comparison of projects of similar size and scope. The actual construction and project costs will vary on an individual project basis. The actual bid cost will reflect the bidder's evaluation of construction problems, weather, soils and difficulty of work. Thus, the engineer cannot be held responsible for the accuracy of the estimates made in this report as the engineer has no control over the contractors' bid costs.

Changes in materials, equipment and energy costs, as well as availability of other construction work at the time of the bid opening, could substantially influence actual project cost. Construction costs will also vary somewhat based on the quantity of items necessary to construct the project. The quantities and costs contained in this report are preliminary estimates based on our best judgment without field measurements. Final quantities and opinions of probable cost and final construction costs must be based upon final design.

Different funding sources have different requirements for some non-construction items. Therefore, actual costs of non-construction items should be considered tentative at this time and subject to later modifications and adjustments as current situations and funding sources dictate. Further, inasmuch as the period of construction cannot be accurately predicted, the costs as presented in this report have not been adjusted to reflect projected

inflation factors. Therefore, it is important that the estimate of costs as presented be reviewed and updated periodically to reflect construction cost trends.

10.3 EQUIVALENT UNIFORM ANNUAL COST

The equivalent uniform annual cost (EUAC) not only takes the capital costs into account when evaluating the options but also looks at the salvage value of the components and the expected annual operation and maintenance costs. The result is a comparison of the alternatives on an overall basis throughout a design life. The EUAC is eliminated from consideration since the proposed improvements presented subsequently offer one viable alternative for each set of improvements or would only be a factor of the capital cost, as in the case of distribution improvements.

10.4 WATER SOURCE IMPROVEMENTS

The City's wells have not been used for many years and should be properly abandoned. The most recent operating well has collapsed.

10.4.1 Water Source Option 1: Do Nothing

The City has a contract for rural water which makes the use of a well only a back-up water supply which is considered redundant and not completely necessary. The unused wells should be properly abandoned which makes the "Do Nothing" option not recommended.

10.4.2 Water Source Option 2: Abandon Wells

The City's three wells have not been used for many years and have become inoperable. This option considers the cost which is presented in Table 10.1 to properly abandon the wells. This option also includes the cost to demolish the existing buildings and associated above-ground pipe, fittings and valves.

Table 10.1: Estimated Costs for Abandoning Wells

Item	Description	Quantity		Unit Cost	Total Cost
1	Mobilization	1	LS	$5,000.00	$5,000.00
2	Demolish Buildings and Concrete Floors	1	LS	$15,000.00	$15,000.00
3	Remove and Dispose of Pipe, Valves and Fittings	1	LS	$3,000.00	$3,000.00
4	Abandon Well	3	EA	$8,000.00	$24,000.00
5	Cap Pipe	3	EA	$1,000.00	$3,000.00
				Subtotal	$50,000.00
				Contingencies (10%)	$5,000.00
				Construction Total	$55,000.00
				Legal and Administration Cost	$2,200.00
				Design Engineering	$4,500.00
				Bidding and Contract Documents	$2,000.00
				Construction Engineering	$6,000.00
				Total Project Cost	$69,700.00

10.4.3 Water Source Option 3: Well Improvements

The last working well in Miller has become inoperable. It is expected that achieving a working well will require a complete replacement because the casing pipe is likely to be collapsed. The estimated costs for the well improvements are presented in Table 10.2.

Table 10.2: Estimated Costs of Well Improvements

Item	Description	Quantity		Unit Cost	Total Cost
Well Drilling					
1	Mobilization	1	LS	$30,000.00	$30,000.00
2	5" Minimum Diameter Exploratory Hole	1,350	LF	$20.00	$27,000.00
3	Sampling, Analysis and Logging of Formation	1	LS	$2,500.00	$2,500.00
4	Drilling Bore Holes or Reaming of Pilot Hole	1,250	LF	$65.00	$81,250.00
5	10-Inch Steel Well Casing	1,250	LF	$60.00	$75,000.00
6	8-Inch Diameter Stainless Steel Slotted Screen	120	LF	$185.00	$22,200.00
7	Graded Filter Pack	120	LF	$100.00	$12,000.00
8	Grout Seal	1,250	LF	$50.00	$62,500.00
9	Well Development	120	Hr	$300.00	$36,000.00
10	Furnish, Install and Remove Pump and Discharge Column for Test Pumping	1	LS	$12,000.00	$12,000.00
11	Base Test Pumping	24	HR	$150.00	$3,600.00
12	Aquifer Recovery Measurements	12	HR	$150.00	$1,800.00
13	Well Disinfection	1	LS	$150.00	$150.00
14	Pitless Discharge Unit	1	LS	$12,000.00	$12,000.00
				Subtotal	**$378,000.00**
Well Pump and Piping					
15	Mobilization	1	LS	$5,000.00	$5,000.00
16	Furnish and Install 25 HP, 200 GPM Well Pump and Motor	1	EA	$6,660.00	$6,660.00
17	Furnish and Install Inline 4" Check Valve	2	EA	$400.00	$800.00
18	Furnish and Install Submersible Pump Wiring	1,230	LF	$5.00	$6,150.00
19	Furnish and Install 4" Schedule 40 Column Piping	1,210	LF	$20.00	$24,200.00
20	Furnish and Install 6" PVC Underground Piping	100	LF	$40.00	$4,000.00
21	Furnish and Install Fire Hydrant with 6" Gate Valve	1	EA	$4,200.00	$4,200.00
				Subtotal	**$51,010.00**
Abandon Three Existing Wells					
22	Abandon Existing Well	3	EA	$11,000.00	$33,000.00
23	Cap Water Main	3	EA	$1,500.00	$4,500.00
24	Remove Above Ground Well Piping and Related Items	1	LS	$3,000.00	$3,000.00
				Subtotal	**$40,500.00**
				Construction Cost	$469,510.00
				Contingencies	$47,000.00
				Total Construction Cost	$516,510.00
				Legal and Administration Cost	$10,300.00
				Design Engineering	$35,600.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$42,700.00
				Total Project Cost	$611,110.00

10.5 WATER STORAGE IMPROVEMENTS

No improvements are recommended.

10.6 BOOSTER STATION IMPROVEMENTS

No improvements are recommended.

10.7 WATER DISTRIBUTION IMPROVEMENTS

The operating characteristics and deficiencies of the water distribution system are discussed in detail in Section 9 of this report. The following is a summary of the deficiencies of Miller's water distribution system.

- The average water loss rate for the period of record is 34 percent.
- Approximately 55 percent of the distribution system piping is composed of ACP. There are also sections of CIP and DIP which should be replaced.
- There are approximately 27 dead ends when considering the portion of the system made up of piping larger than two-inch diameter. At a minimum, a fire hydrant should be located at each dead end for flushing. There are approximately 15 of these dead ends that are not practically able to be looped due to their location.
- There are approximately four fire hydrants that are served by four-inch diameter water mains.
- Estimated fire flows are lower than those desired for insurance and fire-fighting purposes in some locations.

10.7.1 Water System Option 1: Do Nothing

One option for water system improvements is to do nothing. This is not feasible because it will not include replacement of the ACP or rectify the excessive water losses currently occurring. As a result, doing nothing is not considered as an acceptable option.

10.7.2 Water System Option 2: Replace ACP Next to Sewer Improvements

The ACP throughout the City is becoming increasingly problematic. The ACP has been noted to become brittle and break frequently, especially once it is exposed due to a repair, adding a connection or replacing a valve. Because of these issues and the potential health risks from the asbestos contained in the pipes, the pipe should be replaced. Option 2 also

considers the looping of water main where practical and the extension of water main to areas on the south end of Third Avenue and the west end of Second Street.

Option 2 considers the replacement of the ACP within the distribution system where sanitary or storm sewer work is proposed. Option 2 is further broken down into three phases to follow the work laid out in the proposed phased approach of the sanitary sewer work. The replacement of piping highlighted in Figure 10.1 is proposed for this option.

As shown in Figure 10.2, the pressures are not improved by a significant amount overall. There are some regional pressures that increase slightly due to the proposed piping. The fire flows shown in Figure 10.3 are improved, especially in the vicinity of pipe replacement. For example, the fire flow at East First Street and Fourth Avenue was at 820 gpm and is now expected to increase to 2,180 gpm. This is due to the replacement of the ACP which restricted flow and the installation of pipe for looping the water main.

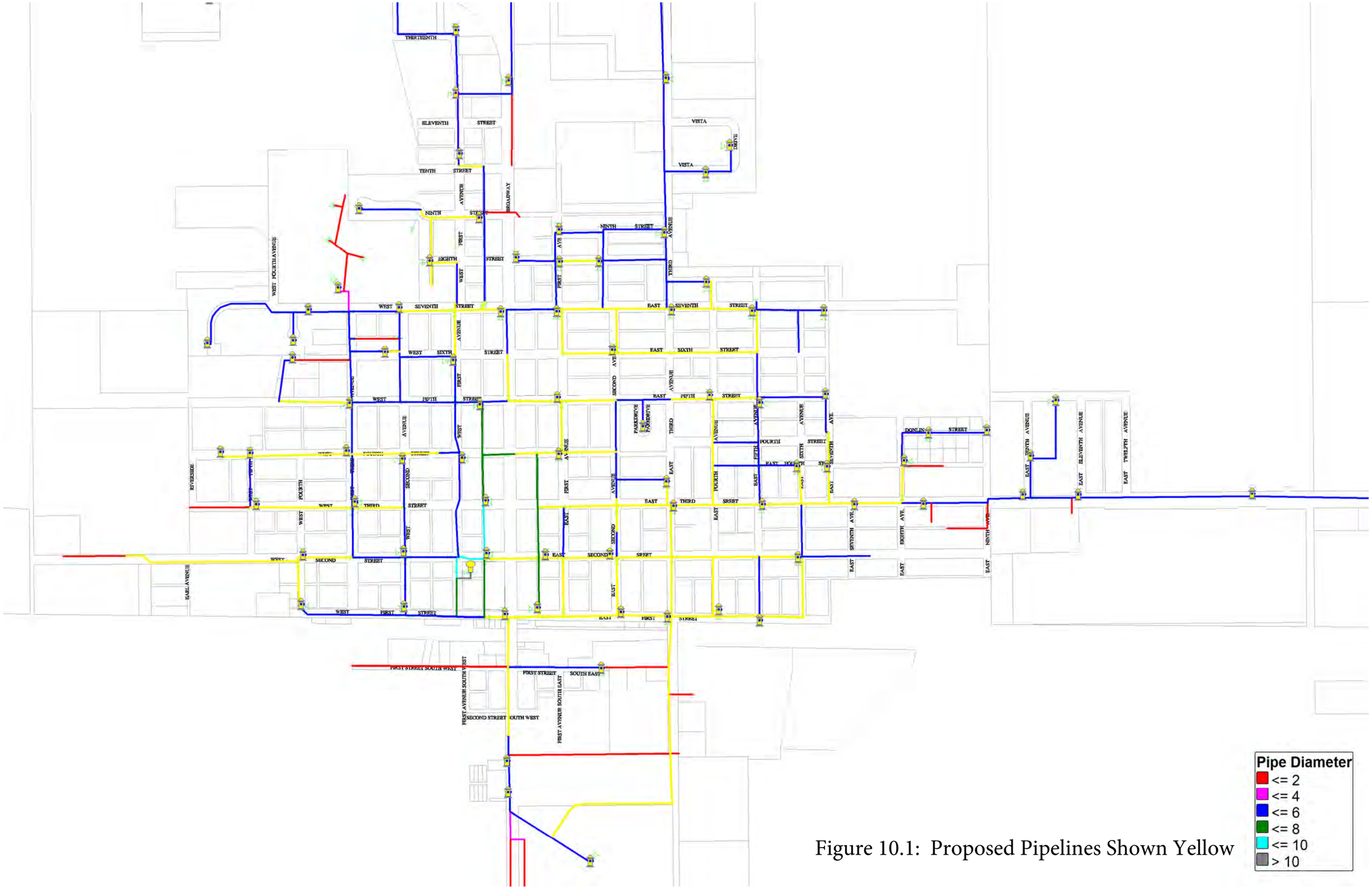


Figure 10.1: Proposed Pipelines Shown Yellow

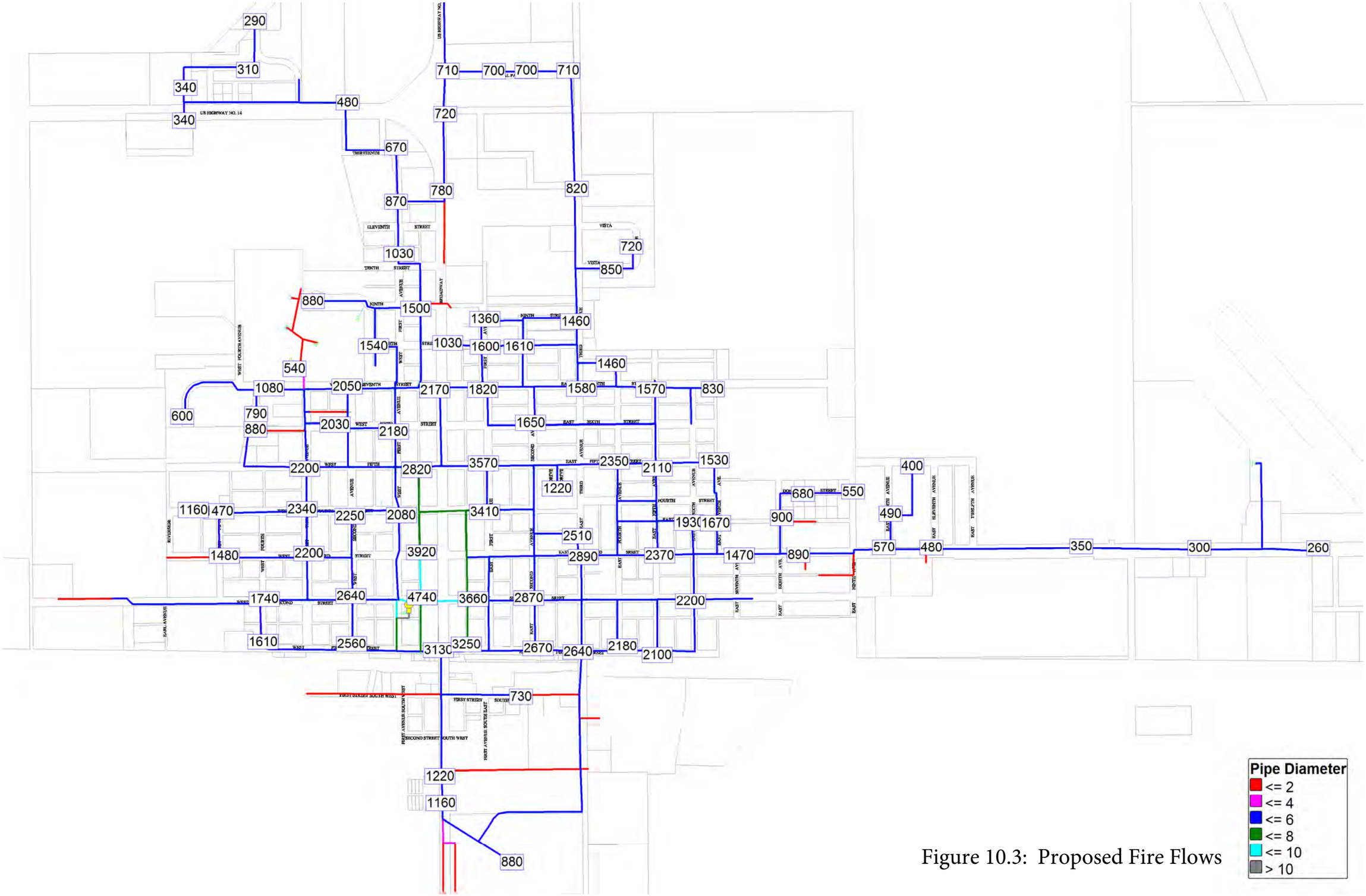


Figure 10.3: Proposed Fire Flows

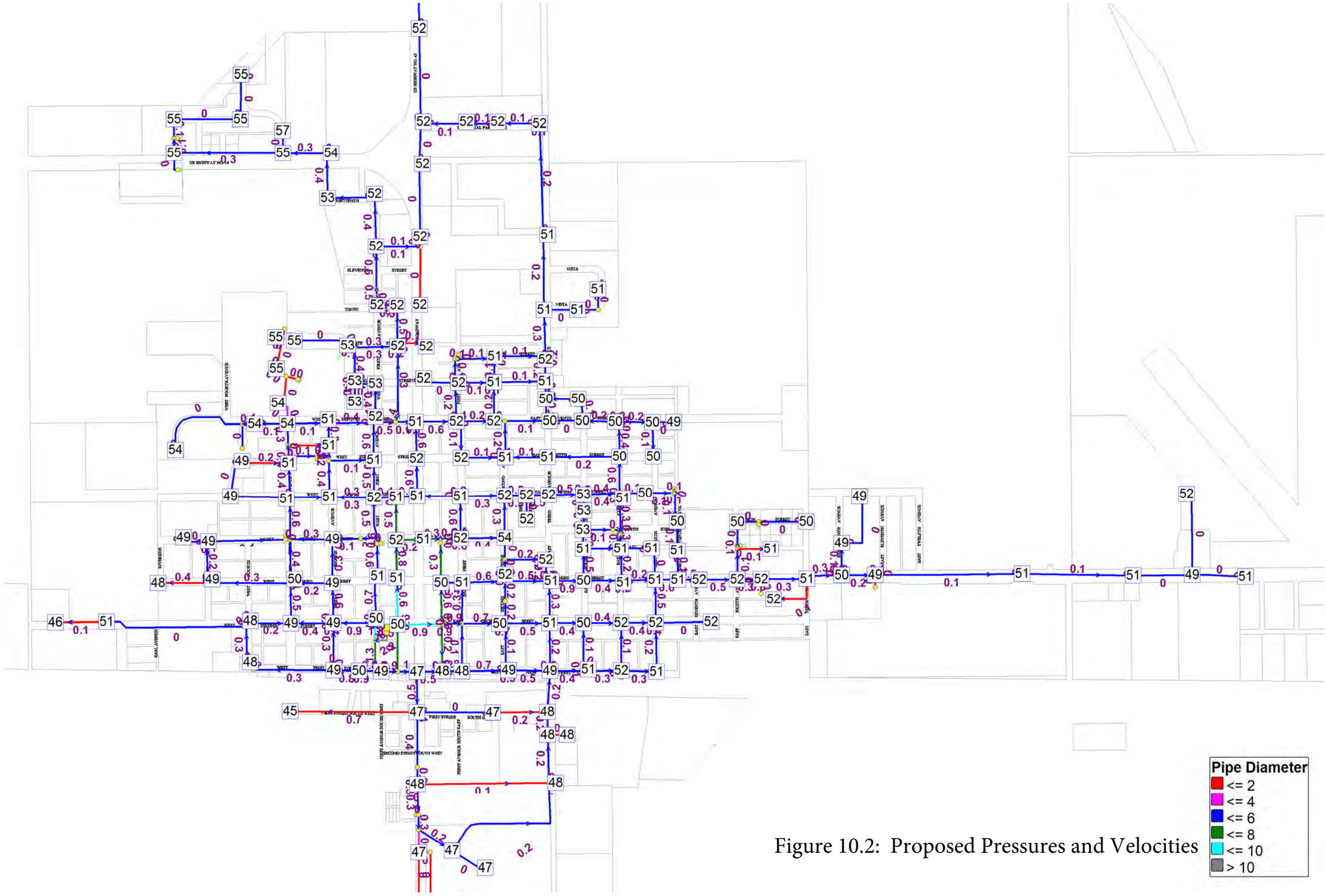


Figure 10.2: Proposed Pressures and Velocities

10.7.2.1 Water Distribution Phase 1

The first phase of work will be implemented in the general southeast area of the City where the first phase of sanitary sewer is proposed. Refer to Figure 10.4 for a map showing the phases of implementation of Option 2. Phase 1 also includes the looping of water main on East First Street and the water main extension on the south end of Third Avenue since this piping is in the general area of water main improvements proposed for this phase. The estimated costs associated with the Phase 1 improvements are presented in Table 10.3 which includes the estimated costs for new pipe with associated fittings, connections, service piping, street work and related items.

10.7.2.2 Water Distribution Phase 2

The second phase of work involves the corresponding general area of the second phase of sanitary sewer improvements. The estimated costs associated with the Phase 2 improvements are presented in Table 10.4.

10.7.2.3 Water Distribution Phase 3

The third phase of work includes the west side of the City where the third phase of sanitary sewer improvements is proposed. This phase also includes the remaining portion of the looping necessary on the far south part of the City and the water main extension on the west end of Second Street. The estimated costs associated with the Phase 3 improvements are presented in Table 10.5.

WATER MAP
CITY OF
MILLER
HAND COUNTY, SOUTH DAKOTA

SCALE: 1" = 800'

LEGEND

- 2" WATER MAIN
- 4" WATER MAIN
- 6" WATER MAIN
- 8" WATER MAIN
- 10" WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- HAND HYDRANT
- PVC PIPE
- TRANSITE PIPE
- PIPE AS LISTED
- PHASE 1
- PHASE 2
- PHASE 3

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

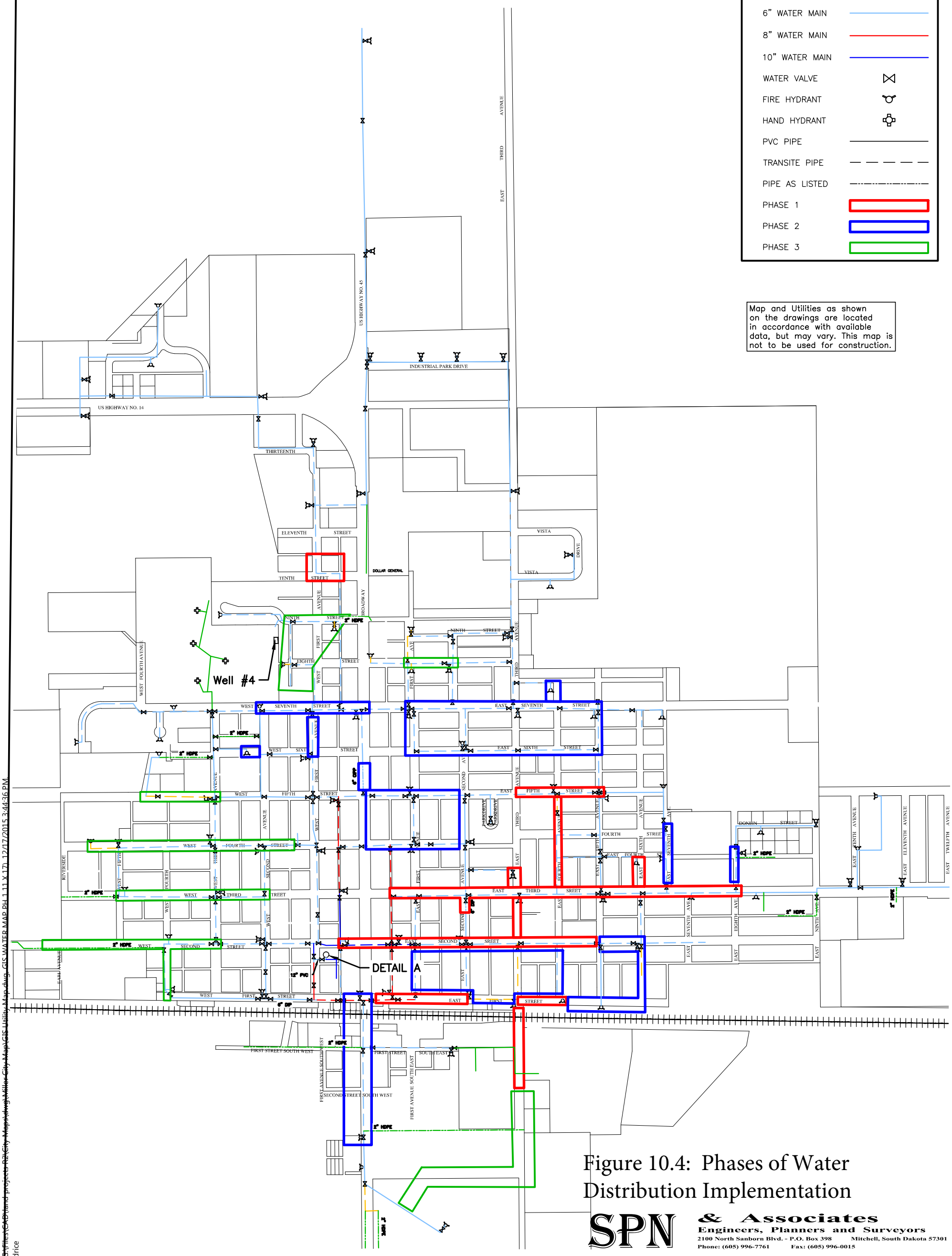


Figure 10.4: Phases of Water Distribution Implementation

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

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Table 10.3: Estimated Costs of Water Distribution Phase 1

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$118,000.00	$118,000.00
2	Pulverize and Salvage Existing Asphalt	13,800	SY	$3.50	$48,300.00
3	Remove Sidewalk	360	SY	$3.50	$1,260.00
4	Full Depth Concrete Saw Cut	1,200	FT	$10.00	$12,000.00
5	Full Depth Asphalt Saw Cut	410	FT	$5.00	$2,050.00
6	Remove and Dispose Existing Valve and Box	35	EA	$250.00	$8,750.00
7	Remove and Dispose Existing Fire Hydrant	12	EA	$350.00	$4,200.00
8	Directional Boring 10" Water Main	150	FT	$100.00	$15,000.00
9	Directional Boring 6" Water Main	120	FT	$80.00	$9,600.00
10	6" Water Main	7,260	FT	$28.00	$203,280.00
11	8" Water Main	1,000	FT	$32.00	$32,000.00
12	10" Water Main	850	FT	$40.00	$34,000.00
13	Fire Hydrant	23	EA	$3,200.00	$73,600.00
14	6" PVC Fire Hydrant Lead	460	FT	$28.00	$12,880.00
15	6" Gate Valve	69	EA	$1,100.00	$75,900.00
16	8" Gate Valve	5	EA	$1,500.00	$7,500.00
17	10" Gate Valve	2	EA	$2,500.00	$5,000.00
18	Miscellaneous Fittings and Connections	1	LS	$100,600.00	$100,600.00
19	1" Curb Stop w/Box	134	EA	$240.00	$32,160.00
20	2" Curb Stop w/ Box	5	EA	$450.00	$2,250.00
21	1" Service Line	4,422	LF	$25.00	$110,550.00
22	2" Service Line	165	LF	$32.00	$5,280.00
23	4" Concrete Sidewalk	3,240	SF	$6.00	$19,440.00
24	Place Recycled Asphalt	13,800	SY	$2.00	$27,600.00
25	Fine Grading of Base Material	13,800	SY	$1.00	$13,800.00
26	Gravel Base or Surfacing	6,700	TN	$22.00	$147,400.00
27	Asphalt Paving	2,600	TN	$120.00	$312,000.00
28	Blotter Coat Surfacing	5,200	SY	$8.00	$41,600.00
29	Traffic Control	1	LS	$15,000.00	$15,000.00
30	Erosion Control	1	LS	$4,000.00	$4,000.00
31	Incidental Construction	1	LS	$96,400.00	$96,400.00
				Subtotal	$1,591,400.00
				Contingencies	$159,100.00
				Total Construction Cost	$1,750,500.00
				Legal and Administration Cost	$35,000.00
				Design Engineering	$112,500.00
				Bidding Phase Engineering	$10,000.00
				Construction Engineering	$202,500.00
				Total Project Cost	$2,110,500.00

Table 10.4: Estimated Costs of Water Distribution Phase 2

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$132,000.00	$132,000.00
2	Pulverize and Salvage Existing Asphalt	22,300	SY	$3.50	$78,050.00
3	Remove Sidewalk	500	SY	$3.50	$1,750.00
4	Full Depth Concrete Saw Cut	1,600	FT	$10.00	$16,000.00
5	Full Depth Asphalt Saw Cut	840	FT	$5.00	$4,200.00
6	Remove and Dispose Existing Valve and Box	44	EA	$250.00	$11,000.00
7	Remove and Dispose Existing Fire Hydrant	23	EA	$350.00	$8,050.00
8	6" Water Main	12,400	FT	$28.00	$347,200.00
9	8" Water Main	1,000	FT	$32.00	$32,000.00
10	Fire Hydrant	31	EA	$3,200.00	$99,200.00
11	6" PVC Fire Hydrant Lead	620	FT	$28.00	$17,360.00
12	6" Gate Valve	82	EA	$1,100.00	$90,200.00
13	8" Gate Valve	3	EA	$1,500.00	$4,500.00
14	Miscellaneous Fittings and Connections	1	LS	$141,400.00	$141,400.00
15	1" Curb Stop w/Box	178	EA	$240.00	$42,720.00
16	2" Curb Stop w/ Box	3	EA	$450.00	$1,350.00
17	1" Service Line	5,874	LF	$25.00	$146,850.00
18	2" Service Line	100	LF	$32.00	$3,200.00
19	4" Concrete Sidewalk	4,500	SF	$6.00	$27,000.00
20	Place Recycled Asphalt	22,300	SY	$2.00	$44,600.00
21	Fine Grading of Base Material	22,300	SY	$1.00	$22,300.00
22	Gravel Base	9,100	TN	$22.00	$200,200.00
23	Blotter Coat Surfacing	22,300	SY	$8.00	$178,400.00
24	Traffic Control	1	LS	$15,000.00	$15,000.00
25	Erosion Control	1	LS	$4,000.00	$4,000.00
26	Incidental Construction	1	LS	$107,600.00	$107,600.00
				Subtotal	$1,776,130.00
				Contingencies	$177,600.00
				Total Construction Cost	$1,953,730.00
				Legal and Administration Cost	$39,100.00
				Design Engineering	$124,000.00
				Bidding Phase Engineering	$10,000.00
				Construction Engineering	$223,200.00
				Total Project Cost	$2,350,030.00

Table 10.5: Estimated Costs of Water Distribution Phase 3

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$82,000.00	$82,000.00
2	Pulverize and Salvage Existing Asphalt	10,800	SY	$3.50	$37,800.00
3	Remove Sidewalk	300	SY	$3.50	$1,050.00
4	Full Depth Concrete Saw Cut	1,000	FT	$10.00	$10,000.00
5	Full Depth Asphalt Saw Cut	530	FT	$5.00	$2,650.00
6	Remove and Dispose Existing Valve and Box	23	EA	$250.00	$5,750.00
7	Remove and Dispose Existing Fire Hydrant	6	EA	$350.00	$2,100.00
8	6" Water Main	9,890	FT	$28.00	$276,920.00
9	Fire Hydrant	19	EA	$3,200.00	$60,800.00
10	6" PVC Fire Hydrant Lead	380	FT	$28.00	$10,640.00
11	6" Gate Valve	59	EA	$1,100.00	$64,900.00
12	Miscellaneous Fittings and Connections	1	LS	$98,500.00	$98,500.00
13	1" Curb Stop w/Box	116	EA	$240.00	$27,840.00
14	2" Curb Stop w/ Box	3	EA	$450.00	$1,350.00
15	1" Service Line	3,828	LF	$25.00	$95,700.00
16	2" Service Line	99	LF	$32.00	$3,168.00
17	4" Concrete Sidewalk	2,700	SF	$6.00	$16,200.00
18	Place Recycled Asphalt	10,800	SY	$2.00	$21,600.00
19	Fine Grading of Base Material	10,800	SY	$1.00	$10,800.00
20	Gravel Base and Surfacing	5,000	TN	$22.00	$110,000.00
21	Blotter Coat Surfacing	10,800	SY	$8.00	$86,400.00
22	Traffic Control	1	LS	$15,000.00	$15,000.00
23	Erosion Control	1	LS	$4,000.00	$4,000.00
24	Incidental Construction	1	LS	$67,400.00	$67,400.00
				Subtotal	$1,112,568.00
				Contingencies	$111,300.00
				Total Construction Cost	$1,223,868.00
				Legal and Administration Cost	$24,500.00
				Design Engineering	$82,800.00
				Bidding Phase Engineering	$10,000.00
				Construction Engineering	$149,000.00
				Total Project Cost	$1,490,168.00

10.7.3 Water System Option 3: Replace Remaining ACP

Option 3 considers the replacement of the remaining ACP which was not replaced as part of Phase 1 through 3. The estimated costs associated with the Option 3 improvements are presented in Table 10.6 which includes the estimated costs for new pipe with associated fittings, connections, service piping, street work and related items. The highlighted piping shown in Figure 10.5 is proposed for this option.

As shown in Figure 10.6, the pressures are not improved by a significant amount overall. The fire flows shown in Figure 10.7 are improved, especially in the vicinity of pipe replacement. For example, Figure 10.3 indicated a fire flow of 1,360 gpm on East Ninth Street and First Avenue; the proposed fire flow after the implementation of Option 3 would result in an expected fire flow of 1,760 gpm.

Table 10.6: Estimated Costs of Remaining ACP Replacement

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$220,000.00	$220,000.00
2	Pulverize and Salvage Existing Asphalt	46,500	SY	$3.50	$162,750.00
3	Remove Sidewalk	480	SY	$3.50	$1,680.00
4	Full Depth Concrete Saw Cut	1,500	FT	$10.00	$15,000.00
5	Full Depth Asphalt Saw Cut	1,220	FT	$5.00	$6,100.00
6	Remove and Dispose Existing Valve and Box	51	EA	$250.00	$12,750.00
7	Remove and Dispose Existing Fire Hydrant	10	EA	$350.00	$3,500.00
8	6" Water Main	27,850	FT	$28.00	$779,800.00
9	Fire Hydrant	35	EA	$3,200.00	$112,000.00
10	6"Fire Hydrant Lead	700	FT	$28.00	$19,600.00
11	6" Gate Valve	51	EA	$1,100.00	$56,100.00
12	Miscellaneous Fittings and Connections	1	LS	$163,600.00	$163,600.00
14	1" Curb Stop w/Box	172	EA	$240.00	$41,280.00
15	1" Service Line	6,020	FT	$25.00	$150,500.00
18	Place Recycled Asphalt	46,500	SY	$2.00	$93,000.00
19	Fine Grading of Base Material	46,500	SY	$1.00	$46,500.00
18	Gravel Base	20,300	TN	$22.00	$446,600.00
19	Blotter Coat Surfacing	46,500	SY	$8.00	$372,000.00
20	Traffic Control	1	LS	$7,500.00	$7,500.00
21	Erosion Control	1	LS	$7,500.00	$7,500.00
22	Incidental Construction	1	LS	$249,800.00	$249,800.00
				Subtotal	$2,967,560.00
				Contingencies	$296,800.00
				Total Construction Cost	$3,264,360.00
				Legal and Administration Cost	$65,300.00
				Design Engineering	$174,000.00
				Bidding Phase Engineering	$10,000.00
				Construction Engineering	$261,000.00
				Total Project Cost	$3,774,660.00

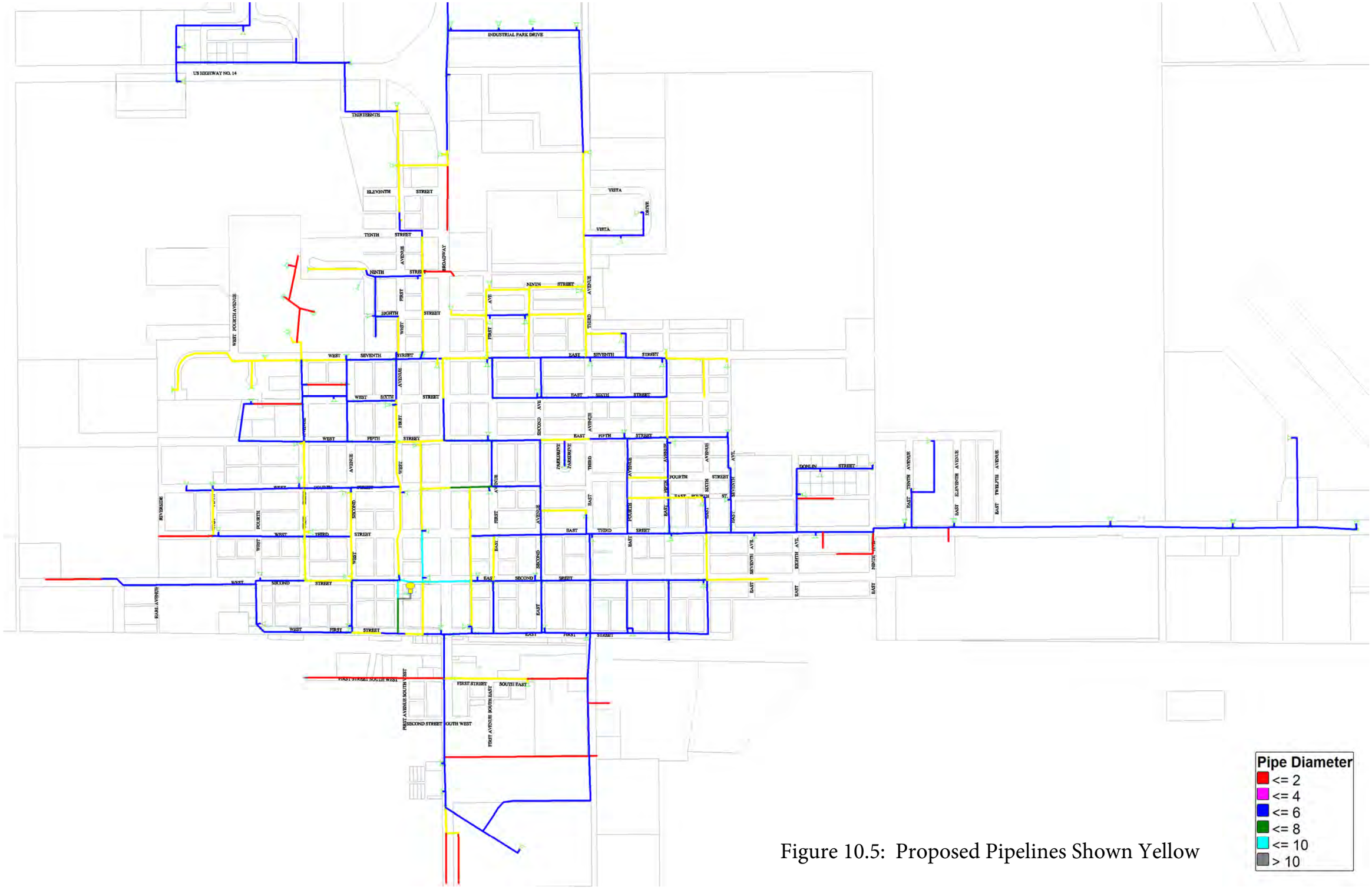

Figure 10.5: Proposed Pipelines Shown Yellow

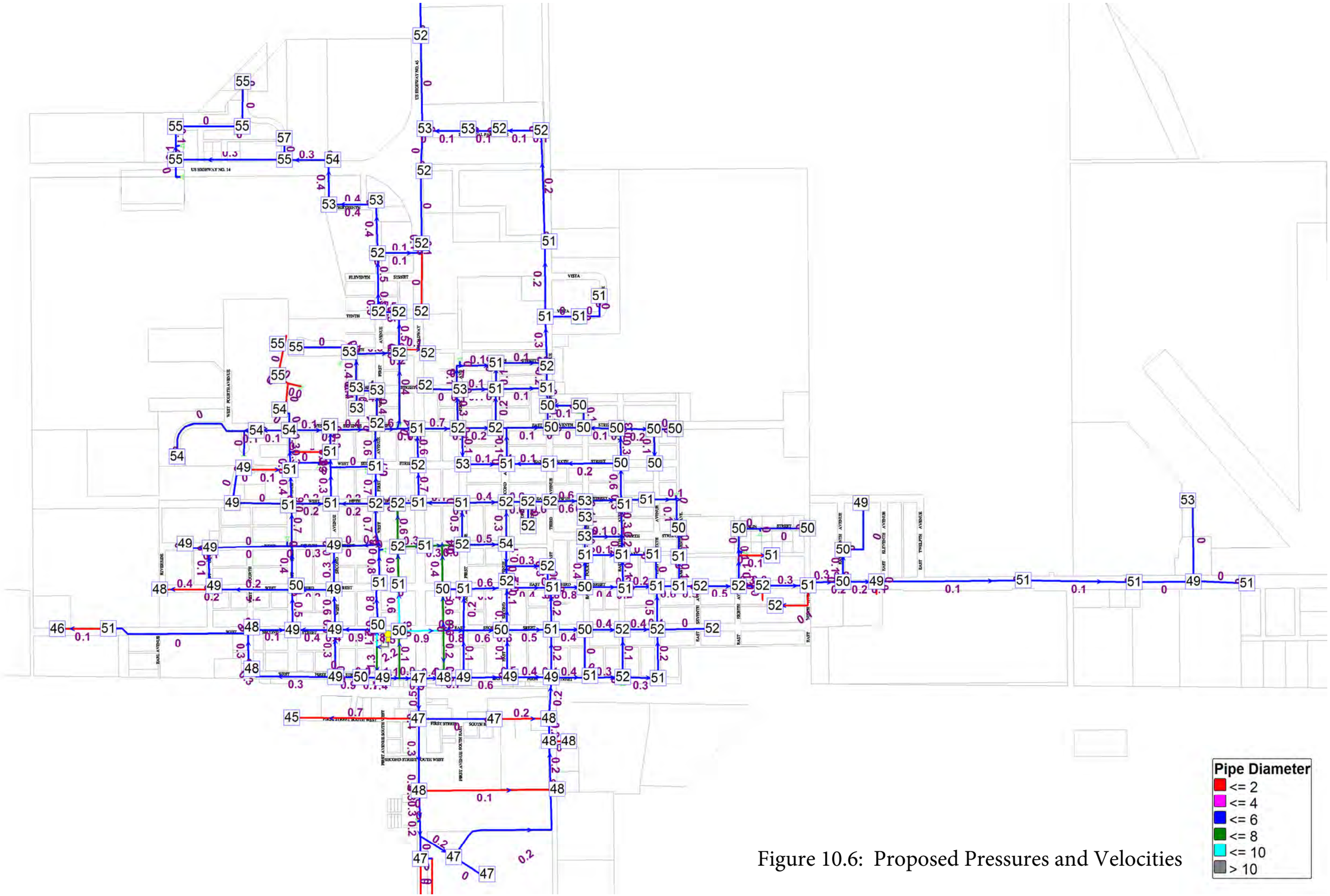

Figure 10.6: Proposed Pressures and Velocities

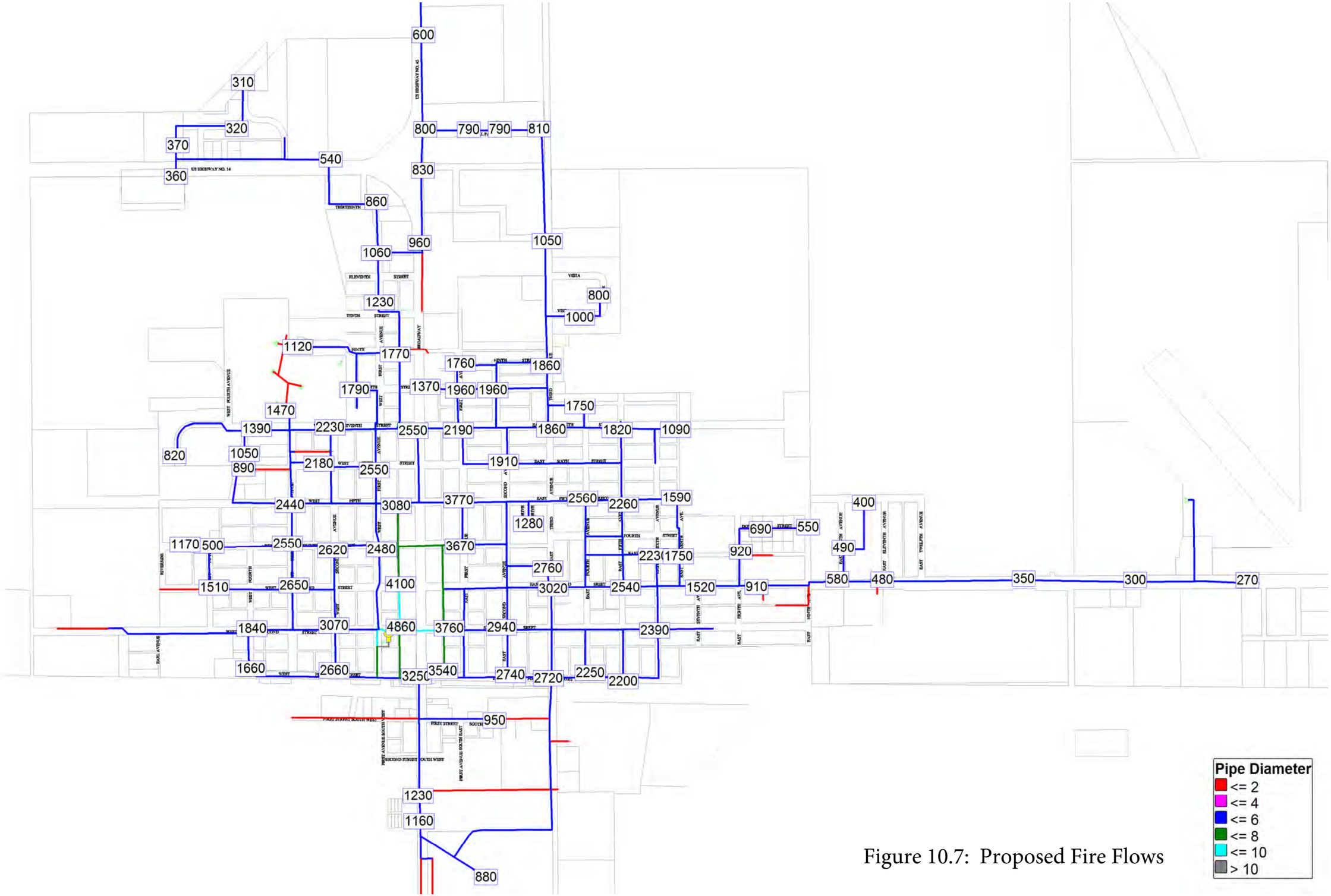

Figure 10.7: Proposed Fire Flows

10.7.4 Water System Option 4: Alley Surfacing

The City completed an urgent water main replacement project in 2010 because of leaking pipe. The alley over which the repair took place has not been resurfaced to date, much to the dismay of local businesses who regularly use this alley. The design of the proposed resurfacing has been completed. The City would like to include the bidding and construction of this work in an overall project. Therefore, the estimated cost for this work is presented in Table 10.7. The location of the needed resurfacing is shown in Figure 10.8.

Table 10.7: Estimated Costs of Alley Surfacing

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$4,900.00	$4,900.00
2	Asphalt Saw Cut	14	LF	$5.00	$70.00
3	Concrete Saw Cut	225	LF	$8.00	$1,800.00
4	Remove and Dispose of Asphalt	20	SY	$4.00	$80.00
5	Remove and Dispose of Concrete	754	SF	$1.50	$1,131.00
6	Remove and Salvage Gravel Surfacing	720	SY	$3.00	$2,160.00
7	Unclassified Excavation	117	CY	$15.00	$1,755.00
8	Spreading and Fine Grading of Base Material	610	SY	$3.00	$1,830.00
9	Concrete Curb and Gutter	50	LF	$40.00	$2,000.00
10	3-Foot Concrete Valley Gutter	295	LF	$20.00	$5,900.00
11	Concrete Paving	1,210	SF	$12.00	$14,520.00
12	Gravel Base Course	280	TN	$24.00	$6,720.00
13	Asphalt Concrete Pavement	110	TN	$135.00	$14,850.00
14	Salvage and Reset Inlet Grate	1	EA	$500.00	$500.00
15	Adjust Water Valve or Curb Stop to Grade	11	EA	$300.00	$3,300.00
16	Miscellaneous Traffic Control	1	LS	$4,000.00	$4,000.00
17	Inlet Protection	1	EA	$500.00	$500.00
18	Seeding and Fertilizing	1	LS	$500.00	$500.00
				Subtotal	$66,516.00
				Contingencies	$6,700.00
				Total Construction Cost	$73,216.00
				Legal and Administration Cost	$1,500.00
				Design Engineering	$0.00
				Bidding Phase Engineering	$3,500.00
				Construction Engineering	$8,400.00
				Total Project Cost	$86,616.00

WATER MAP
CITY OF
MILLER
HAND COUNTY, SOUTH DAKOTA

SCALE: 1" = 800'

LEGEND

- 2" WATER MAIN
- 4" WATER MAIN
- 6" WATER MAIN
- 8" WATER MAIN
- 10" WATER MAIN
- WATER VALVE
- FIRE HYDRANT
- HAND HYDRANT
- PVC PIPE
- TRANSITE PIPE
- PIPE AS LISTED

Map and Utilities as shown on the drawings are located in accordance with available data, but may vary. This map is not to be used for construction.

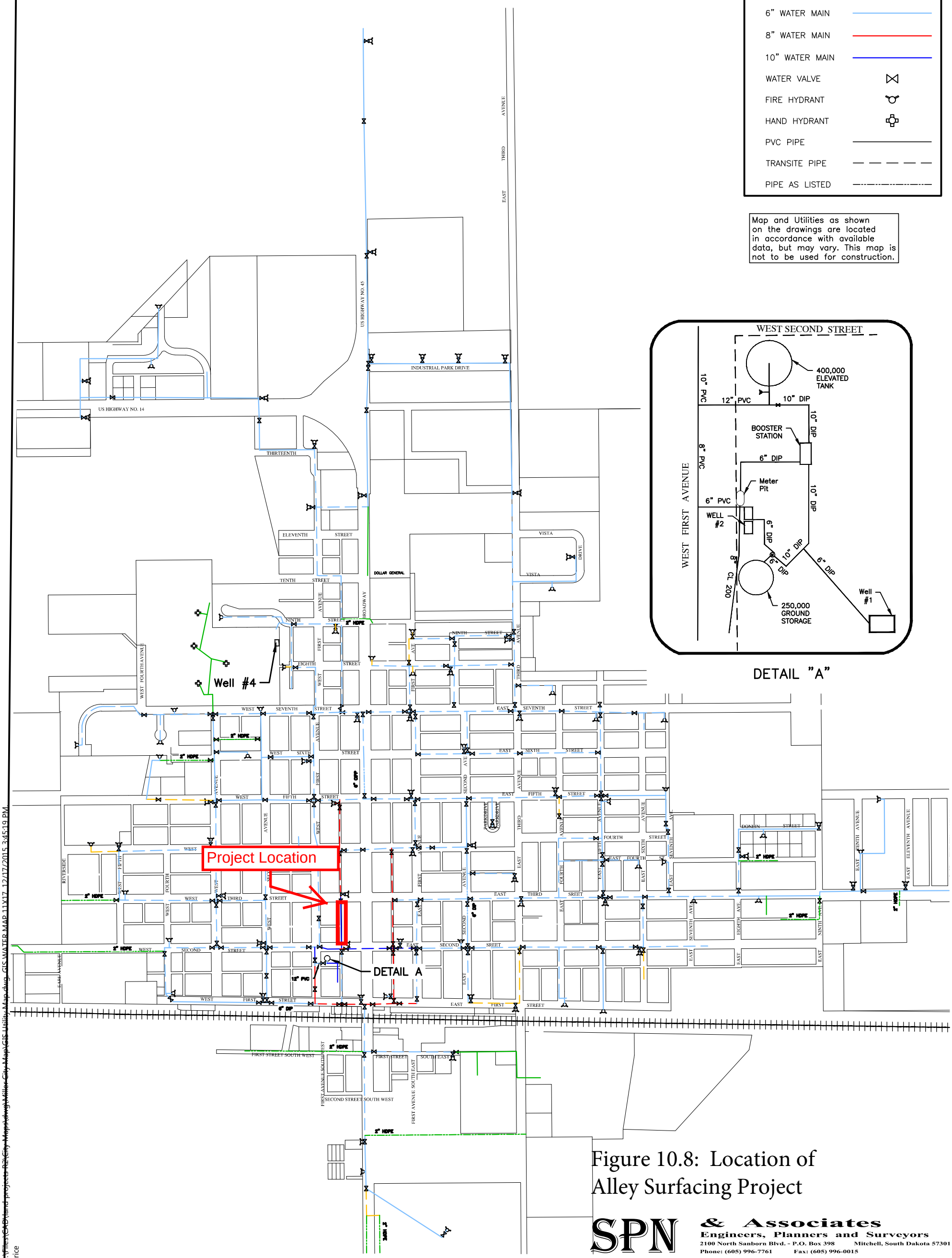

Figure 10.8: Location of Alley Surfacing Project

SPN & Associates
Engineers, Planners and Surveyors
2100 North Sanborn Blvd. - P.O. Box 398 Mitchell, South Dakota 57301
Phone: (605) 996-7761 Fax: (605) 996-0015

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10.8 OPTIMUM OPERATION OF EXISTING FACILITIES

The existing facilities are being operated in the most efficient manner that can be accomplished, considering the deficiencies and problems that will be addressed in the proposed improvements.

10.9 REGIONALIZATION

Regionalization is not a feasible approach to solving the problems identified.

11 WATER SYSTEM ALTERNATIVES

A summary of the total project costs for each of the improvement options discussed in Section 10 is presented in Table 11.1. The recommended improvements are also tabulated in Table 11.1 and discussed below.

Table 11.1: Summary of Costs

Improvement Options	Cost	Recommended for Phase 1	Recommended for Phase 2	Recommended for Phase 3
Abandon Wells	$69,700			$69,700
Well Improvements	$611,110			
Water Distribution Phase 1	$2,110,500	$2,110,500		
Water Distribution Phase 2	$2,350,030		$2,350,030	
Water Distribution Phase 3	$1,490,168			$1,490,168
Replace Remaining ACP	$3,774,660			
Alley Surfacing	$86,616	$86,616		
Total Water System Costs		**$2,197,116**	**$2,350,030**	**$1,559,868**

11.1 WATER SOURCE IMPROVEMENTS

The "Do Nothing" option is not recommended since the unused wells should be properly abandoned. Water Source Option 2 (Abandon Wells) is recommended. Water Source Option 3 (Well Improvements) is not recommended as the capital cost of a new well is substantial, especially considering the benefits gained from a back-up well.

11.2 WATER STORAGE IMPROVEMENTS

No improvements are necessary.

11.3 BOOSTER STATION IMPROVEMENTS

No improvements are necessary.

11.4 WATER DISTRIBUTION IMPROVEMENTS

Option 2 (Replace ACP Adjacent to Sewer Improvements) is recommended to begin a replacement strategy for the ACP. The first phase of improvements will go along well with the proposed sanitary sewer improvements to reduce overall costs. Upon completion of the Phase 1 water system improvements, Phases 2 and 3 should also be implemented subsequently. Option 3 (Replace Remaining ACP) is not recommended at this time. The City can consider this work as funding becomes available. Option 4 (Alley Surfacing) is recommended to provide a new driving surface for one block of alley where a water main replacement project disturbed the surface in 2010.

11.5 DEMONSTRATION OF FINANCIAL CAPABILITY

As part of the cost analysis of the recommended improvements, the City's ability to pay for the projects is evaluated. The total costs of the improvements are listed in Table 11.1. For the purpose of this financial evaluation, the total cost of the improvements is assumed to be eligible for a low interest loan from the DENR's State Revolving Fund program. This, however, is subject to change due to decisions that must be made by the appropriate funding agencies.

Table 11.2 summarizes the financial data that was supplied by the City Finance Officer and is used to determine the proposed operational surplus or deficit of the Water Fund. The budgeted revenues generated from user fees are listed in Table 11.2. The budget analysis indicates that the current revenue is insufficient when short-lived asset replacement costs are deducted. The short-lived asset calculations are shown in Table 11.3.

Table 11.2: Operation of the Water Fund

	Water Budget 2015	Water Budget 2016
Total Cost of Improvements		$2,197,116
Gross Revenue	$545,000	$545,000
Operation and Maintenance Cost	$544,000	$520,000
Retirement of Current Debt		
Short-Lived Asset Replacement	$15,755	$15,755
Net Income	**-$14,755**	**$9,245**
Retirement of Debt Incurred with This Project	$0	$115,748
Amount to Be Set Aside for Debt Reserves	$0	$11,575
Remaining Surplus After Project	**-$14,755**	**-$118,077**
Increase of Fee	$1.50	$12.00
Number of Accounts	820	820
Added Revenue	$14,760	$118,080
Surplus After Increase in Fee	**$5.24**	**$2.61**
Existing Water Charge	$50.00	$50.00
New Water Charge	$51.50	$62.00

Table 11.3: Short-Lived Asset Replacement Calculations

Expenses	Annual Cost	Cost	Future Cost	Period of Service, yr	Start Service
High Service Pumps, Controls	$4,800	$50,000	$103,946	20	2010
Pump Station Valves	$355	$5,000	$16,932	30	2010
Water Tank Inspection/Repair	$10,600	$150,000	$507,953	30	2010
Annual Total to Be Budgeted	$15,755				

The new loan will create a greater deficit and require an increase in user fees. The increase in user fees will depend on the actual financing that is available. The current water fee schedule amounts to $50 per month for 5,000 gallons of residential water use. The water rate schedule includes a surcharge of $3.94 for a previous project, a base rate of $26.06 and a cost of $4.00 per 1,000 gallons of water used. Water rates for commercial use are based on the meter size and a cost of $4.00 per 1,000 gallons used.

The operation and maintenance costs for the Water Fund are based on the costs for 2015. These costs include the salaries and all expenses incurred during the year.

The annual loan payment for principal and interest on the total cost of the improvements is calculated based on a 30-year loan period and an interest rate of 3.25 percent. The implementation of the recommended improvements will require an increase in user fees. The increase in user fees will depend on the actual financing that is available. The proposed improvements are expected to reduce the annual costs of operation and maintenance as shown in Table 11.2.

The short-lived asset replacement cost is included in Table 11.2 and consists of booster station pump and valve replacement, control equipment replacement and general repair items. The City should budget this amount annually for maintenance. Because the financing that will be supplied by various funding agencies is unknown at this time, multiple columns of budget information are provided in Table 11.4 based on varying grant percentages. An alternate table for water rate analysis is presented in Table 11.5 for a Rural Development loan, which would have a term of 40 years and an interest rate of 2.625 percent.

Table 11.4: Water Rate Analysis (SRF)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$520,000	$520,000	$520,000	$520,000	$520,000	$520,000
Amount Amortized	$549,279	$659,135	$768,991	$878,846	$988,702	$1,098,558
Grant Amount	$1,647,837	$1,537,981	$1,428,125	$1,318,270	$1,208,414	$1,098,558
Annual Payment	$28,937	$34,724	$40,512	$46,299	$52,087	$57,874
Debt Reserves	$2,894	$3,472	$4,051	$4,630	$5,209	$5,787
Current Debt/Asset/Other Cost	$15,755	$15,755	$15,755	$15,755	$15,755	$15,755
Total Annual Costs	$567,585	$573,952	$580,318	$586,684	$593,050	$599,416
Annual Revenue	$545,000	$545,000	$545,000	$545,000	$545,000	$545,000
Surplus/Deficit After Project	-$22,585	-$28,952	-$35,318	-$41,684	-$48,050	-$54,416
Minimum Water Rate Increase	$2.50	$3.00	$3.75	$4.25	$5.00	$5.75
New Water Rate	$52.50	$53.00	$53.75	$54.25	$55.00	$55.75

Table 11.5: Water Rate Analysis (RD)

Percent Grant	75%	70%	65%	60%	55%	50%
Annual O & M	$520,000	$520,000	$520,000	$520,000	$520,000	$520,000
Amount Amortized	$549,279	$659,135	$768,991	$878,846	$988,702	$1,098,558
Grant Amount	$1,647,837	$1,537,981	$1,428,125	$1,318,270	$1,208,414	$1,098,558
Annual Payment	$22,344	$26,813	$31,282	$35,751	$40,220	$44,689
Debt Reserves	$2,234	$2,681	$3,128	$3,575	$4,022	$4,469
Current Debt/Asset/Other Cost	$15,755	$15,755	$15,755	$15,755	$15,755	$15,755
Total Annual Costs	$560,334	$565,249	$570,165	$575,081	$579,997	$584,912
Annual Revenue	$545,000	$545,000	$545,000	$545,000	$545,000	$545,000
Surplus/Deficit After Project	-$15,334	-$20,249	-$25,165	-$30,081	-$34,997	-$39,912
Minimum Water Rate Increase	$1.75	$2.25	$2.75	$3.25	$3.75	$4.25
New Water Rate	$51.75	$52.25	$52.75	$53.25	$53.75	$54.25

12 GENERAL TOPICS OF SELECTED PLAN

12.1 JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

The justification of each component of the selected plan has been discussed in previous sections. The overall selected plan is outlined in Table 12.1.

Table 12.1: Selected Plan Summary

Improvement Options	Cost	Recommended for Phase 1	Recommended for Phase 2	Recommended for Phase 3
Wastewater System				
Sanitary Sewer Priority 1 & 2 - Phase 1	$3,673,840	$3,673,840		
Sanitary Sewer Priority 1 & 2 - Phase 2	$3,846,730		$3,846,730	
Sanitary Sewer Priority 1 & 2 - Phase 3	$2,422,620			$2,422,620
West Lift Station Repair	$138,675	$138,675		
East Lift Station Replacement Option 2	$654,665	$654,665		
Lift Stations SCADA	$74,500	$74,500		
Total Cost of Wastewater System	**$17,595,318**	**$4,541,680**	**$3,846,730**	**$2,422,620**
Storm Sewer				
Phase 1: Spot Repairs and Upstream Improvements to Central Drainage	$1,037,000	$1,037,000		
Phase 1: 60-inch Storm Sewer Crossing North Highway	$921,000	$921,000		
Phase 2: Central Miller	$2,808,000		$2,808,000	
Phase 3: East Second Avenue	$2,170,000			$2,170,000
Phase 3: West Second Street	$1,406,000			$1,406,000
Total Cost of Storm Sewer	**$8,342,000**	**$1,958,000**	**$2,808,000**	**$3,576,000**
Water System				
Abandon Wells	$69,700			$69,700
Water Distribution Phase 1	$2,110,500	$2,110,500		
Water Distribution Phase 2	$2,350,030		$2,350,030	
Water Distribution Phase 3	$1,490,168			$1,490,168
Alley Surfacing	$86,616	$86,616		
Total Cost of Water System	**$9,811,974**	**$2,197,116**	**$2,350,030**	**$1,559,868**
Total Cost of Phases 1-3		**$25,260,044**		
Total Cost	**$35,749,292**	**$8,696,796**	**$9,004,760**	**$7,558,488**

12.2 CAPITAL FINANCING PLAN

The City of Miller will make application to state and federal resources for loan and grant assistance to complete the project and begin construction in 2017.

12.3 ENVIRONMENTAL EVALUATION

The City of Miller has requested comments from concerned federal agencies. The correspondence related to these inquiries will be placed in Appendix A of this Facility Plan as it is made available.

12.4 VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The City of Miller is planning to conduct a public hearing on the proposed project. Information related to the hearing will be submitted after it is conducted.

12.5 DESIGN OF SELECTED PLAN

The proposed improvements to the wastewater system, storm sewer system and water system will require design work to be completed. The improvements will be designed in accordance with the SD DENR design criteria and the accepted principles and standards for each component.

12.6 ENVIRONMENTAL IMPACTS OF SELECTED PLAN

Environmental information gathered thus far does not indicate that any of the state or federal agencies will have environmental concerns related to the project or its proposed construction activities. The proposed improvements will take place in previously disturbed areas or in the City's rights-of-way.

12.7 ARRANGEMENTS FOR IMPLEMENTATION

This report provides information to describe the proposed project and to support the City Council's decision to proceed with it as quickly as possible. Final design will be completed by the City of Miller's consultant and approved by the DENR, as it is definitely a "work of sanitary significance." Cost estimates have been prepared and are referenced elsewhere in this document. The project will be bid in accordance with state statutes that govern municipal corporations and will be constructed by the lowest responsible bidder.

The project is considered relatively large; therefore, for planning purposes the project will be broken up into three parts which will be designed, bid and constructed separately. The anticipated schedule for the progression of the project is shown in Table 12.2

Table 12.2: Preliminary Implementation Schedule

Task	Month - Year
Facility Plan Submitted to Funding Agencies	December-15
Environmental Review Completed	January-16
Funding Agency Approval of Facility Plan	February-16
Final Funding Package Complete	March-16
Phase 1 Begin Design	April-16
Phase 1 Plans & Specifications Submitted to DENR	December-16
Phase 1 Plans & Specifications Approved by DENR	January-17
Phase 1 Advertisement for Bids	January-17
Phase 1 Open Bids	February-17
Phase 1 Award Bids	February-17
Phase 1 Begin Construction	April-17
Phase 1 Construction Complete	November-17
Phase 1 Project Close-out	December-17
Phase 2 Begin Design	February-17
Phase 2 Plans & Specifications Submitted to DENR	October-17
Phase 2 Plans & Specifications Approved by DENR	November-17
Phase 2 Advertisement for Bids	November-17
Phase 2 Open Bids	December-17
Phase 2 Award Bids	January-18
Phase 2 Begin Construction	April-18
Phase 2 Construction Complete	November-18
Phase 2 Project Close-out	December-18

Table 5.5, Continued

Task	Month - Year
Phase 3 Begin Design	January-18
Phase 3 Plans & Specifications Submitted to DENR	August-18
Phase 3 Plans & Specifications Approved by DENR	September-18
Phase 3 Advertisement for Bids	October-18
Phase 3 Open Bids	October-18
Phase 3 Award Bids	November-18
Phase 3 Begin Construction	April-19
Phase 3 Construction Complete	November-19
Phase 3 Project Close-out	December-19

12.8 LAND ACQUISITION

No land acquisition will be required for the proposed collection system improvements as all work will be completed in existing street rights-of-way, in easements that have already been obtained or on City property.

12.9 INTERAGENCY AGREEMENTS

No operating agreements with other agencies are needed as the City of Miller owns, operates and maintains its municipal wastewater system. Loan documents will have to be executed with the appropriate lender but as Miller is a municipal corporation, it has the legal authority to enter into such agreements. Miller's attorney will advise the City Council on any legal matters related to this issue.

13 REFERENCES

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United States Census Bureau, American Fact Finder for Miller South Dakota. http://factfinder.census.gov/home/saff/main.html?_lang=en

Appendix A

Environmental Assessment Correspondence

Correspondence will be inserted as received.

Appendix B
Sanitary Sewer TV Inspection Evaluation

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	Deficiencies Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
Industrial Park Dr.	1	2	398.2		8	PVC	400	6					3Cp, 2Int, 2TB	220-350 grease.
Industrial Park Dr	2	3	398.2		8	PVC	440	5					4CP, 1TB	
Industrial Park Dr	3	4	396	J	8	PVC	380	1			396		1 Tnt	Sags up and down throughout.
East 3rd Ave	4	168	190.7		18	VCP	191	0						Pipe generally 1/3 full water
East 3rd Ave	5	4	307.2		18	VCP	310	0			307			Sags 1 to 4" up and down throughout.
	6	5	358		18	VCP	358				358			MH lid at 234' from 6. Sags 1 to 4" up and down throughout. Cam stuck on something.
	7	6	512		18	VCP	512							All 1/4 full of water
East 3rd Ave.	9	7	486.6		18	VCP	466	1			20			Sag likely. Def last 20' Cam'ed while jetting.
Vista Drive	10	9	294.9		8	PVC	298							74.2ft Pipe dimple.
Vista Drive	11	10	239		8	PVC	240	9	239					Minor sags throughout.
Vista Drive	11	11	189.1		8	PVC	194	3						Cap at 189
East 3rd Ave.	12	9	452.3		18	VCP	246	0			95			403.3ft Seal Ring Hanging. Sag 0-30, 66-81, 403-453
East 10th	13	181	26.3		18	VCP	26							
East 10th St.	181	12	321.8		18	VCP	658	0						
East 10th St.	181 US	12	171.3		18	VCP		0			90			Worthless video (foggy and into water)
West 10th St.	14	13	336.5		18	VCP	497	1		307			1TB	94ft, 174.1ft, 261.1ft many seals hanging badly. Cam'ed while jetting. 190-336
West 10th St.	14	13	100.2		18	VCP		0						Camera image blocked - worthless video.
West 10th St.	15	14	356.2		24	VCP	281	5		36		23	5TB	PVC to 23'. 128.2ft Greese Deposit on Top of Pipe. Sag start at 320 to end.
West 1st Ave.	16	15	224.1		8	PVC	391	1		20			1Int	224.1ft Intruding Service Pipe (Survey Abandoned)
West 1st Ave.	16	15	70.2		8	PVC		1		20			1Int	70.2ft Intruding Service Pipe (Survey Abandoned).
West 1st Ave.	17	16	356.7		8	PVC	516	2					2TB	Many minor sags
West 1st Ave.	18	17	159		8	PVC	229	3	20				2TB, 2Int	158ft Intruding Service Pipe (Survey Abandoned)
West 1st Ave.	18	17	192.7		8	PVC		1					1Int	192.7ft Intruding Service Pipe. (Survey Abandoned)
	19	182	151	J3	24	VCP	151	2					1 Int	Minor OS joints throughout. 96 multiple cracks. Broken pipe chunk in invert at MH 19
West 1st Ave.	20	19	3		8	PVC	342	0						3.0ft Collapsed pipe (4in down) (Survey Abandoned)
West 1st Ave.	20	19	343.5		8	PVC		10	30				9Cp	343.5ft Joint Offset (Inflow, 2in) (Survey Abandoned)
West 9th St.	21	20	99.2		8	PVC	73	0	40					
West 9th St.	22	21	68.6		8	VCP	468	1					1TB	69 **Grease.** (Survey Abandoned)
West 9th St.	22	21	364.9		8	VCP		7					2TB	364 **Grease.** (Survey Abandoned)
	23	19	164	J3	24	VCP	164	5					2 Int	4 dirt around service. Minor OS joints throughout. Multiple cracks. Broken pipe chunk in invert at MH 19
	23 U	23UU			8	VCP	500							No Record. Replace this line for serviceability.
	24	23	380	J	24	VCP	380	10					3 Int	Minor lon cracks, broke in taps (soil visible). 232 small hole. 370 Stick stuck in end of line.
West 8th St.	25	25D	29.5		10	VCP	250	0						29.5ft **Heavy Sediment.** (Survey Abandoned). Replace since cannot clean this line.
West 8th St.	25	25	175	J	6	VCP	200	3					1 Int	Roots in many joints. 22 broken pipe Joints open and OS. Did not reach end
West 8th St.	25	25	197	J	6	VCP	200	3			25			65 broken pipe, soil visible. Did not reach end.
West 1st Ave	26	24	39.4		24	VCP	348	1					1 TB	Servey abandoned. **Sediment obstruction**
North 1st Ave.	26	24	134.4		24	VCP							2TB	134.4ft Camera Underwater (Survey Abandoned)
	26	24	348		24	VCP								Camera under water from 120 on.
West 1st Ave	27	26	67.1		18	VCP	110	1					1TB	Minor pipe degradation at 22 and 30. Cracks at 30&50. Line curves left at 60. Severe pipe chunks and gravel.
West 1st Ave	28	27	41	J	18	VCP	41	0						To 15, 30 lon cracks. 23 curves right. Minor OS joints. 25% water.
West 1st Ave.	30	28	79	J	18	VCP	250	1					1TB	OS joint up/down L/R throughout. Roots in some joints and services. 78 Broken pipe-severe
	30	28	221	J	18	VCP								Lon cracks throughout, 106 broken pipe. 168 broken pipe-severe, worse at end
West 1st Ave	31	30	377	J	15	VCP	387	9			25		3TB, 4 Int	Cracks 19 - 44. OS joints throughout. 59 hole. 305ft Int lateral (Survey Abandoned).
West 1st Ave	31	30			15	VCP					8		1TB	Severe cracks. Sag in this area. 8 ft Joint smaller (Survey Abandoned)
West 5th St.	32	31	12	J	8	VCP	443	3					2TB	11 sharp bend left. Bad vertical angle from US MH. Cannot perform inspection
West 5th St.	33	32	26	J	8	VCP		2					1 Int	18 change from PVC. 26 bad service conn
West 5th St.	33	32	73	J	8	VCP	409						9TB	85.2ft Pipe Fractures; 0, 20.0ft, 24.1ft, 56.1ft, 86.8ft Roots; 153.3ft Line Left. (Survey Abandoned)
West 5th Street	33	35	275.1		8	PVC	417						2.0	**140 Sediment Remains. 275.1ft, Obstacles in Pipe** (Small Rocks, Minor) (Survey Abandoned)
West 5th St.	34	33	174	J	6	VCP	419	2					1TB, 1 Int	42 change from pvc to vcp. 51, 99 Holes. 110 change to 6", several minor JO.
West 5th St.	34	33	190	J	6	VCP		7						Roots in many joints. 54, 72, 74 broken pipe. Multiple joints with cracks.
West.3rd Ave	35	36	137.7		8	PVC	117	1						
West 3rd Ave	36	37	241.4		8	PVC	233	0						
West 7th St.	37	37D	48.7		8	PVC	440	0						
West 7th St.	37	38	82.1		10	PVC	135	1						
West 7th St.	39	37D	280.2		8	PVC	460	4					4TB	357-369 VCP; 407.2ft **Large Obstacle in Pipe** (Survey Abandoned)
West 7th St.	39 US	37D	127		8	PVC	460	2			20			137ft **Pipe Chunk.** (Survey Abandoned)
	40	39	128		8	PVC	128	1						
West 7th St.	40	40	12.1		8	PVC	100	1						Line Right (Survey Abandoned)

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	Deficiencies Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
West 7th St.	41	40	44.5		8	PVC	136	0	20					
West 7th St.	42	41	14.9		8	PVC	381	0						14.9ft **Large Obstacle in Pipe** (Survey Abandoned)
West 7th St.	42	41	368.3		8	PVC		7			30		1Int. 4Cp	20.6ft Sag in Pipe (4in); 368.3ft Intruding Service Pipe (Survey Abandoned)
West 7th St.	43	27	472	J3	8	VCP	472	6			40		1TB	Multiple cracks throughout. Long crack at 300. 21 soil around service. 417, 464 broken pipe. 431 Settled PVC repair. MH 27 bad.
West 2nd St.	44	36	38.7		6	VCP	432	0						3.0ft, 28.7ft Multiple **roots,38.7ft** Joint Offset (Inflow) (Survey Abandoned)
	44	43	165	J	6	VCP	235	4						60 broken pipe. Roots in many joints. 104 hole - severe
	44	43	70	J	6	VCP								10-18 Severe broken pipe
West 2nd St.	45	32	290.4		8	VCP	413	10					4TB	**Significant Sediment remains.** Bad service conn. 168.8ft Pipe Broken. 290.4ft **Gravel** (Survey Abandoned)
West 2nd St.	45	45	24.5		6	VCP	217	0						Joints up/down, L/R; 24.5ft Joint Offset (Inflow) (Survey Abandoned)
West 2nd Ave	45	45	44.2		8	VCP	110	1					1TB	Joints up/down throughout. 44.2ft End of Pipe (Capped End)
West 5th St.	46	31	182.7		18	PVC	213	2			173		2pvc cut in	1/2 pipe sag
West 4th St.	47	46	358.4		18	PVC	446	10		115	88		2pvc cut in	358.4ft Pipe Sag (Survey Abandoned) 50- gravel <1"
West 5th St.	47 US	46	25.1		18	PVC		1			20			35.1ft Pipe full pipe sag (Survey Abandoned)
West 3rd St.	48	47	131.6		18	VCP	414	7	85		15		5TB, 1 Int,1Cp	Holes @ 43&49. 77 service gusher. 131.6ft Intruding Lateral (Survey Abandoned)
West 4th St.	48 US	47	282.4		18	VCP		5		209	10		4TB, 1 Int	Lon cracks 7-17. (Survey Abandoned)-sag
West 2nd St.	49	48	423.3		18	PVC	411	13		178			1TB	**Minor gravel 70'**
West 1st St.	50	50D	129.6		15	VCP	300	6	10				5TB, 3Int	129.6ft Intruding (5") Lateral Service (Survey Abandoned) Sediment 117-129. Minor offset joints throughout
West 1st St.	50	50D	39.5		15	VCP		1		40				30.5ft Intruding Lateral Service (Survey Abandoned)
West 1st St.	50	49	52.5		18	VCP	100	8					2TB, 6Int	Multiple cracks throughout; 32ft Hole, Soil Visible
West 1st St.	50 US	49	87.9		18	VCP		5					2TB, 3Int	Pipe change at 18. 34 smaller pipe dropping ds. 87.9ft Intruding Lateral Service Pipe (Survey Abandoned)
West 4th St.	51	74	371		8	VCP	445				371		2TB, 1Int	17, 121 pipe is broken; 210 short PVC; sags and JO throghout
West 4th St.	52	51	416		8	VCP	416				416			17.1 Line left. 4.3 hole in pipe (Soil Visible). Bad sags throughout. Roots 154. 232 JS; 406 bad service conn
West 4th St.	53	52	170	J3	8	VCP	437	5			170			OS joints throghout. 5, 66 JO. 23 broken pipe, soil visible. 104 broken service - soil visible. 155 service full of roots. Huge sags up and down. 166 pipe gone-severe (Survey abandoned)
West 4th St.	53 us	52	170	J3	8	VCP		2					2TB	8 PVC to VCP huge OJ
West 4th St.	54	53	6	J3	8	VCP	407	1			6			Joint Separation (**Survey Abandoned**)
West 4th St.	54 us	53	78	J3	8	VCP		4			78			OJ and JS throughout. 80.4ft Line Right, 75.1ft Line Left. 55.7ft Material change (VCP to PVC **survey abandoned looks bad**.), 75.1ft Material Change (PVC to VCP). PVC to VCP at 7.
West 4th St.	55	54	236	J	8	VCP	428	7					1 Int	5, 164, 194, 212 Severe hole. Many open joints. Roots in many joints. 234 broken pipe-severe
West 4th St.	55	54	151	J	8	VCP		5					1Int	Many locations of broken pipe and holes.
West 4th St.	55 U	55	198	J	6	VCP	300	2			10			Minor JO & JS throughout. Roots in many joints.
West 5th Ave	56	55	110.4		6	PVC	416	1	25		15	X		110.4ft Pipe Egg Shaped (Abandoned Survey)
West 4th St.	56 us	55	71.2		6	PVC		1						71.2ft. Line Left (Survey Abandoned)
West 5th Ave.	57	56	176.2		6	PVC	235	2		30			1TB	32 bad joint. Pipe inserted from MH 57.
	57 U	57	182	J	4	PVC	200	2				20		182 pipe crushed. Several JS
West 3rd St.	58	59	11.6		6	VCP	263	0						11.6ft **Large clay chunk**. (Survey Abandoned)
West 3rd Ave.	58	59	126.3		6	VCP		4	30	20			4TB, 1Int	64.2ft Hole in Pipe, Soil visible. Major intruding joint. Services are bad.
West 3rd St.	58	58	186		8	VCP	80	0						63 Severe hole. 123 Broken pipe. 186 **blockage** (Survey Abandoned)
	59	61	40		8	VCP	450				37			27 steep slope up.
West 3rd St.	59 ds	61	190.4		8	VCP		8					6TB, 1Cp, 2Int	79 pipe broke. 184.6ft Missing Cap on Service, Soil Visible; 190.4ft Intruding Lateral Service (Survey Abandoned)
West 3rd St.	60	59	79.9		6	VCP	315	1					1CP	79.9ft, 36.1ft Joint Offset (Abandon Survey) **Sediment remains.**
	61	62	293		8	VCP	400	11			95		8TB, 3Cp	**Sediment remains.** 2-3" water throughout; 150 crack; 219 pvc to 248; last half joints up/down, L/R
West 3rd St.	61	61	204		8	VCP	293	4					3TB	Grease Deposit, roots joint 110.4ft. Open pipe at 204
West 3rd St.	62	63	107.8		8	VCP	414	3		45			1TB	Sag at start. Minor OS & L/R joints; 117 service plugged;
West 3rd St.	62US	63	191.4		8	VCP		6					5TB, 1Cp	19 service plugged; sag at start; 3-4" water throughout.
West 3rd St.	62	62	138.6		6	VCP	294	1					1TB&Int	138.6 ft Survey Abandoned Intruding Service. Minor OS joints & L/R throughout.
West 3rd St.	63	48	93.1		8	VCP	225	0						3" water throughout; OS joints up/down, L/R throughout; 93.1 ft, Joint Offset (Inflow, 1in Drop) (Survey Abandoned)
West 3rd St.	63	63	69.4		8	VCP	197	2			69		1TB, 1Cp	3.6ft Pipe broken Visible Soil, 69.4ft Pipe Sag (Survey Abandoned); 3-4" water throughout
West 3rd St	63	63	3.4		8	VCP	246	0						3.4 ft Line Left 45 bend - Inspection Abandoned)
West 4th Ave	64	65	45	J	8	VCP	450							0 cracks, JO and JS throughout, 44 broken bend - sharp bend left
West 4th Ave	64	65	269	J	8	VCP		5			90		2 Int	JO throughout. 52 cracks. 197 broken at service. 238 gusher. 255 roots through hole. Roots in many joints.
West 2nd St.	65	66	251.8		8	VCP	260	8	212	20	20		8TB,	Minor sags, L/R & OS joints throughout. 228.5ft ,232.6ft Holes in Pipe; 251.8ft Sag, **Clay tile blockage** (abandoned)
West 2nd St.	66	67	381.5		8	VCP	587	12	302	50	30		12TB,1Cp, 1Int	Sags, OS joints, L/R throughout. Service@111 rocks. 381.5ft Intruding Service Pipe (Abandoned Survey)
West 2nd St.	67	69	139.4		8	VCP	414	7			139		6TB, 2Cp, 1Int	Sags, OS joints throughout. 139.4ft Intruding Service Pipe (Abandoned Survey)
West 2nd Ave.	67A	67	197	J	6	VCP	300				197			Camera underwater mostly. Some OS joints.

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	Deficiencies Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
	67A	67	109	J	6	VCP								
West 2nd Ave.	68	67A	90	J	6	VCP	90	1						OS joint throughout.
West 2nd Ave.	68 U	68	47	J	6	VCP	47							JO throughout. 43 4" VCP. 47 bend broken-soil visible.
West 2nd St.	69	49	216	J3	8	VCP	216	10					4cap, 2 Int	8 JO. 11, 13 broken pipe. 35 broken service. 212 vcp to pvc to MH 49
West 7th St.	70	26	65.2		18	VCP	109	2					2Cp	Following jetter. Line curves right throughout. 59.7ft Hole in Pipe, Soil Visible
West 7th St.	71	70	132.9		18	VCP	288	4					2TB, 1Int	Following jetter. Line curves left at 22. 130 ft Obstacles in Pipe (Large VCP Pieces) (Survey Abandoned)
Broadway Ave.	72	71	372.5		24	VCP	389	13					11TB, 2Cp	Following jetter. Lon cracks 7 to 23. Service gusher at 167. 0.5" **gravel 110 on.** Line curves left at 325. Sediment in MH 71.
Broadway Ave.	73	72	327.5		24	VCP	352	8					6TB, 1CP	Following jetter. **Many spots of 1" gravel, heavier 250 to end.**
Broadway Ave.	74	73	490.5		24	VCP	452	16		38			4TB	Lon crack at 308. Minor gravel. Minor joint offsets throughout. Minor sags throughout. **Heavy sediment last 25 ft.** Line curves right at 460
Broadway Ave.	75	74	430.6		18	VCP	440	17		40			8TB	Minor sags throughout. 195&235 service gushers. 2" sag at end.
East 2nd St.	76	49	102	J3	10	VCP	221	0						6 pvc to vcp. 11, 42, 42-50, 64-76 broken pipe. 102 severe hole. OJ & JS throughout. 102 pipe bends down (survey abandoned). Ahead sediment blockage.
Broadway Ave	76	75	398		18	VCP	410	16					3TB	398ft Camera Failure In Water (Survey Abandoned). Pipe .3 to .5 full. Hole at 358. Joints worse on N end.
Broadway Ave	76	75	25.8		18	VCP		0			30			25.8 ft Sag in Pipe (Survey Abandoned)
West 1st St.	77	50	30.3	J3	8	VCP	261	1						JO & JS throughout. 58 broke at service-soil visible. 61 pipe broke and about to cave in. (Survey Abandoned)
Broadway Ave	77	76	462.1		18	VCP	467	25	52		52		15TB, 5Cp	1" sag to 52, 2" sag at 222. offset tile joints throughout. 54.5ft Hole in Pipe, Soil Visible
Broadway Ave	77	76	85.1		18	VCP		4					3TB	Joints are all terrible
Broadway Ave	77 U	77	143	J	18	VCP	143							Minor JO & JS throughout. 70 multiple cracks. 143 open pipe. **Abandon Line**
outh Broadway Av	78	78D	198	J	8	VCP	478	2			150		1TB	9.8ft Intruding Lateral Service Pipings. Camera underwater.
			175	J	8	VCP					158			Break in connection east of MH 77
South Broadway Av	79	78	364	J	8	VCP	480	6					2TB	24 PVC to VCP. 42.4ft Vertical Hole in Pipe. 2" water throughout.
outh Broadway Av	80	79	364		8	VCP	364	6			121		4TB, 2Cp,	1' hole; **Sediment Remains.** 7'63, Multiple Cracks in Pipe; 10.2ft, 122.5ft, 139.8ft, 143, 304 Holes in Pipe, Soil Visible. 2" water to 145 where it is deeper
South Broadway Av	81	80	232.4		8	VCP	271	4			178		3TB, 1 Int	Pipe 1/2 full water. 232.4ft Hole in Pipe, Visible Soil; Ahead of 232.4ft intr service (Survey Abandoned)
South Broadway Av	81	80	36.2		8	VCP		2					1TB, 1Int	32.2ft Hole in Pipe, Soil Visible; 35.6ft Intruding Lateral Sanatary Pipe (Survey Abandoned)
outh Broadway Av	81	81	29.6		8	VCP	449	0						29.6ft Complete blockage(Survey Abandoned)
	83	82			6	VCP	400							No record
	82	180	86		8	VCP	200	1					2TB	56 open hole to dirt. 86 **Sediment Remains** (survey abandoned). Roots in many joints w minor OS
	84	76			8	VCP	30							Cannot get to it. No record. Refer to 382' on 84-85
East 2nd St.	84	85	383	J	12	VCP	393	14						0 Curves right. JO and JS throughout. Super bad. Street about to fall in-303-317
East 2nd St.	85	85	54.8		8	VCP	447	2					2TB	52 broken service. Line is R&L/up and down throuhgout. 54.8ft Pipe Line Right (Survey Abandoned)
	85	86	8	J	12	VCP	8	0						
East 2nd St.	86	87	25	J	8	VCP	300	3					3 Int	18 broken pipe. 25 broke at service.
			63	J	8	VCP		1						Line curves left first 20'. JO and JS throughout. 12, 31, 61 Holes. 63 Severe broken pipe.
East 2nd St.	86	99	162	J	12	VCP	167	6					1Cp	0 severe break. 13 small break. 61.1ft Joint Offset
East 2nd St.	87	88	91	J	8	VCP	110	3						JO throughout. 75 hole. 89 severe broken pipe.
East 2nd St.	88	104	428	J	12	VCP	443	8	50				1 Int	Multiple 1" sags
East 2nd Ave.	90	91D	6	J	8	VCP	465	0					3TB, 1Int	2 hole-severe; 22, 31, 96 broken at service; 72 severe break; obstruction at 120.
	91	91D	5	J	8	VCP								Dropping OS at MH 91D - PVC to VCP.
East 2nd St.	91	91D	20	J	8	VCP	530	1			20			15.6ft Broken Pipe, Visible Soil - collapse likely. Sags and OS joints throughout.
East 2nd St.	91D	88	18	J	12	PVC	18	0						
	91 U	91			6	VCP	450							No record
East 2nd St.	92	91	347.2		8	VCP	350	12					9TB,3Cp, 1Int	PVC to VCP at 10; line L&R/up,down throughout; 26&33&320 broken pipe-severe; 50.7ft Crack; 257 broken service-severe; 320.7ft Broken Pipe
	92 U	92	388		8	VCP	400	8					8TB, 1 Int	Line L,R/up,down throughout. 218&273&293 service-roots. **Roots in many joints.** 388 intruding tap(survey abandoned)
East 2nd St.	93	92	212.8		8	PVC	382	3					1TB	
East 2nd St.	94	96	365.8		8	VCP	360	12			24		6TB	255& 363 Broken Pipe, Soil Visible. Sediment at start.
	94	92	184		8	VCP	330	8	59	60			6TB	26 Broken pipe - severe; Hole 49; 65 service w roots; Int tap cut at 103. Sunk pipe at 184
East 5th Ave	94	111	162	J	8	PVC	162	1						New Oct 2015
East 5th Ave	95	94	531	J	8	PVC	531	7						New Oct 2016 - 213 gusher, later fixed
East 6th St.	96	167	7.7		8	VCP	443	0						7.7ft **Sediment in Pipe** (Small Rocks Settlement) (Survey Abandoned)
East 2nd St.	97	96	292.3		8	VCP	471	4	150				3CP	1" sags throughout. 291.6ft **Grease** deposit
East 6th Ave.	97 us	96	135.8		8	VCP		6	50				4CP, 1TB	4.7ft Broken Pipe; 15.1ft Multiple Fractures, Fracture Spiral all in different locations. Roots in many services. **Grease Deposit** (Survey Abandoned)
East 2nd St.	98	96	293.2		8	VCP	412	13					8CP, 2TB, 3Int	111.6ft Infiltration Runner
East 2nd St.	98	96	56.7		8	VCP		1		44			1TB	56.7ft Intruding Service Pipe.(Survey Abandoned)

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	Deficiencies Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
East 2nd St	98	98	34.4		8	VCP	301	2		34			2TB	6 open joint. 34 PVC Reducer Encoutered; 34.1ft Material Change; 12.0ft Roots Protruding Pipes (Survey Abandoned) **Sediment remains.**
East 2nd St.	99	100	123	J	12	VCP	198	0						19 cracks. 123 broken pipe chunks.
East 1st Ave.	101	101D	200	J	6	VCP	218	1						62 Joint Offset (Outflow, 1in). Stopped short
East 1st Ave.	102	101	47		6	VCP	107	0						Pipe half full water. 46ft Material Change (VCP to PVC) 47ft Joint Offset (At VCP to PVC Transition)(Bad Video) (Survey Abandoned)
East 3rd St.	103	141	410.8		15	PVC	521	7			44			**Rocks and gravel at start**. Sag at 250-1/2 pipe.
East 3rd St.	103 U	103	31	J3	12	PVC	363	1						26.5ft Pipe Line Left/Up (Survey Abandoned) Looks bad upstream toward west.
East 3rd St.	104	103	23.2		12	VCP	43	1					1TB	2' open hole, PVC at 14
East 3rd St.	105	104	350.8		12	VCP	197	19					6TB, 12CP	Poor video. 1/3 to 1/2 full water. Hole @ 29, 50, 52, 117, 241. Broken at 136.298,312,329-338. Broke service at 142. Cracks 180-228, 245-247. 235, 238,253,271,274 holes
East 3rd St.	106	105	155.5		12	VCP	421	4					3TB	Following jetter. 32 broken service-severe. 103 service gusher broken inside. Bad Inv in 105 MH
East 3rd St.	107	106	182.7		12	VCP	168	4					3TB	9.5ft Pipe Broken, Soil Visible; 95.7ft Large Roots (Service);179.4ft Broken Pipe, Soil Visible. 150-169 cracks
East 3rd St.	108	107	295.1		8	VCP	281	0						Minor sags and OS joints throughout. 294.4ft Joint Offset (Inflow) & bad cracks. (Survey Abandoned). **Sediment 88-294**
	109	109 A	300	J	8	PVC	300	3		150				Sags throughout
East 3rd St.	109	111	271	J3	15	PVC	271	1		50	20			255 leaking joint
	110	107	51	J3	6	VCP	400	1						OJ & JS throughout. 6 PVC to VCP. 48 broken pipe reduces to 6" Upstream. Survey Abandoned
	110 ds	107												No record
	111	LS	59	J3	15	PVC	59				59			Reverse grade creates 3" sag
	112	109	12	J3	8	VCP	365							Severe hole at MH 112. Bad Sag. Major OJ at 12. Survey abandoned. JO visible to west.
East 3rd St.	113	112	225		8	VCP	235				200			25 broken pipe. Sag 13-115,127-225 (1/2 pipe) 64.6ft broken pipe soil visible, 134&203.3ft broken pipe (Survey Abandoned)
	114	113			8	VCP	120							
East 3rd St.	115	113	585.7		8	VCP	596	14					7TB, 1CP	Sags throughout. 538 hole. 464 Hole at service - severe; 551 Seperated Joint-severe. Broken pipe 575. 346 roots@ service. Sediment remains.
	116	115	27	J	8	VCP	250							Very bad. See record
East 3rd St.	117	116	51.8		10	PVC	66	0						
East 3rd St.	118	117	297.4		10	PVC	386	0						Grease Depostits on Top of Pipe throughout. **Significant sediment remains.**
East 3rd St.	118	117	64.3		10	PVC		1					1TB	
East 3rd St.	119	118	346.7		10	PVC	362	1		44		10		182.6ft, 188.7ft, 205.3ft Grease Depostis on Top of Pipe. Sag at beginning and end. Rock imprint at 342
East 3rd St.	120	116	353.4		8	VCP	386	11					2TB, 6Cp,	Pipe trans@12. OS joints throughout. 138 Roots Blocking Lateral Entrance; 170 cracks; 207 service plugged; 265&317 broken service; 353 Multiple Cracks and Pipe Broken in 116 invert
West 3rd St.	121	120	249.9		8	VCP	289	10					1TB, 9Cp	121 Broken Pipe-severe. 128 broken service; 248 Obstacle in Pipe (Large Piece of VCP) (Survey Abandoned) Sediment last 100'
East 3rd St.	122	119	63.3		10	PVC	66	0						
West 3rd St.	123	122	235.6		8	VCP	197	4					4Cp	Sags throughout. Short pvc pipe at 122 MH
East 3rd St.	124	123	24.9		8	VCP	118	1			24		1TB	24.9ft Bad Sag (Abandon Survey)
East 5th St.	128	123	347.1		8	PVC	469	0						
East 5th St.	129	128	284.3		8	PVC	307	4	10				1Int	284.3ft Intruding Service Pipe
East 5th St.	129 us	128	139.2		8	PVC		3					1Int 2TB	139.2ft Intruding Service Pipe
	130	115	194	J	6	DIP	194	2			100		2 Int	Bad sags >60%. Camera underwater. Rough surface. JS throughout. 187 broken pipe.
			118	J	6									14 PVC changes to VCP. Broken pipe at most joints.
	131	113	175	J	8	VCP	375				100			JO, JS and sags throughout. 82 broken pipe. 97,103 pipe broke at service - severe. 171 multiple cracks
East 5th Ave.	132	109 A	188	J	8	PVC	188	1			100			Sags throughout
East 4th Ave.	133	132	358.7		8	PVC	381	7	28					
East 5th St.	133	136	337		8	VCP	352	0		210				OS, separated joints & lon cracks throughout. Grease at 100. 118 severe hole. 140-154&176-197&206-302 pipe broken. PVC from 154-176&197-206. 329PVC 337 ft Pipe 45 angle right (Survey Abandoned)
East 5th St.	134	135	197.7		8	PVC	325	2						Sags throughout. Infilt at MH 135
East 5th Ave.	135	132	336	J	8	PVC	352	3	196	100	40			Whole pipe has 1 to 4" water. **Sediment remains.**
East 5th St.	135	136	195	J	6	VCP	381	9					2 Int	7 PVC to VCP. 112 broke at service - severe
	135 us	136	80	J	6	VCP		1						PVC pipe piece settled 17-26 Minor JO and JS throughout. 66 hole at service. 80 6" pipe
East 5th St.	136	137	343.3		8	VCP	343	9					9TB	12,63,186,285,305 broken services. 13 small hole. 50.7ft Material Change (VCP to PVC), 50.1ft Pipe is Broken, Soil Visible; 53.2 ft Material Change (PVC to VCP); 60-118 lon cracks throughout; 118 Multiple Cracks by Angular Joint. Outside drop to MH 137. 1-3" water throughout
East 4th Ave.	136	136	35.4		6	PVC	300	0						34.9ft Joint Offset (Inflow) (3in Drop in Joint) (Survey Abandoned)
East 3rd Ave.	137	145	372.9		18	VCP	392	1					1Cp	Following jetter. 28' of bad steel pipe then VCP. Pipe 1/3 full. Patches of gravel remain.
East 5th St.	137	137	38.5		8	PVC	440	0						38.5ft Pipe Line Left (Surveyed Abandoned)
East 5th St.	138	137	226.1		18	VCP	220	3					3TB	Followed jetter. Pipe 1/4 full water. Gravel remains
Park Dr.	139	138	227.7		8	PVC	239	5						
East 5th St.	140	138	213.6		18	VCP	252	3					3TB	71 &171 collapsed service. **Gravel remains.**

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	Deficiencies Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
East 2nd St.	141	140	414		15	PVC	302						1TB	Following jetter. Service pipe sinking at 326.
East 5th St.	143	140	367.9		18	VCP	413	16					11TB, 4Cp	54 Pipe Broken, Soil Visible; 106 broken service; 118 242, 248 Pipe Collapsed, service gusher at 118 which is pipe in dirt. Severe cracks 118-145, service 267 collapsed, Holes 267,334,348, Joint Offset (Outflow, PVC Connection) (Survey Abandoned)
East 5th St.	143 US	140	46.9		18	PVC		0						46.9ft Joint Offset-Inflow(Survey Abandoned)
East 5th St.	143	144	367.2		18	VCP	368	7					5TB	Following jetter. OS joints throughout. 15.2ft Material Change (VCP to PVC); 23.2ft Material Change (PVC to VCP); 159.2ft Pipe Calapsed, Soil Visible
East 5th St.	143 U	143	195	J	6	VCP	300	4		20	20		1 Int	JO throughout. Roots in many joints.
East 5th St.	144	73	118.3		18	VCP	86	0					1 rocks plug	OS joints throughout. Line curves right at 30. Cracks at 82 service.
	145 U	145	157	J	8	VCP	200	1						2 Hole
	145	146	447		8	VCP	447							2-8,145 broken pipe; 57 broke @ service; following jetter; 148 service full of roots; 2-3" sags and OS joints throughout;
East 3rd Ave.	145	150	389.3		18	VCP	372	1					1Int	Following jetter. Unknown ubstruction at end.
East 6th St.	146	147	426	J	8	VCP	426	12					1TB, 2Int	77 broken service; many holes and broken pipe. 97 Sag in Pipe (2 in); 118.8ft Intruding Lateral Service Pipe
East 6th St.	147	148	9.1		8	VCP	374	0					5Int, 1Int, 1Cp	7.7ft **pipe chunk**. (Survey Abandoned)
East 7th St.	147 us	148	269.5		8	VCP		7						186 broken pipe; 252 Seperated service. 2-3" sags throughout; Joints a Mildly Seperated the Entire Length; 269.5ft Intruding Lateral Service (Survey Abandoned)
East 7th St.	148	71	218	J	8	VCP	420	8			300			Sags throughout. Broken at many services. 210,216 service severe.
East 1st. Ave.	148	156	360.3		12	PVC	380	2			100		1TB	**Sediment remains.** 1-3" water throughout.
East 7th St.	149	148	207	J	8	VCP	409	10					11TB, 1Cp	121.5ft Large Roots in Lateral, 194.6ft, 200.5ft Holes in Pipe, Soil Visible (Survey Abandoned)
East 7th St.	150	149	103		8	VCP	515	5					4Tb, 1Cp	103ft Hole in Pipe, Visible Soil; 103ft External Cable Entering Pipe (3 in) (Survey Abandoned)
East 7th St.	150	149	360.3		8	VCP		12					10Tb, 2Cp	103.1ft Roots in Lateral (Blocking Entire Lateral); 109.6ft Minor Cracks in Pipe; 202.1ft Large Piece of Wall Missing; 360.3ft External Pipe or Cable Running Through Sewer Pipe (Survey Abandoned)
East 3rd Ave.	150	154	223.4		18	VCP	221	2					1TB	Following jetter. Gravel visible above 1/4 pipe of water.
	151	150	199		8	VCP	300		38					59 cracks, 63 service gusher, 79 cracks at service, 104 hole-severe, 126 leaking tap, 190 broken tap, 199 intr tap blocking
	151 us	150	151		8	VCP				70				53 broken pipe - severe, 78-80 cracks
	152	151	342		8	VCP	300			37			6 TB	271 and 272 broken pipe - severe
East 7th St	153	152	394.7		8	VCP	359	4					2 TB	59ft Roots, 113Int tap w roots, 301 broken pipe at service - severe
East 7th St.	153	153	101.9		8	VCP	230	2					2TB	16 cracks at service, 17ft Material changes (VCP to PVC), 101.9ft Reducer (Survey Abandoned)
East 3rd Ave	154	155	405.9		18	VCP	424	6					6TB	Following jetter. Service at 137 gusher. Cracks 124&143-190. Gravel 282.
East 3rd Ave	155	8	391		18	VCP	526	7					1TB, 5Cp	391ft Camera Failure in Water (Survey Abandoned)
North 1st Ave	156	159	217.3		12	PVC	223	2						**Sediment remains.**
East 8th St.	157	156	360	J	8	VCP	360	10					2 Int	**Roots cut out**, still roots in joints. Roots in services. Minor JO throughout. Tee facing down. 254, 280, 307 holes
East 8th St.	158	157	337		8	VCP	424	1	40				1Int	Following jetter. 129 roots in service. Int service at 368
	158 us	157	16		8	VCP								
North 1st Ave	159	165	160.9		12	PVC	160.9	0						
East 9th St.	160	159	378.1		8	VCP	375	0					7TB, 3Cp	Minor OS joints throughout.
East 9th St.	161	160	431.2		8	VCP	435	21					10TB 10Cp	12,206,230,308 SJ at service. 338.9ft, 318.3ft, 312.1ft Roots Protruding Through Pipe. Minor OS joints throughout. Pipe extended from MH 161 into sewer.
North 1st Ave	162	13	103		8	VCP	700				103			Severe Egg-shape. Survey Abandoned
West 1st St.	163	50	183.8		8	PVC	185	2			183		1Int	2-3" sags throughout. **Sediment remains.** 183.8ft Intruding Lateral Service (Survey Abandoned)
North 1st Ave	164	181	294.6		12	PVC	294.6	1						
East 1st St.	165	164	95.4		12	PVC	50	1					1TB	11.9ft Mutliple Cracks in Pipe
East 8th St.	166	130	252.1		8	PVC	252	1						
East 8th St.	166	166	316.9		8	PVC	316.9	3					2TB	59.8ft 6 x 8" Reducer; 316.9ft Pipe is Capped w CO
East 3rd St.	167	110	364		8	VCP	364	11					8TB, 1Cp	9 pvc changes to vcp. 80.1ft severe hole-small pipe blasting water. 111 south invert. Pipe up to 1/2 full water to 220.
East 3rd St.	167U	167	110		8	VCP	250	4					4TB, 2Cp	375ft Hole and Multiple Cracks in Pipe; 473.8ft Obstacle in Pipe (Small Rocks) (Survey Abandoned). **Sediment around 220&468**. Pipe up to 1/2 full water to 220.
East 3rd Ave.	168	169	456.8		18	VCP	502	0						
East 3rd Ave.	168	169	557		18	VCP	557	0						4" water
East 3rd Ave.	169	170	256.1		18	VCP	496	1					1TB	
East 3rd Ave.	169	170	261.1		18	VCP		0						See only top half
East 3rd Ave.	170	171	337.6		18	VCP	501	0						277.5ft Seal Ring Hanging. 1/3 full
East 3rd Ave.	170	171	175.4		18	VCP		0						10.2ft Seal Ring Hanging. 1/3 to 1/2 full
East 3rd Ave.	171	172	483.1		18	VCP	498	0						Stopped short 20'. Pipe 1/3 full
East 3rd Ave.	172	173	316.6		18	VCP	501	0						**Some solids at 40'.** Pipe 1/3 full.
East 3rd Ave.	172	173	180.5		18	VCP		0						Only see top of pipe.
East 3rd Ave.	173	174	252.8		18	VCP	500	0						1/3 full.
East 3rd Ave.	173	174	250		18	VCP		0						217.6ft Possible Sag (Camera Went Underwater)

Records of TV Inspections TV Inspection Evaluation

SEWER LOCATION Street	US MH	DS MH	Cammed Length (ft)		Pipe Dia. (in)	Pipe Type	Map Length	# Services	Sag 1" L, Ft	**Deficiencies** Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	Descriptions of Deficiencies
East 3rd Ave.	174	175	415.6		18	VCP	500	0						1/3 full.
East 3rd Ave.	174	175	83.5		18	VCP		0						Worthless video - only top of pipe.
East 3rd Ave.	175	176	265.7		18	VCP	501	0						1/3 full.
East 3rd Ave.	175	176	230.4		18	VCP		0						Worthless video - only top of pipe.
East 3rd Ave.	176	177	270.8		18	VCP	500	0						
East 3rd Ave.	176	177	233		18	VCP		0						Worthless video - only top of pipe.
East 3rd Ave.	177	178	289	J	18	VCP	498	0						
East 3rd Ave.	177	178	170		18	VCP		0						70.1ft Possible Sag (Camera Went Underwater). Worthless video - only top of pipe.
North 3rd Ave.	178	179	290.1		18	VCP	347	0			80			69.7ft, 132.4ft, 180.6ft Seal Ring Hanging; 69,94 lon crack; 290 ft Pipe Broken-multiple cracks. **Huge deposit near MH 179**
1st St. Southeast	180	78	375.8		8	VCP	376						2TB	1-2" water&minor OS joints throughout. Service conn are bad. 186 roots; 351 broken service
West 1st Ave	182	15	48.7		24	VCP	20	1			33		1TB	Sag north end.
West 7th St.	CO1	42	276.2		8	PVC	294	4	60				3TB, 1Cp	several small sags. 276.2ft End of Pipe (Ascess End-PVC)
North 1st Ave	CO2	162			8	VCP	700							Cannot access with camera.
	CO3	91			8	VCP	150							Cannot access with camera. 92-91 video shows pipe full of sediment. Replace with proposed proj
East 4th St.	CO5	133	37.9		8	PVC	204	0						37.9ft Pipe is Capped
							70,065	865						

Appendix C

Surface Water Discharge Permit and Statement of Basis

Permit No.: SD0022659

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3181

SURFACE WATER DISCHARGE PERMIT

AUTHORIZING DISCHARGE

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota, Article 74:52,

the ***city of Miller***

is authorized under this permit to discharge to

Ree Creek

from its wastewater treatment facility located about one mile north of the city in the northwest ¼ of Section 2, Township 112 North, Range 68 West, in Hand County, South Dakota (Latitude 44.545083, Longitude -98.97975), in accordance with discharge points, effluent limits, monitoring requirements, and other conditions set forth herein. Authorization is limited to those outfalls specifically listed in the permit. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

This permit shall become effective **April 01, 2009.**

This permit and the authorization to discharge shall expire at midnight, **March 31, 2014.**

Signed this 31st day of March 2009.

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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DEFINITIONS

30-day (and monthly) average means the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

7-day (and weekly) average means the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

ARSD means the Administrative Rules of South Dakota.

An **Authorized Release** is a discharge from a permitted outfall that meets all permit conditions and effluent limits.

BOD_5 means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **Bypass** is the intentional diversion of waste streams from any portion of a treatment facility. Bypasses do not include releases from the sanitary sewer collection system (see sanitary sewer overflow) or unauthorized releases from the treatment facility (see unauthorized release). Bypasses may result in a discharge or unauthorized release.

Composite samples shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

1. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

2. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

3. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

4. Continuous collection of sample, with sample collection rate proportional to flow rate.

Daily maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

A **Grab** sample, for monitoring requirements, is a single “dip and take” sample collected at a representative point in the discharge stream.

An **Instantaneous measurement**, for monitoring requirements, is a single reading, observation, or measurement either taken at the facility or within 15 minutes of the sample.

MGD is the measure of flow rate meaning million gallons per day.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

A **Publicly-owned treatment works** or **POTW** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

A **Sanitary sewer overflow** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system, including sewer lines, manholes, lift stations, etc.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

Severe property damage is substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sewage sludge is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

TSS means **Total Suspended Solids**. TSS is a measure of the filterable solids present in a sample.

An **Unauthorized release** is a discharge from the lower end of the treatment or containment system through a release structure or over or through retention dikes that does not meet all permit conditions or effluent limits. An unauthorized release is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to treatment or containment.

An **Upset** is an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

1.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1.1 Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under this permit is a violation of the South Dakota Water Pollution Control Act and could subject the person(s) responsible for such discharge to penalties under Section 34A-2-75 of the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from the permittee first learning of an unauthorized discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

Outfall Number	Description of Discharge Points
001	Any discharge from the discharge structure located in the third cell (Latitude 44.547194, Longitude -98.983361 – Navigational Quality GPS).

1.2 Effluent Limits – *Outfall 001*

Effective immediately and lasting through the life of this permit, the quality of effluent discharged by the facility shall, as a minimum, meet the limits as set forth below:

Effluent Characteristic	Effluent Limit		
	30-Day Average[1]	**7-Day Average**[1]	**Daily Maximum**[1]
Five-Day Biochemical Oxygen Demand, mg/L	30	45	N/A
Total Suspended Solids, mg/L	110	165	N/A
The pH of the discharge shall not be less than 6.0 standard units or greater than 9.0 standard units in any sample.			
No chemicals, such as chlorine, shall be used without prior written permission.			

[1] See Definitions.

1.3 Self-Monitoring Requirements

All discharges, sanitary sewer overflows, and unauthorized releases shall be monitored for the following parameters at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge.

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Duration of Discharge, days	Monthly	Monthly Total[2]	Calculate
Total Flow, million gallons	Monthly	Monthly Total	Calculate
pH, standard units	At least three per discharge [6]	Daily Minimum; Daily Maximum	Instantaneous[3,4]
Water Temperature, °C[5]	At least three per discharge[6]	Daily Maximum; 30-Day Average	Instantaneous [5]
Flow Rate, MGD	At least three per discharge[6]	Daily Maximum; 30-Day Average	Instantaneous
Five-Day Biochemical Oxygen Demand, mg/L	At least three per discharge[6]	Maximum 7-Day Average; 30-Day Average	Grab
Total Suspended Solids, mg/L	At least three per discharge[6]	Maximum 7-Day Average; 30-Day Average	Grab

[1] See Definitions.

[2] The date and time of the start and termination of each discharge shall also be reported in the comment section of the DMR.

[3] pH shall be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[4] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[5] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

[6] A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week. All of the samples collected during the 7-day or 30-day period are to be used in determining the averages. The permittee always has the option of collecting additional samples if appropriate.

1.4 Inspection Requirements

The permittee shall inspect its wastewater treatment facility and the outfall on at least a **monthly** basis. During a discharge, the permittee shall inspect the facility on at least a **daily** basis. The inspection shall be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. In addition, the inspection shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility. Lift stations shall be inspected at least **weekly.** The permittee shall maintain a notebook recording information obtained during the inspection. At a minimum, the notebook shall include the following:

1. Date and time of the inspection;

2. Name of the inspector(s);

3. The facility's discharge status;

4. The measured amount of freeboard or water depth in each pond;

5. Identification of operational problems and/or maintenance problems;

6. Recommendations, as appropriate, to remedy identified problems;

7. A brief description of any actions taken with regard to problems identified; and,

8. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the notebook available for inspection, upon request, by the Secretary or the U.S. Environmental Protection Agency.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1 Representative Sampling

Samples taken in compliance with the monitoring requirements established under this permit shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2.2 Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR, Part 136, unless other test procedures have been specified in this permit.

2.3 Reporting of Monitoring Results

Effluent monitoring results obtained during the previous three months shall be summarized for each month, reported on separate Discharge Monitoring Report Forms (EPA No. 3320-1), and submitted to SDDENR on a **quarterly** basis. These must be postmarked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with Section 2.4 and submitted to the Secretary at the following address:

original to: SD Department of Environment & Natural Resources
Surface Water Quality
PMB 2020
Joe Foss Building
523 East Capitol
Pierre SD 57501-3182

2.4 Signatory Requirements

All applications, reports or information submitted to the Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under 2.a above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2.5 Additional Monitoring by the Permittee

If the permittee monitors, at the designated points, any pollutant more frequently than required by this permit, using test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR 136 or as specified in this permit, the results of this monitoring shall be used in determining compliance with this permit.

2.6 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses were initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and,
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7 Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

2.8 Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

2.9 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions.

2.10 Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Reports, and a copy of this permit must be maintained on site during the duration of the permitted activity.

2.11 Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any emergency related to this permit or permitted-facility that may endanger health or the environment as soon as possible, but no later than twenty-four (24) hours after becoming aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours, or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. Instances of noncompliance, unanticipated bypasses, sanitary sewer overflows, unauthorized releases, and upsets shall be reported to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. - 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a. A description of the event and its cause;

   b. The period of the event, including exact dates and times;

   c. The estimated time the event is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Sections 2.3 and 2.4.

The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12 Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Section 2.3 are submitted. The reports shall contain the information listed in Section 2.11.

2.13 Permit Transfers

This permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1 Duty to Comply

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

3.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

3.3 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit or other conditions required by the Secretary upon issuance. This may include the maintenance of freeboard levels of lagoons or holding ponds. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3.4 Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3.5 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

3.6 Removed Substances

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7 Bypass of Treatment Facilities

1. Anticipated Bypass. Anticipated bypasses causing violation of effluent limits are prohibited, unless the Secretary approves the anticipated bypass after considering its adverse effects and determines that it will meet the following conditions:

    a. The bypass was unavoidable to prevent loss of life, threat to public health, personal injury, or severe property damage;

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

c. The permittee submitted notices as required under paragraph 3 of this section.

2. Anticipated Bypass Not Causing Violations. The permittee may allow anticipated bypasses to occur which do not cause effluent limit violations, but only if for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 1 and 3 of this section.

3. Notice of Bypass:

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 10 days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Section 2.11.

3.8 Sanitary Sewer Overflows

1. Reporting. Overflows from the sanitary sewer collection system shall be reported to the Secretary at (605) 773-3351 as soon as possible, but no later than the first business day after becoming aware of the sanitary sewer overflow. Anticipated overflows shall be reported in advance, if possible. In addition to verbal notification, the permittee shall submit to the Secretary a written report in accordance with Section 2.11, paragraphs 3 and 4.

2. Sampling. Sanitary sewer overflows shall be sampled at the same or similar frequency and for the same parameters as required for permitted outfalls. The results shall be included with the written report required in paragraph 1.

3. Plan Development. In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows, the permittee shall submit such a plan to the Secretary. The plan shall, at a minimum, address the following areas:

a. Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;

b. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational recordkeeping, and other appropriate items;

c. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance recordkeeping, parts and equipment inventory, and other appropriate items; and

d. Sewer system capacity evaluation: The capacity evaluation includes the following:

1. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);
2. Identification of problem areas (overflows, surcharged lines, basement backups, etc.);
3. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and
4. Sewer rehabilitation recommendations.

Upon the Secretary’s approval of the plan, the permittee shall implement the plan.

3.9 Upset Conditions

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of paragraph 2. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limits).

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under Section 2.11; and,

   d. The permittee complied with mitigation measures required under Section 3.2.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

3.10 Industrial Wastes

1. Each significant industrial user must be identified as to qualitative and quantitative characteristics of the discharge as well as production data. A significant industrial user is defined as an industrial user discharging to a publicly owned treatment works (POTW) that satisfies any of the following: (1) has a process wastewater flow of 25,000 gallons or more per average work day or contributes five percent or more of the average dry weather hydraulic or organic capacity of the municipal system receiving the waste; (2) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N or; (3) is determined by the Control Authority to have a reasonable potential to adversely impact the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

2. The permittee shall notify the Secretary of any new introductions by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user. Such notice must contain the information described in paragraph 1 above and be forwarded no later than 60 days following the introduction or change.

3. Pretreatment Standards [ARSD §74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the POTW from any source of nondomestic discharge:

   a. Pollutants which create a fire or explosion hazard in the POTW, including but not limited to, wastestreams with a closed cup flashpoint of less than 60 degrees Celsius (140 degrees Fahrenheit) using the test methods specified in ARSD §74:28:22:01, a.b.r. 40 CFR 261.21;

   b. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0 standard units unless the works are specifically designed to accommodate such discharges;

c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

d. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

e. Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Celsius (104 degrees Fahrenheit);

f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

h. Any trucked or hauled pollutants, except at discharge points designated by the POTW;

i. Any pollutant which causes pass through or interference; and,

j. In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Federal Clean Water Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

4. The permittee shall provide adequate notice to the Secretary of any substantial change in the volume or character of pollutants being introduced into the POTW by an industrial user. For the purposes of this section, adequate notice shall include information on:

a. The quality and quantity of effluent to be introduced into the POTW; and,

b. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

5. The Secretary retains the right to take legal action against the industrial user and/or the permittee, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

3.11 Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain coverage under a new permit. The permit application must be submitted at least 180 days before the expiration date of this permit. Periodically during the term of this permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility to discharge under this permit.

3.12 Availability of Reports

Except for data determined to be confidential under ARSD §74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of SDDENR. Permit applications, permits, and effluent data shall not be considered confidential.

3.13 Property Rights

The Secretary’s issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will

not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.14 Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

3.15 Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this general permit are modified in such a manner as to require different effluent limits than contained in this permit.

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limits than contained in this permit.

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this permit;

4. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA.

5. Whole Effluent Toxicity: Whole effluent toxicity is detected in the discharge.

6. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit; or

7. Other Changes: Other conditions or standards change so that the discharge no longer qualifies for this permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

3.16 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this permit or any condition imposed by the Secretary upon granting coverage under this permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in Sections 3.6 and 3.8, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

4.2 Penalties for Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3 Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4 Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act.

STATEMENT OF BASIS

Applicant:	City of Miller
Permit Number:	SD0022659
Contact Person:	James Bonebright- Superintendent 120 W 2nd St. P.O. Box 69 Miller S.D. 57362
Phone:	(605) 853 2705
Permit Type:	Minor Municipal - Renewal

DESCRIPTION

The city of Miller operates a wastewater treatment facility located about one mile north of the city in the northwest ¼ of Section 2, Township 112 North, Range 68 West, in Hand County, South Dakota (Latitude 44° 32' 42.3N", Longitude -98° 58' 47.1W"; Navigational Quality GPS).

The collection system for the city consists of gravity flow and two lift stations. The wastewater treatment facility consists of a three-cell lagoon system operated in series, with the flexibility to bypass and isolate any of the three cells for maintenance. The inter-pond piping has valves, but is designed to overflow to the next pond if the water level reaches five feet in cell 1, and six feet in cell 2. Cell 1 has a surface area of 17.5 acres, cell 2 is 7 acres and cell 3 is 17.5 acres.

This wastewater treatment facility began operation in 1964, was upgraded in 1982 with the addition of the third cell, and serves a population of 1,530 persons (2000 census). Minor industrial discharges contributing to the flow include a nursing home, hospital, one meat locker, two laundromats, and one car wash.

RECEIVING WATERS

Any discharge from this facility flows about 200 yards in a road ditch that parallels 196th Street then enters Ree Creek, which is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Section 74:51:03:01 for the following beneficial uses:

(9) Fish and wildlife propagation, recreation, and stock watering waters; and
(10) Irrigation waters.

Since the receiving waterbody has a minimum beneficial use classification of (9) and (10), the SDSWQS (ARSD Section 74:51:01:02.01) require that an analysis of the receiving stream be conducted to determine whether the waterbody deserves a higher beneficial use designation. The South Dakota Department of Environment and Natural Resources (SDDENR) has conducted an analysis for Ree Creek near the discharge

location. SDDENR personnel have determined that the beneficial use classifications for the Ree Creek are appropriate and will remain unchanged.

ANTIDEGRADATION

The South Dakota Department of Environment and Natural Resources (SDDENR) has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedures and the SDSWQS, no further review is required. The results of SDDENR's review are included in Attachment 1.

MONITORING DATA

The city of Miller has been submitting Discharge Monitoring Reports (DMRs) as required under the current permit. As shown in Attachment 2, this facility has had one pH violation since the last on site inspection. However, this violation seems to be isolated and does not reflect the overall treatment performance of this facility. No future violations are expected. No discharge was reported for the months not included in the table.

INSPECTIONS

Personnel from SDDENR conducted a *Compliance inspection* of the Miller wastewater treatment facility on June 5, 2006. The following requirements and recommendations were made:

Requirements and Corrective Actions

1. The city has had 5 violations of the Total Suspended Solids limits since last inspection on October 28, 2003:
    - 30-day average November 30, 2004;
    - 30-day and 7-day averages August 31, 2005; and
    - 30-day and 7-day averages March 31, 2006.

    During the permit renewal process, the city's TSS variance was removed from the currently effective permit (application received in 1999, permit issued in 2004). The limits currently in effect are based on the secondary treatment standards. The city has requested that this variance be re-issued. Because the city has been in compliance with BOD_5 limits since 2001, the department will re-evaluate whether or not granting the variance is appropriate.

    If the city meets the requirements for the higher limit, this change will be considered a major modification and will require public notice.

2. The March 2006 Discharge Monitoring Report was reviewed during the inspection. The weekly and monthly averages for the March 2006 discharge were properly calculated. However, because the discharge occurred during the last week of the month (March) with the last Saturday being in the following month (April) – for reporting purposes, the 7-day averages for TSS and BOD_5 should be

reported as NA (Not Applicable) on the March DMR and these values should be reported on the April DMR.

This is referred to as the Saturday rule and it usually causes confusion. I would recommend that the operator call the department for assistance if this situation occurs again.

Please correct the DMR and submit it within 14 days of receipt. The city may also want to submit the April DMR at this time to avert future confusion.

Recommendations and Comments

1. The budget numbers reviewed during the inspection were the 2006 proposed budget and the revenue averaged from the 2006 January – March sewer use fees. Based on this limited information, it appears that the city may not have enough revenue collected from fees to cover the expenses in the budget. In addition, the current sewer usage rates are $15.00 per month. In order to have an adequate source of funds for repairs and replacement of the city's wastewater collection and treatment system, we recommend that the city continue to review its wastewater rates and give serious consideration to raising them. Several communities are facing upgrades, rehabilitation, or new construction. These construction costs are typically very large and cannot be accomplished without the community leaders having the foresight to set appropriate wastewater rates to cover these costs as well as the cost of operation and maintenance. Many communities facing construction projects are finding that an appropriate rate is approximately $17 per household per month.

2. The city should continue to develop and implement an emergency response plan and/or a priority call list in the event of a sewer line break, severe storm, or natural disaster. An emergency response plan and a priority call list will aid the city in handling these events. For further information or assistance in preparing an emergency response plan, please contact the South Dakota Association of Rural Water Systems at (605) 336-7219, or visit their website, http://www.sdarws.com/

EFFLUENT LIMITS

The permittee shall comply with the effluent limits specified below. These limits are based on the Secondary Treatment Standards (ARSD Section 74:52:06:03), and current permit limits.

Outfall 001 – Any discharge from the discharge structure located in the third cell (Latitude 44.547194, Longitude -98.983361; Navigational Quality – GPS).

1. The BOD_5 concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on the Secondary Treatment Standards.

2. The Total Suspended Solids (TSS) concentration shall not exceed 110 mg/L (30-day average) or 165 mg/L (7-day Average). These limits are based on the Secondary Treatment Standards and current permit limits.

   Note: ARSD Section 74:52:06:04(2) allows TSS limits less stringent than Secondary Treatment Standards if it can be demonstrated that:

   a) Waste stabilization ponds are the principal process used for secondary treatment;
   b) Operation and maintenance data indicate that TSS values specified in subdivision 74:52:06:03(3) cannot be achieved;
   c) The effluent quality for TSS does not exceed 110 mg/L for 30-day average and 165 mg/L for 7-day average; and
   d) The POTW is achieving levels of effluent quality required for BOD_5 specified in Section 74:52:06:03.

   Because the facility meets the above criteria, the TSS variance is allowed.

3. The pH shall not be less than 6.0 standard units or greater than 9.0 standard units in any single analysis and/or measurement. These limits are based on the Secondary Treatment Standards.

   Note: SDDENR specifies that pH analyses are to be conducted within 15 minutes of sample collection with a pH meter. Therefore, the permittee must have the ability to conduct onsite pH analyses. The pH meter used must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment

4. No chemicals, such as chlorine, shall be used without prior written permission.

Effluent water temperature (°C), flow rate (MGD), total flow (million gallons), and duration of discharge (days) shall be monitored, but will not have a limit.

SELF MONITORING REQUIREMENTS

As a minimum, upon the effective date of this permit, the following parameters shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge.

A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week. All samples collected during the 7-day or 30-day period shall be used in determining the averages. The permittee always has the option of collecting additional samples if appropriate.

Effluent monitoring results shall be summarized for each month and recorded on separate DMRs to be submitted to SDDENR on a **quarterly** basis. If no discharge occurs during a month, it shall be stated as such on the DMR.

Monitoring shall consist of **monthly** inspections of the facility and the outfall to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. **Daily** inspections are required during a discharge. The lift stations shall be inspected on at least a **weekly** basis, although **daily** inspections are recommended. Documentation of each of these visits shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

SLUDGE

Based on the city of Miller's permit application, SDDENR does not anticipate sludge will be removed or disposed of during the life of the permit. Therefore, the proposed Surface Water Discharge permit shall not contain sludge disposal requirements. However, if sludge disposal is necessary, the city of Miller is required to submit to SDDENR a sludge disposal plan for review and approval **prior** to the removal and disposal of sludge.

DRAINAGE ISSUES

Hand County has the authority to regulate drainage. The city of Miller is responsible for getting any necessary drainage permits from the county **prior** to discharging.

ENDANGERED SPECIES

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit.

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

Any questions pertaining to this statement of basis can be directed to Jonathan Hill Natural Resource Engineer, for the Surface Water Quality Program, at (605) 773-3351.

January 9, 2009

ATTACHMENT 1

Antidegradation Review

Permit Type: **Minor Municipal - Renewal** Applicant: **City of Miller**

Date Received: **August 18, 2008** Permit #: **SD0022659**

County: **Hand** Legal Description: **NW ¼ of sec 2, T 112N, R 68W**

Receiving Stream: **Ree Creek** Classification: **9,10**

If the discharge affects a downstream waterbody with a higher use classification, list its name and uses: **N/A**

APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:

☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;

☐ *Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;

☐ *Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;

☐ *The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;

☒ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;

☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;

☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or

☒ Other: This permit does not authorize an increase in effluent limits.

*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

No further review required.

ANTIDEGRADATION REVIEW SUMMARY

2. The outcome of the review is:

- ☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
- ☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
- ☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
- ☐ The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
- ☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
- ☐ Other: _____

3. Describe any other requirements to implement antidegradation or any special conditions That are required as a result of this antidegradation review: _____

Jonathan Hill	September 22, 2008
Reviewer	Date
Kelli D. Buscher, P.E.	September 22, 2008
Team Leader	Date

ATTACHMENT 2

Monitoring Data

Outfall 001 - A, Monitoring Location: Effluent Gross

	BOD5	BOD5	Duration of discharge	Flow	Flow rate	Flow rate	pH	pH	TSS	TSS	Temperature	Temperature
	30DA AVG	MX 7D AV	MO TOTAL	MO TOTAL	30DA AVG	DAILY MX	DAILY MN	DAILY MX	30DA AVG	MX 7D AV	30DA AVG	DAILY MX
Limit	30 mg/L	45 mg/L	N/A d	N/A Mgal/mo	N/A Mgal/d	N/A Mgal/d	6 SU	9 SU	110 mg/L	165 mg/L	N/A deg C	N/A deg C
DMR End Date												
11/30/2006	22	23	10	13.7	1.37	5.19	***5.87***	6.18	57.5	60.67	6.55	7.9
4/30/2007	20.75	22	14	19.04	1.36	5.71	7.8	8.38	68	108	14.72	16.8
9/30/2007	29	37	18	22.86	1.27	8.1	6.56	8.1	94	116	20.04	21.5
4/30/2008	16	22	12	19.56	1.63	5.25	6.11	6.25	64.5	124	11.2	13

Appendix D

SD Department of Environment and Natural Resources Wastewater System Inspection Report

DEPARTMENT OF ENVIRONMENT and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

August 22, 2014

The Honorable Ronald Blachford
Mayor
120 W. 2nd Street
Miller, SD 57362-1316

RE: Surface Water Discharge Compliance Inspection (SWD Permit Number: SD0022659)

Dear Mayor Blachford:

The South Dakota Department of Environment and Natural Resources conducted a Surface Water Discharge Compliance Inspection of the city's wastewater treatment facility on August 6, 2014. I appreciate Mr. Jim Bonebright's time and cooperation in supplying the requested information.

The administration and operating personnel are commended for the excellent operation, maintenance, and preventive maintenance programs. The continued improvement will extend the normal life of the facility and assure water quality benefits to the community and the state.

I have attached an inspection summary and a copy of the inspection report. Please pay special attention to the inspection summary tables and implement the required corrective actions as soon as possible. All corrective actions taken will be reviewed during our next inspection at your facility.

Thank you for your continued efforts to protect the environment and natural resources of South Dakota. Please review this report for accuracy, and respond within thirty days with any needed corrections. If you have any questions about this letter or the inspection / file review reports, please contact me at (605) 773-3351.

Sincerely,

Tim Flor

Environmental Scientist III/Inspector
Surface Water Quality Program

Enclosures

cc: Jim Bonebright, City of Miller
SWD File - Pierre

INSPECTION SUMMARY

Facility: City of Miller

SWD Permit: SD0022659

Inspection Date:

The following comments detail violations of the permit that were identified during the inspection Corrective actions are required for the city to come into compliance with its surface water discharge permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The city of Miller has experienced numerous effluent violations of pH, BOD_5, and TSS in the last three years. The city had 5 discharges in the last 3 years. Only 1 of the 5 discharges that did not have any permit violations. The other four discharges had at least 1 TSS, 7 BOD, and *10 pH violations. ***Please note that some of the pH violations may be due to a faulty or incorrectly calibrated meter. But they are still violation.**	The city **must** look into modifications of its operation to allow for adequate treatment of the wastewater. These violations are not acceptable and can lead to enforcement actions which can include fines and penalties. Please contact the department at the number listed on the previous page if you wish to have assistance from the state with these modifications.
On the May 2014 DMR, the number of exceedances (No. EX) column was not filled out correctly when there are violations.	If any of the calculated values or any of the Daily Maximum samples exceed the permit limits, it must be marked as an exceedance on the DMR. If you have questions about filling out DMRs, please contact this office for assistance. Please begin doing this with the next DMR submittal.

NON-MECHANICAL FACILITY INSPECTION CHECKLIST

SOUTH DAKOTA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

I. General Facility Information

Name	City of Miller		
Location	NE corner of the city.		
SWD Permit No.	SD0022659		
Contact Person / Title	Jim Bonebright, Water & WW Super.	**Phone Number** (City Hall) (Cell)	(605) 853-2705 (605) 204-0564
Responsible Party/Title	Ron Blachford / Mayor	**Phone Number** (City Hall)	(605) 853-2705

Persons present during the inspection:

Name	Title/Phone	Affiliation
Jim Bonebright	Same	City of Miller
Tim Flor	Inspector / (605) 773-3351	SDDENR

Mailing Address	120 W. 2nd, Miller, SD 57362-1316		
Street Address	Same		
Inspection Date	08/06/2014	**Last Inspection Date**	File Review (02/14/2012) On-site (07/27/2010)
Entrance Time	9:30 AM	**Exit Time**	12:00 PM
Permit Effective Date	04/01/2009	**Permit Expiration Date**	03/31/2014
Avg. Reported Flow Rate	Unknown	**Avg. Design Flow Rate**	0.27 MGD
Population Served	1489 (2010 Census)	**Design Population Equivalent (if known)**	Unknown
Date Facility Began Operation	1964	**Dates of Facility Upgrades**	1982
Receiving Water:	Road ditch then 200 yards to Ree Creek.		
Classification:	9, 10		

Facility Description from Statement of Basis:

The city of Miller operates a wastewater treatment facility located about one mile north of the city in the northwest ¼ of Section 2, Township 112 North, Range 68 West, in Hand County, South Dakota (Latitude 44° 32' 42.3N", Longitude -98° 58' 47.1W"; Navigational Quality GPS).

The collection system for the city consists of gravity flow and two lift stations. The wastewater treatment facility consists of a three-cell lagoon system operated in series, with the flexibility to bypass and isolate any of the three cells for maintenance. The inter-pond piping has valves, but is designed to overflow to the next pond if

the water level reaches five feet in cell 1, and six feet in cell 2. Cell 1 has a surface area of 17.5 acres, cell 2 is 7 acres and cell 3 is 17.5 acres. This wastewater treatment facility began operation in 1964, was upgraded in 1982 with the addition of the third cell, and serves a population of 1,530 persons (2000 census). Minor industrial discharges contributing to the flow include a nursing home, hospital, one meat locker, two Laundromat's, and one car wash.

Does the facility match the above description? **No, there is only one laundromat.**

Is a permit modification needed? **No**

II. Personnel Inventory and Budget

Number of personnel: **3**

Certification	Class I	Class II	Class III	Class IV
Wastewater Treatment	XX			
Wastewater Collection		XX		

Is a certified operator required? If yes, what classification is required? **Class 1 Treatment and Class 2 Collection**

Budget: **Fiscal Year 2013**

Annual wastewater expenses	**$ 134,305.44**	Residential Sewer Use Fee	**$ 27.00**
Annual wastewater revenue	**$ 186,246.73**	Commercial Sewer Use Fee	**$ 27 +$1/1000 Gal. over 6000 Gal.**

Describe any wastewater projects planned during the next three years. **Televise and GIS lines and curb stops, then will redo collection System as needed.**

Describe measures taken to raise funds for the project(s). **WW Funds, CD's, Savings, Loans, Grants**

Personnel and budget comments: No comments.

III. Required Recordkeeping and Reporting

Permit Verification

		Yes	No	N/A
1.	Is a current copy of the permit and other related materials readily available?	X		
2.	Are the number and location of discharge points as described in the permit? If no, explain.	X		
3.	Facility, address and contact information is correct in the SWD Database? (Including: Fees, SSO's, PTD's, Inspections, PDF's, Flooding Reports, etc.)	X		
4.	Facility, address and contact and permit information is correct in the ICIS Database? (Including: Monitoring and Limits, Inspections, Construction Schedules, etc.)	X		
5.	Has there been any new, different, or increased loading to the WWTF? If yes, describe changes.		X	
6.	Are influent flows increasing or decreasing? **About the same.**			
7.	List any industries/non-domestic contributors. **Laundromat, nursing home, hospital, meat locker, car wash**			X

Permit verification comments: **No comments.**

Inspection Records

	Yes	No	N/A
1. The following necessary information is current, complete, and reasonably available:			
a. Inspection notebooks for the WWTF with the following information:	X		
i. Date and time of the inspection	X		
Ii Name or initials of inspector	X		
iii. Facility's discharge status	X		
iv. Measured depth of the ponds or measured freeboard	X		
v. Identification of operational/maintenance problems	X		
vi. Recommendations to remedy problems	X		
vii. Steps taken to remedy problems	X		
b. Lab results	X		
c. pH testing	X		
d. Discharge Monitoring Reports (DMRs)	X		
e. Emergency discharge forms	X		
f. Other: _____			X
g. Other: _____			X
2. Is information is maintained for the required 3-year period?	X		

Inspection records comments: They also have the SCADA system. The ponds are usually inspected daily.

Sampling and Laboratory Information

	Yes	No	N/A
1. The following sampling and analysis requirements are met:			
a. Dates, times, locations of sampling are recorded.	X		
b. Initials of person performing sampling are recorded.	X		
c. The pH meter meets the following specifications:	X		
i. Capable of simultaneous two-point calibration	X		
ii. Reads to two decimal places	X		
iii. Temperature compensation adjustment	X		
d. pH meter is calibrated properly before use.	X		
e. pH calibration logbook is maintained with the following information:			
i. Date	X		
ii. Time	X		
iii. Initials of person performing calibration	X		
iv. 7 buffer reading	X		
v. 10 buffer reading	X		
vi. Temperature of buffer	X		
vii. Buffer expiration date	X		
f. Is the permittee performing any other tests?		X	
2. Are samples taken at sampling location specified by permit? _____	X		
3. Is the permittee using the method of sample collection required by the permit?	X		
Required method: Grab, Instantaneous			
4. Sample collection procedures adequate and include:			
a. Sample refrigeration during compositing.			X
b. Proper preservation techniques.	X		
c. Containers in conformance with 40 CFR 136.3.	X		
Specify any problems: _____			

5. Laboratory Information (from lab result sheets)

Name:	**State Health Lab**
Address:	**615 E 4th Street, Pierre, SD 57501**
Contact:	**Stacy Ellwanger**
Phone:	**605-773-3361**
Parameters tested:	**BOD, TSS**
Dates, times, and initials of person performing analyses are recorded:	**Yes**

Sampling and laboratory comments: They have had issues with their new pH meter not calibrating properly.

Flow Measurement:

Type of effluent flow measurement device: **Calculated from depth indicators**

	Yes	No	N/A
1. Is flow measured at each outfall? Number of outfalls: **1**	X		
2. Are facility personnel calculating flows properly?	X		
3. Are the proper flow tables used by facility personnel?	X		
4. If flow measurement equipment adequate to handle expected ranges of flow rate?	X		

Comments on effluent flow measurement: There is an old weir but no plate. They do not use the weir for anything.

Self-Monitoring Reporting Information

	Yes	No	N/A
1. Operator is aware of permit conditions (especially SSO and violation reporting?)	X		
2. Is the facility required to obtain permission from the department before discharging?		X	
a. If yes, has the facility requested permission to discharges?			X
b. If yes, has the facility received permission to discharges?			X
c, If yes, has the facility been denied permission to discharge?			X
3. Is the facility approved for NetDMR? (If so, there will be no DMRs in the file after the approval date.)	X		
4. Are DMRs being submitted to DENR as required by the permit?	X		
a. Are they submitted on time?	X		
Use the attached DMR Calculations Form to help answer 5 – 8 for most recent discharges.			
5. Is monitoring for required parameters performed at least as frequently as required by the permit?	X		
a. Are they sampling more frequently?		X	
6. Is the geometric mean properly calculated and recorded for fecal/total coliform data?		X	
7. Are weekly and monthly averages calculated properly and reported on the DMR?	X		
8. Are the maximum and minimum values of all data points reported properly?	X		
9. Is the number of exceedances column (NO. EX) completed properly?		X	
10. Is the permit signatory or authorized representative signing the DMRs?	X		
11. Are sample types reported properly?	X		
12. Does the facility do WET testing? If so, Acute or Chronic?		X	

Self-monitoring or DMR comments: The # of Ex. are not filled out correctly on the May 2012 DMR for BOD. It should be 2, not 1 as reported. The May 2014 DMR for BOD should also be 2, not 1 in the # Ex. Box.

DMR Calculations Form

Month of ***May 2014***

Week 1							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
5/5	37	100	9.9	Not	17.8	----------	----------
5/6	31	88	9.93	Available	16.8	----------	----------
5/7	28	68	7.5	----------	15.6	----------	----------
Week Total	96	256	----------	----------	----------	----------	----------
÷ # of Samples	3	3	----------	----------	----------	----------	----------
=7-Day Avg.	32	85.3	----------	----------	----------	----------	----------

Week 2							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
5/12	41	130	9.45	N/A	10.3	----------	----------
Week Total	41	130	----------	----------	----------	----------	----------
÷ # of Samples	1	1	----------	----------	----------	----------	----------
=7-Day Avg.	41	130	----------	----------	----------	----------	----------

Week 3							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
5/20	39	56	8.93	N/A	20.9	----------	----------
Week Total	39	56	----------	----------	----------	----------	----------
÷ # of Samples	1	1	----------	----------	----------	----------	----------
=7-Day Avg.	39	56	----------	----------	----------	----------	----------

Week 4 (if applicable)							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
*5/27	85	140	9.46	N/A	29.4	----------	----------
Week Total	85	140	----------	----------	----------	----------	----------
÷ # of Samples	1	1	----------	----------	----------	----------	----------
=7-Day Avg.	85	140	----------	----------	----------	----------	----------

Monthly Summary							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
Daily Max.	----------	----------	9.93	N/A	29.4	----------	----------
Daily Min.	----------	----------	7.5	----------	---------	----------	----------
Max. 7-day Avg.	85	140	----------	----------	---------	----------	----------
Month Total	261	582	----------	Not	110.8	----------	----------
÷ # of Samples	6	6	----------	Available	6	----------	----------
=30-Day Avg.	43.5	97	----------	----------	18.5	----------	----------

Reported on DMR							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (ºC)	Ammonia (mg/L)	Fecal (#/100 ml)
Daily Max.	----------	----------	9.93	N/A	29.4	----------	----------
Daily Min.	----------	----------	7.5	----------	---------	----------	----------
Max. 7-day Avg.	85	140	----------	----------	---------	----------	----------
30-Day Avg.	43.5	97	----------	----------	18.47	----------	----------

***Lab Comments - Lots of bugs in the sample**

IV. Facility Compliance Review

Effluent Violations

			Yes	No	N/A
1.	Has the facility discharged since the last inspection? If yes, list how many.	5	X		
2.	Is the facility in compliance with all effluent limits since the last inspection?			X	
a.	Effluent BOD5 violations. If yes, how many?	7	X		
b.	Effluent TSS violations. If yes, how many?	1	X		
c.	Effluent pH violations. If yes, how many?	10	X		
d.	Effluent ammonia violations. If yes, how many?				X
e.	Effluent fecal coliform violations. If yes, how many?				X
f.	Effluent total coliform violations. If yes, how many?				X
h.	Effluent temperature violations. If yes, how many?				X
i.	Effluent TRC violations. If yes, how many?				X
j.	Other violations. If yes, list parameter and number of occurrences .			X	

Effluent violations comments: There are several effluent violations since the last inspection. All violations have been addressed by Warning Letters, except for the May 2014 discharge. These violations were not flagged in NetDMR due to a bug in the system where if they leave out the = sign, it will not make you acknowledge them. The operator did put in the # of Ex., attached a letter and had reported it as required. There were 4 of the 6 pH readings that were over the Daily Mx limit of 9.0 SU. This was incorrectly reported as 1 in the # Ex. Box. The correct number should be 4. BOD was incorrectly reported as 1 in the # Ex. box and should be 2 because there was 1 30 Day Ave and 1 Mx 7 Day Ave violation.

Compliance Schedule

		Yes	No	N/A
1.	Is the facility subject to a compliance schedule either in its permit or in an enforcement action? If yes, note date and type of enforcement action.		X	
2.	List milestones that remain in the schedule:			
3.	Has facility has missed milestone dates? If yes explain:			X
4.	Will the facility meet or do they plan to meet final compliance schedule date?			X

Compliance schedule comments: No comments.

Facility Review

		Yes	No	N/A
1.	Are written emergency procedures established (in the event of a major storm event, a chemical release into the sewer system, a sewer main break, etc.)?	X		
2.	Can the facility be bypassed (internal, collection system, total)? Describe bypass procedures:		X	
3.	Does the facility accept hauled (septage) wastes? If yes, list amount and hauler contact information. **Septic hauler is Brad Manning Digging.**	X		
4.	Does the facility accept industrial or nondomestic wastes? If yes, list amount and sources.		X	
5.	Has the facility experienced problems with industrial or hauled wastes? If yes, explain:		X	
6.	Are the non-domestic users regulated by sewer ordinance? If yes, attach relevant ordinance.	X		

Facility review comments: No comments.

V. Collection System

Piping and Manholes

Type of Collection System

☒ Separate ☐ Combined (San + Storm)
☐ Both ☐ Other

		Yes	No	N/A
1.	Is a routine sewer-cleaning schedule maintained? If yes, what is the schedule and what type of equipment is used? **As needed and problem areas annually.**	X		
2.	Have sewer backups occurred into basements during high flows since the last inspection? If yes, explain:		X	

If overflows occurred at this facility, the information from question 3 should be entered in the SSO database.

		Yes	No	N/A
3.	Have manholes overflowed during high flows? If yes, give dates, volumes, receiving waters, etc.		X	
4.	Was DENR notified of any overflows or unauthorized releases? If no, why not?			X
5.	Were samples taken of the overflow/unauthorized release? If yes, list the sample results in the comment section below. If no, explain.			X
6.	Have bypasses occurred from the collection system (including lift stations) since the last inspection? If yes, explain (date, volumes, receiving water, etc.)		X	
7.	Does the community have a sump pump ordinance? If yes, how is it enforced? **Newspaper, door to door if needed.**	X		
8.	Has testing for inflow/infiltration sources been conducted since the last inspection? If yes, describe testing. **SPN currently.**	X		
9.	Have sources of inflow/infiltration been identified?	X		
10.	Have measures been taken to correct inflow/infiltration problems?	X		
11.	Has the collection system been upgraded since the last inspection? If yes, describe: **In progress.**	X		
12.	Miles of collection system, if known: **About 18-20 miles**			

Piping and manhole comments: Collection system is being studied now and it will be determined what needs to be done soon.

Lift Stations

Item	Comments
Number of lift stations	**2**
Type of lift stations (wetwell/drywell or submersible)	**Main is Wetwell/Drywell, Park is Submersible**
List areas served	**East edge of city and west of city park.**
Inspection frequency	**Daily – SCADA, Visually at least monthly**
Condition of lift stations	**Very good**
Alternative power source available for each lift station	**Portable Generators**
Wetwell baskets (quantity)	**2**
Cleaning schedule	**About every two months.**
Bar screens (quantity)	**N/A**
Cleaning schedule	**N/A**
Screening disposal method	**Bury on site.**
Dehumidifier working properly (if applicable)	**Yes**
Ventilation system working properly (if applicable)	**Yes**
Type of alarm system	**Lights, Horns, SCADA/auto dialer on both.**
Alarm system working properly	**Yes**
Lift station have hour meters	**Yes**
Hour meters are logged in an inspection notebook	**SCADA**
Pump ratings	**~ 100 GPM**
Pump calibration schedule	**Annually by Dakota Pump**
Are inspections being documented?	**SCADA**

Comments concerning lift stations: No comments.

VI. Treatment Processes

Stabilization Ponds

Item	Comments
Inspection frequency	**At least daily**
Weeds and/or trees growing on the dikes	**No**
Vegetation growing in the ponds	**No**
Pond dikes protected from erosion with riprap	**Yes**
Dike structure failure (sloughing and/or sagging)	**No**
Evidence of erosion	**Minor in a spot or two.**
Pond seepage surfacing reported	**None**
Sludge: Past disposal practices	**N/A**
Future Plans	**No**
Observation of sludge accumulation	**None**
Fencing in good condition	**Yes**
All access gates are kept locked	**Yes**
Signs legible and properly located	**Yes**
Facility accessible in all weather conditions	**Yes**
Evidence of burrowing animals	**No**
Evidence of grazing animals	**No**
Odor problem (except seasonal turnover)	**No**
Inter-pond piping valves are working and used	**Yes**
Depth indicator(s)	**Yes, in all cells**
Discharge structure (valve control, overflow, etc.)	**Valve controlled**
Which ponds are drawn down during a discharge?	**Cell 3**
Cells operated in series or parallel	**Series – Valves but also overflow pipes between cells.**
Are chemicals added for algae, insects, etc?	**None**

Cell information (stabilization pond)

	Cell # 1	Cell # 2	Cell # 3
Maximum operation depth	**6'**	**6'**	**6'**
Current operating depth	**3'**	**3'**	**3'**
Minimum operating depth	**2'**	**2'**	**2'**
Surface area at maximum depth	**17.5 A**	**7 A**	**17.5 A**

Comments concerning stabilization ponds: No Comments.

For Office Use Only			
Rating: ☒ S ☐ M ☐ U	Other: MOD ☐ ASSIST ☐ SEV ☐ ENF ☐		
Name of Inspector	**Signature**	**Affiliation / Phone**	**Date**
Tim Flor		*SDDENR / (605) 773-3351*	8-22-14
Name of Reviewer	**Signature**	**Affiliation / Phone**	**Date**
Albert Spangler, P.E.		*SDDENR / (605) 773-3351*	8/22/14

RESOLUTION #2011-8

WHEREAS, the Council has deemed it necessary to raise the water and sewer rates,

THEREFORE, BE IT RESOLVED that the following water and sewer rates will be effective with the November usage:
2011

SEWER RATES

MINIMUM CHARGE: $22.00 per month
Commercial Accounts using over 6,000 gallons of water per month add $1.00/1,000 gallons

WATER RATES

RESIDENTIAL RATE: $21.00 base fee per month plus:
0-1,000 gallons $2.00 per thousand gallons
1,001-10,000 gallons $3.50 per thousand gallons
10,001-20,000 gallons $4.00 per thousand gallons
20,001-30,000 gallons $4.50 per thousand gallons
30,001-40,000 gallons $5.00 per thousand gallons
40,001-50,000 gallons $5.50 per thousand gallons
50,001 gallons and over $6.00 per thousand gallons
COMMERCIAL RATE: $3.50 per 1,000 gallons,
Plus required to pay base fee

BASE FEE ACCORDING TO METER SIZE:

5/8"-1" meter	$31.00
11/2" meter	$36.00
2" meter	$46.00
3" meter	$56.00
4" meter	$66.00
6" meter	$86.00

COMPOUND METER CHARGES:

5/8" X 2" meter	$46.00
3/4" X 3" meter	$56.00
1" X 4" meter	$66.00
112"X 6" meter	$86.00
2" X 8"	$101.00

Ronald Blachford, Mayor

ATTEST:

Laura Smith, Finance Officer
(SEAL)

RESOLUTION #2013-10

WHEREAS, The City Council has deemed it necessary to raise the sewer rates,

THEREFORE, BE IT RESOLVED that the following sewer rate increase will be effective with the September, 2013 usage:

Minimum monthly sewer rate: $27.00

Commercial Accounts using over 6,000 gallons of water per month, add $1.00/1,000 gallons.

Dated this 19th day of August, 2013.

Ronald Blachford, Mayor

ATTEST:

Sheila Coss, Finance Officer

SEAL

CITY OF MILLER
*Budget YTD Rev-Exp©

Current Period: December 2013

		2013 YTD Budget	2013 YTD Amt	December MTD Amt	2013 YTD Balance	% of Budget
SEWER FUND						
	Revenues	$200,435.00	$186,246.73	$0.00	$14,188.27	92.92%
	Expenditures	$195,605.00	$134,305.44	$0.00	$61,299.56	68.66%
	Profit(Loss)	$4,830.00	$51,941.29	$0.00	($47,111.29)	1075.39%
Revenue						
Active	R 602-383-3131 SALES TAX DUE	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3310 FEDERAL GRANT	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3340 STATE GRANTS	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3611 INTEREST EARNE	$2,500.00	$277.79	$0.00	$2,222.21	11.11%
Active	R 602-383-3622 RENT - LAND	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3831 SEWER - USERS	$197,435.00	$185,662.68	$0.00	$11,772.32	94.04%
Active	R 602-383-3832 SALE OF SUPPLIE	$500.00	$306.26	$0.00	$193.74	61.25%
Active	R 602-383-3833 SEWER SURCH R	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3839 OTHER SEWER R	$0.00	$0.00	$0.00	$0.00	0.00%
Active	R 602-383-3913 SALE OF MUN. PR	$0.00	$0.00	$0.00	$0.00	0.00%
	Total Revenue	$200,435.00	$186,246.73	$0.00	$14,188.27	92.92%
Expenditure						
Active	E 602-438-4110 REGULAR SALAR	$75,595.00	$57,566.41	$0.00	$18,028.59	76.15%
Active	E 602-438-4120 FICA	$5,785.00	$4,304.59	$0.00	$1,480.41	74.41%
Active	E 602-438-4130 RETIREMENT	$4,535.00	$3,486.52	$0.00	$1,048.48	76.88%
Active	E 602-438-4140 WORK COMP. INS	$2,500.00	$0.00	$0.00	$2,500.00	0.00%
Active	E 602-438-4150 GROUP HEALTH I	$5,940.00	$7,341.46	$0.00	-$1,401.46	123.59%
Active	E 602-438-4151 GROUP LIFE INS.	$100.00	$60.00	$0.00	$40.00	60.00%
Active	E 602-438-4160 OTHER INS.	$4,000.00	$4,020.84	$0.00	-$20.84	100.52%
Active	E 602-438-4220 ENGINEER FEES	$5,000.00	$1,250.00	$0.00	$3,750.00	25.00%
Active	E 602-438-4251 CONTRACT REPA	$17,000.00	$31,967.27	$0.00	-$14,967.27	188.04%
Active	E 602-438-4261 OPERATE SUPPL	$15,000.00	$9,022.47	$0.00	$5,977.53	60.15%
Active	E 602-438-4262 FUEL	$5,250.00	$3,900.40	$0.00	$1,349.60	74.29%
Active	E 602-438-4270 CONFERENCE F	$500.00	$253.75	$0.00	$246.25	50.75%
Active	E 602-438-4271 LODGING EXPEN	$500.00	$188.99	$0.00	$311.01	37.80%
Active	E 602-438-4272 MEAL EXPENSE	$200.00	$46.25	$0.00	$153.75	23.13%
Active	E 602-438-4273 MILEAGE EXPENS	$200.00	$110.44	$0.00	$89.56	55.22%
Active	E 602-438-4281 ELECTRIC/HEAT	$4,000.00	$7,670.60	$0.00	-$3,670.60	191.77%
Active	E 602-438-4282 TELEPHONE	$1,500.00	$934.07	$0.00	$565.93	62.27%
Active	E 602-438-4290 OTHER EXPENSE	$4,000.00	$2,181.38	$0.00	$1,818.62	54.53%
Active	E 602-438-4292 MEMBERSHIPS &	$0.00	$0.00	$0.00	$0.00	0.00%
Active	E 602-438-4300 CAPITAL IMPROV	$30,000.00	$0.00	$0.00	$30,000.00	0.00%
Active	E 602-438-4360 VEHICLE & MACHI	$4,000.00	$0.00	$0.00	$4,000.00	0.00%
Active	E 602-438-4381 RIP RAP PROJEC	$0.00	$0.00	$0.00	$0.00	0.00%
Active	E 602-438-4382 RESERVE-EQUIP	$10,000.00	$0.00	$0.00	$10,000.00	0.00%
Active	E 602-438-5110 TRANSFERS OUT	$0.00	$0.00	$0.00	$0.00	0.00%
	Total Expenditure	-$195,605.00	-$134,305.44	$0.00	-$61,299.56	68.66%
	Total SEWER FUND	$4,830.00	$51,941.29	$0.00	-$47,111.29	1075.39%
ELECTRIC FUND						
	Revenues	$2,219,715.00	$1,784,302.68	$0.00	$435,412.32	80.38%
	Expenditures	$2,191,170.00	$1,700,272.55	$0.00	$490,897.45	77.60%
	Profit(Loss)	$28,545.00	$84,030.13	$0.00	($55,485.13)	294.36%
Revenue						
Active	R 603-382-3131 SALES TAX DUE	$0.00	$0.00	$0.00	$0.00	0.00%

Outfall 001 - A, Monitoring Location: 1 Effluent Gross

		BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	Duration of discharge	Flow rate	Flow rate	Flow, total	pH	pH	Solids, total suspended	Solids, total suspended	Temperature, water deg. centigrade	Temperature, water deg. centigrade
		30DA AVG	MX 7D AV	MO TOTAL	30DA AVG	DAILY MX	MO TOTAL	DAILY MN	DAILY MX	30DA AVG	MX 7D AV	30DA AVG	DAILY MX
DMR	Limit	30 mg/L	45 mg/L	N/A d	N/A MGD	N/A MGD	N/A Mgal	6 SU	9 SU	110 mg/L	165 mg/L	N/A deg C	N/A deg C
End Date	Recv'd Date												
05/31/2012	6/7/2012	50.8	62	17	1.2	5.48	20.4	8.66	9.36	132.6	160	19	21.2
05/31/2013	7/31/2013	18.67	18.67	11	0.59	0.71	6.49	9.25	9.43	67.33	67.33	20.83	21.7
06/30/2013	8/1/2013	43	53	28	17.08	2.85	17.08	7.24	9.34	98.25	123	23.53	27.7
12/31/2013	2/18/2014	22	24	10	1.43	4.28	14.3	7.83	8.9	35	40	8.9	14
05/31/2014	7/24/2014	43.5	85	26	21.32	1.9	21.32	7.5	9.93	97	140	18.47	29.4

* 4 of 6 pH sample were over the Daily MX Limit of 9.0 S.U.

DMR Copy of Record

Permit

Permit #:	SD0022659	**Permittee:**	Miller, City of	**Facility:**	MILLER, CITY OF
Major:	No	**Permittee Address:**	120 W 2nd street Miller, SD 57362	**Facility Location:**	120 W 2ND ST. PO BOX 69 MILLER, SD 57362
Permitted Feature:	001 External Outfall	**Discharge:**	**001-A** Discharge from Cell 3 to Ree Creek		

Report Dates & Status

Monitoring Period:	From 05/01/14 to 05/31/14	**DMR Due Date:**	07/28/14	**Status:**	**NetDMR Validated**

Considerations for Form Completion

DISCHARGE START DATE: .....START TIME: ..... END DATE: ..... END TIME: .....IF NO DISCHARGE OCCURS DURING THE MONITORING PERIOD, "NO DISCHARGE" SHALL BE REPORTED.

Principal Executive Officer

First Name:	James	**Title:**	Water Wastewater Supt.	**Telephone:**	605-853-2705
Last Name:	Bonebright				

No Data Indicator (NODI)

Form NODI: --

Parameter Code	Parameter Name	Monitoring Location	Season #	Param. NODI		Quantity or Loading Qualifier 1	Value 1	Qualifier 2	Value 2	Units	Quality or Concentration Qualifier 1	Value 1	Qualifier 2	Value 2	Qualifier 3	Value 3	Units	# of Ex.	Frequency of Analysis	Sample Type
					Sample								=	18.47	=	29.4	04 - deg C		03/DS - Three Per Discharge	IN - INSTAN
00010	Temperature, water deg. centigrade	1 - Effluent Gross	0	--	Permit Req.									Req Mon 30DA AVG		Req Mon DAILY MX	04 - deg C	0	03/DS - Three Per Discharge	IN - INSTAN
					Value NODI															
					Sample	=	21.32	=	1.9	03 - MGD									03/DS - Three Per Discharge	IN - INSTAN
00056	Flow rate	1 - Effluent Gross	0	--	Permit Req.		Req Mon 30DA AVG		Req Mon DAILY MX	03 - MGD								0	03/DS - Three Per Discharge	IN - INSTAN
					Value NODI															
					Sample								=	43.5 (1)	=	85 (2)	19 - mg/L	(2)	03/DS - Three Per Discharge	GR - GRAB
00310	BOD, 5-day, 20 deg. C	1 - Effluent Gross	0	--	Permit Req.								<=	30 30DA AVG	<=	45 MX 7D AV	19 - mg/L	1	03/DS - Three Per Discharge	GR - GRAB
					Value NODI															
					Sample						=	7.5			=	9.93	12 - SU	* (4)	03/DS - Three Per Discharge	IN - INSTAN
00400	pH	1 - Effluent Gross	0	--	Permit Req.						>=	6 DAILY MN			<=	9 DAILY MX	12 - SU	1	03/DS - Three Per Discharge	IN - INSTAN
					Value NODI															
					Sample								=	97	=	140	19 - mg/L		03/DS - Three Per Discharge	GR - GRAB
00530	Solids, total suspended	1 - Effluent Gross	0	--	Permit Req.								<=	110 30DA AVG	<=	165 MX 7D AV	19 - mg/L	0	03/DS - Three Per Discharge	GR - GRAB
					Value NODI															
					Sample			=	21.32	3R - Mgal									01/30 - Monthly	CA - CALCTD
51500	Flow, total	1 - Effluent Gross	0	--	Permit Req.				Req Mon MO TOTAL	3R - Mgal								0	01/30 - Monthly	CA - CALCTD
					Value NODI															
					Sample			=	26	5A - d									01/30 - Monthly	CA - CALCTD
81381	Duration of discharge	1 - Effluent Gross	0	--	Permit Req.				Req Mon MO TOTAL	5A - d								0	01/30 - Monthly	CA - CALCTD
					Value NODI															

Submission Note

If a parameter row does not contain any values for the Sample nor Effluent Trading, then none of the following fields will be submitted for that row: Units, Number of Excursions, Frequency of Analysis, and Sample Type.

Edit Check Errors

No errors.

Comments

See attached letter explaining ph violation

Attachments

Name	Type	Size
LagoonPHViolationLetter7222014.pdf	pdf	254970

Report Last Saved By

Miller, City of

User:	james.bonebright@cityofmiller.com	Date/Time:	2014-07-24 08:41 (Time Zone: -05:00)
Name:	James Bonebright		
E-Mail:	james.bonebright@cityofmiller.com		

Appendix E
Storm Water Drainage Calculations

Miller Storm Water Drainage
EXISTING SYSTEM
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 13600
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Southeast Storm Sewer Piping System																							0.0			
	1A	1B	70	750	SGF	1.0	2.0	6.3	3.1	13.20	0.60	24.6	24.6	12	47.49	0.50	3.2	2.5	720	3.7	10.0	3.10	13.2	0.60	24.6	
	1B	1E	72	800	SGF	1.0	2.0	6.7	3.1	8.06	0.60	15.0	39.5	12	123.19	0.50	3.2	2.5	670	3.5	13.5	3.10	21.3	0.60	39.5	
	1C	1E	73	600	SGF	1.0	2.0	5.0	3.1	3.31	0.60	6.2														
	1D	1E	97	450	SGF	1.0	2.0	3.8	3.1	2.89	0.60	5.4														
	1C, 1D	1E											11.5	12	10.48	0.50	3.2	2.5	200	1.0	6.1	3.10	6.2	0.60	11.5	
	1E	1F	96	425	SGF	1.0	2.0	3.6	3.1	3.72	0.60	6.9	58.0	18	30.48	0.50	4.2	7.4	250	1.0	14.5	3.10	31.2	0.60	58.0	
	1F	1G	95	325	SGF	1.0	2.0	2.7	3.1	0.83	0.60	1.5	59.5	18	32.13	0.50	4.2	7.4	400	1.6	16.1	3.10	32.0	0.60	59.5	
	1G	1H	93	350	SGF	1.0	2.0	2.9	3.1	1.24	0.60	2.3	61.8	24	7.47	0.50	5.1	16.0	50	0.2	16.2	3.10	33.3	0.60	61.8	
	1H	1Q, 1P	86	800	SGF	1.0	2.0	6.7	3.1	5.17	0.60	9.6	71.5	24	9.98	0.50	5.1	16.0	400	1.3	17.5	3.10	38.4	0.60	71.5	
	1P	1S, 1R	68	800	SGF	1.0	2.0	6.7	3.1	10.10	0.60	18.8														
	1Q	1S, 1R	67	800	SGF	1.0	2.0	6.7	3.1	9.09	0.60	16.9														
	1Q 1P	1S, 1R											107.2	27	11.97	0.50	5.5	21.9	450	1.4	18.9	3.10	57.6	0.60	107.2	
	1S	1T	78	300	SGF	1.0	2.0	2.5	3.1	1.45	0.60	2.7														
	1R	1T	85	500	SGF	1.0	2.0	4.2	3.1	2.48	0.60	4.6														
	1S 1R	1T											114.5	27	13.66	0.20	3.5	13.9	350	1.7	20.6	3.10	61.5	0.60	114.5	
	1T	1U 1V 1W 1X	84	675	SGF	1.0	2.0	5.6	3.1	5.58	0.60	10.4	124.8	30	9.26	0.10	2.6	13.0	460	2.9	23.5	3.10	67.1	0.60	124.8	
	1U	1Y	76	500	SGF	1.0	2.0	4.2	3.1	3.72	0.60	6.9														
	1V	1Y	77	350	SGF	1.0	2.0	2.9	3.1	1.86	0.60	3.5														
	1W	1Y	65	850	SGF	1.0	2.0	7.1	3.1	4.55	0.60	8.5														
	1X	1Y	64	450	SGF	1.0	2.0	3.8	3.1	2.89	0.60	5.4														
	1U 1V 1W 1X	1Y											149.1	30	13.21	0.12	2.9	14.2	430	2.5	26.0	2.80	80.1	0.60	134.6	
	1Y	1Z	46	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6	153.7	30	14.04	0.10	2.6	13.0	200	1.3	27.2	2.80	82.6	0.60	138.8	
	1Z	1AA	47	200	SGF	1.0	2.0	1.7	3.1	1.24	0.60	2.3	156.0	30	14.46	0.10	2.6	13.0	50	0.3	27.5	2.80	83.9	0.60	140.9	
	1AA	1BB 1CC 1DD	45	200	SGF	1.0	2.0	1.7	3.1	0.83	0.60	1.5	157.5	30	14.75	0.17	3.4	16.9	575	2.8	30.3	2.60	84.7	0.60	132.1	
	1BB	Out	44	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2														
	1CC	Out	43	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														6505
	1DD	Out	25	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7														
													167.9	30	16.76	0.49	5.8	28.7	425	1.2	31.5	2.50	90.3	0.60	135.4	
	1BB 1CC 1DD	Out											167.9	36	6.34	0.49	6.6	46.7	875	2.2	33.7	2.50	90.3	0.60	135.4	
South Main Storm Sewer to Northwest																										
	2A	2B 2C	38	950	SGF	1.0	2.0	7.9	3.1	10.30	0.60	19.2	19.2	8	252.45	0.50	3.5	1.2	75	0.4	8.3	3.10	10.3	0.60	19.2	
	2B	2D	36	800	SGF	1.0	2.0	6.7	3.1	2.07	0.60	3.9														
	2C	2D	18	800	SGF	1.0	2.0	6.7	3.1	3.51	0.60	6.5														
	2C 2B	2D											29.5	8	597.44	0.50	3.5	1.2	160	0.8	9.1	3.10	15.9	0.60	29.5	
	2D	2E	20	225	SGF	1.0	2.0	1.9	3.1	1.65	0.60	3.1	32.6	8	728.05	0.50	3.5	1.2	240	1.1	10.2	3.10	17.5	0.60	32.6	
	2E	2F 2G 2H 2I	34	175	SGF	1.0	2.0	1.5	3.1	0.62	0.60	1.2	33.8	8	780.46	0.50	3.5	1.2	430	2.0	12.2	3.10	18.2	0.60	33.8	
	2J	2L 2M	69	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	2K	2L 2M	56	200	SGF	1.0	2.0	1.7	3.1	1.24	0.60	2.3														
	2J 2K	2L 2M											5.8	18	0.30	0.50	4.2	7.4	230	0.9	4.3	3.10	3.1	0.60	5.8	
	2L	2N 2O	71	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2														
	2M	2N 2O	60	400	SGF	1.0	2.0	3.3	3.1	1.24	0.60	2.3														1565
	2L 2M	2N 2O											12.3	18	1.37	0.50	4.2	7.4	200	0.8	5.1	3.10	6.6	0.60	12.3	
	2N	2F 2G 2H 2I	58	150	SGF	1.0	2.0	1.3	3.1	0.62	0.60	1.2														
	2O	2F 2G 2H 2I	59	400	SGF	1.0	2.0	3.3	3.1	1.45	0.60	2.7														
	2N 2O	2F 2G 2H 2I											16.1	18	2.36	0.50	4.2	7.4	230	0.9	6.0	3.10	8.7	0.60	16.1	
	2F	2P 2Q 2R 2S	37	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9														
	2G	2P 2Q 2R 2S	35	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	2H	2P 2Q 2R 2S	57	250	SGF	1.0	2.0	2.1	3.1	1.24	0.60	2.3														

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
EXISTING SYSTEM
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by JDS
Date 12/7/2015
Checked by

X Preliminary
Final
Design

Drainage Area The City of Miller
Project No. 13600
Design Storm 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
	2I	2P 2Q 2R 2S	33	200	SGF	1.0	2.0	1.7	3.1	1.03	0.60	1.9														
	2F 2G 2H 2I	2P 2Q 2R 2S											61.4	24	7.38	0.50	5.1	16.0	428	1.4	13.6	3.10	33.0	0.60	61.4	
	2T	2P 2Q 2R 2S	53	250	SGF	1.0	2.0	2.1	3.1	1.03	0.60	1.9														
	2U	2P 2Q 2R 2S	55	200	SGF	1.0	2.0	1.7	3.1	1.03	0.60	1.9														
	2U 2T	2P 2Q 2R 2S											3.8	12	1.16	0.50	3.2	2.5	318	1.7	15.3	3.10	2.1	0.60	3.8	
	2P	2X	31	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	2Q	2X	54	250	SGF	1.0	2.0	2.1	3.1	1.03	0.60	1.9														
	2R	2X	52	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7														
	2S	2X	30	525	SGF	1.0	2.0	4.4	3.1	4.13	0.60	7.7														
	2P 2Q 2R 2S	2X											81.0	27	6.84	0.50	5.5	21.9	434	1.3	16.6	3.10	43.6	0.60	81.0	
	2V	2X	51	250	SGF	1.0	2.0	2.1	3.1	1.86	0.60	3.5														
	2W	2X	50	600	SGF	1.0	2.0	5.0	3.1	2.68	0.60	5.0														
	2V 2W	2X											8.4	12	5.62	0.50	3.2	2.5	243	1.3	6.3	3.10	4.5	0.60	8.4	
	2X	2Y 2Z 2AA 2BB											89.5	30	4.76	0.50	5.9	29.0	441	1.2	17.8	3.10	48.1	0.60	89.5	
	2Y	2CC	49	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6														
	2Z	2CC	48	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9														
	2AA	2CC	28	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9														
	2BB	2CC	29	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9														
													105.6	30	6.63	0.50	5.9	29.0	382	1.1	18.9	3.10	56.8	0.60	105.6	
	2Y 2Z 2AA 2BB	2CC											105.6	36	2.51	0.50	6.7	47.2	368	0.9	19.8	3.10	56.8	0.60	105.6	
	2CC	Out	26	525	SGF	1.0	2.0	4.4	3.1	4.13	0.60	7.7	113.3	36	2.89	0.50	6.7	47.2	1500	3.7	23.6	3.10	60.9	0.60	113.3	
Furthest Southeast Portion of Storm Sewer to the East																							0.0			
	3D	3A	103	525	SGF	1.0	2.0	4.4	3.1	3.51	0.60	6.5	6.5	18	0.39	0.19	2.6	4.5	54	0.4	4.7	3.10	3.5	0.60	6.5	
	3A	3B	104	800	SGF	1.0	2.0	6.7	3.1	11.98	0.60	22.3	28.8	18	7.52	0.20	2.7	4.7	50	0.3	7.0	3.10	15.5	0.60	28.8	
	3C	3B	110	375	SGF	1.0	2.0	3.1	3.1	2.07	0.60	3.9	3.9	18	0.13	0.26	3.0	5.4	38	0.2	7.2	3.10	2.1	0.60	3.9	
	3B	3F	105	675	SGF	1.0	2.0	5.6	3.1	4.96	0.60	9.2	41.9	24	3.43	0.18	3.0	9.5	354	2.0	9.2	3.10	22.5	0.60	41.9	
	3F	3G	111	550	SGF	1.0	2.0	4.6	3.1	3.31	0.60	6.2														
	3E	3G	106	200	SGF	1.0	2.0	1.7	3.1	1.45	0.60	2.7														
	3E 3F	3G											50.7	24	5.03	0.18	3.0	9.5	332	1.8	11.0	3.10	27.3	0.60	50.7	
	3G	3H	112	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2	55.0	24	5.90	0.18	3.0	9.5	70	0.4	11.4	3.10	29.6	0.60	55.0	
	3H	3I	115	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1	58.0	24	6.58	0.18	3.0	9.5	146	0.8	12.2	3.10	31.2	0.60	58.0	
	3I	3J	113	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5	61.5	24	7.39	0.18	3.0	9.5	262	1.4	13.6	3.10	33.1	0.60	61.5	
	3J	3M 3L	114	400	SGF	1.0	2.0	3.3	3.1	3.72	0.60	6.9														
	3K	3M 3L	116	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1														
	3J 3K	3M 3L											71.5	24	9.98	0.18	3.0	9.5	650	3.6	17.2	3.10	38.4	0.60	71.5	
	3M	3N	119	450	SGF	1.0	2.0	3.8	3.1	3.93	0.60	7.3														
	3L	3N	117	650	SGF	1.0	2.0	5.4	3.1	2.69	0.60	5.0														
	3M 3L	3Z											83.8	24	13.72	0.18	3.0	9.5	708	3.9	21.2	3.10	45.1	0.60	83.8	
	36" RCP Culvert	3Z											83.8													Two 48" Pipes
	3Z	3N											83.8	24	13.72	0.18	3.1	9.6	710	3.9	3.9	3.10	0.0	#####	#DIV/0!	
	3P	3O	109	1550	SGF	1.0	2.0	13.0	3.1	20.70	0.60	38.5	38.5	42	0.15	0.18	4.4	42.1	250	1.0	13.0	3.10	20.7	0.60	38.5	Highway Piping
	3O	3Z	118	400	SGF	1.0	2.0	3.3	3.1	4.13	0.60	7.7	46.2	42	0.21	0.18	4.4	42.1	750	2.9	15.8	3.10	24.8	0.60	46.2	Highway Piping
	3Z	Whatever											130.0	42	1.67		0.0	0.0					0.0			
Storm Sewer on Northeast Portion of Miller to Northwest																							0.0			
	4I	4L 4K	92	300	SGF	1.0	2.0	2.5	3.1	0.83	0.60	1.5														
	4J	4L 4K	90	700	SGF	1.0	2.0	5.9	3.1	3.93	0.60	7.3														
	4I 4J	4L 4K											8.9	18	0.71	0.20	2.7	4.7	324	2.0	7.9	3.10	4.8	0.60	8.9	
	4K 4H	4M 4N	108, 102	1000	SGF	1.0	2.0	8.4	3.1	11.16	0.60	20.8														
	4L	4M 4N	94	400	SGF	1.0	2.0	3.3	3.1	1.45	0.60	2.7														
	4K 4H 4L	4M 4N											32.3	30	0.62	0.13	3.0	14.8	157	0.9	9.2	3.10	17.4	0.60	32.3	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
EXISTING SYSTEM
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 13600
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
	4M	4C 4B	91	250	SGF	1.0	2.0	2.1	3.1	1.45	0.60	2.7														
	4N	4C 4B	101	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6														
	4M 4N	4C 4B											39.6	30	0.93	0.13	3.0	14.9	254	1.4	10.6	3.10	21.3	0.60	39.6	
	4A	4C 4B	107	875	SGF	1.0	2.0	7.3	3.1	10.10	0.60	18.8	18.8	18	3.20	3.00	10.3	18.2	800	1.3	8.6	3.10	10.1	0.60	18.8	
	4C	4D 4E	89	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7														
	4B	4D 4E	100	425	SGF	1.0	2.0	3.6	3.1	2.89	0.60	5.4														
	4C 4B	4D 4E											66.5	36	0.99	0.13	3.4	24.2	375	1.8	12.4	3.10	35.7	0.60	66.5	
	4D	4F 4G	88	350	SGF	1.0	2.0	2.9	3.1	1.65	0.60	3.1														
	4E	4F 4G	99	450	SGF	1.0	2.0	3.8	3.1	3.10	0.60	5.8														
	4E 4D	4F 4G											75.3	36	1.27	0.13	3.4	24.2	382	1.9	14.3	3.10	40.5	0.60	75.3	
	4F	4MH2	120	400	SGF	1.0	2.0	3.3	3.1	2.69	0.60	5.0														
	4G	4MH2	121	275	SGF	1.0	2.0	2.3	3.1	0.62	0.60	1.2														
	4G 4F	4MH2											81.5	36	1.49	0.13	3.4	24.2	200	1.0	15.3	3.10	43.8	0.60	81.5	
	4P	4MH1	98	550	SGF	1.0	2.0	4.6	3.1	3.10	0.60	5.8	5.8	18	0.30	0.25	3.0	5.3	188	1.1	5.7	3.10	3.1	0.60	5.8	
	4O	4MH1	122	450	SGF	1.0	2.0	3.8	3.1	2.07	0.60	3.9	3.9	15	0.36	0.25	2.6	3.2	102	0.6	3.8	3.10	2.1	0.60	3.9	1946
	4MH1	4MH2											9.6	21	0.37	0.25	3.3	7.9	372	1.9	7.5	3.10	5.2	0.60	9.6	
	4MH2	4MH5											91.1	36	1.86	0.13	3.4	24.2	390	1.9	17.2	3.10	49.0	0.60	91.1	
	4MH5	4Q											91.1	36	1.86	0.08	2.7	18.9	340	2.1	19.3	3.10	49.0	0.60	91.1	
	4Q	4MH3	79	475	SGF	1.0	2.0	4.0	3.1	4.34	0.60	8.1	99.2	36	2.21	0.13	3.4	24.2	286	1.4	20.7	3.10	53.3	0.60	99.2	
	4MH3	4MH4											99.2	36	2.21	0.23	4.5	32.0	930	3.4	24.1	2.60	53.3	0.60	83.2	
	4R	4MH6	83	500	SGF	1.0	2.0	4.2	3.1	2.89	0.60	5.4														
	4S	4MH6	75	400	SGF	1.0	2.0	3.3	3.1	1.24	0.60	2.3														
	4R 4S	4MH6											7.7	18	0.53	0.35	3.5	6.2	210	1.0	5.2	3.10	4.1	0.60	7.7	
	4T	4MH6	82	500	SGF	1.0	2.0	4.2	3.1	2.27	0.60	4.2		18					160							
	4V	4MH6	80, 81	450	SGF	1.0	2.0	3.8	3.1	2.06	0.60	3.8														
	4T 4V	4MH6											8.1	18	0.59	0.35	3.5	6.2	172	0.8	5.0	3.10	4.3	0.60	8.1	
	4MH6	4MH7											15.7	21	0.99	0.19	2.8	6.8	402	2.4	7.5	3.10	8.5	0.60	15.7	
	4X	4MH7	63	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9														
	4U	4MH7	74	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2														
	4X 4U	4MH7											8.1	24	0.13	0.26	3.6	11.4	170	0.8	4.1	3.10	4.3	0.60	8.1	835
	4MH7	4Z 4Y4AA											23.8	24	1.11	0.26	3.6	11.4	225	1.0	8.6	3.10	12.8	0.60	23.8	
	4Z	4MH8	61	450	SGF	1.0	2.0	3.8	3.1	1.86	0.60	3.5														
	4Y	4MH8	62	350	SGF	1.0	2.0	2.9	3.1	1.03	0.60	1.9														
	4AA	4MH8	123	300	SGF	1.0	2.0	2.5	3.1	0.83	0.60	1.5														
	4Z 4Y 4AA	4MH8											30.7	24	1.84	0.26	3.6	11.4	310	1.4	10.0	3.10	16.5	0.60	30.7	
	4MH8	4MH4											30.7	24	1.84	0.28	3.8	11.9	130	0.6	10.6	3.10	16.5	0.60	30.7	
	4MH4	4BB											129.9	42	1.67	0.18	4.4	42.7	1052	3.9	28.1	2.40	69.8	0.60	100.5	1564
	4BB	4CC	124	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9	133.7	42	1.77	0.18	4.4	42.7	194	0.7	28.8	2.35	71.9	0.60	101.4	
	4CC	Out											133.7	42	1.77	0.18	4.4	42.7	318	1.2	30.0	2.30	71.9	0.60	99.2	
Furthest Southwest Portion to Creek																										
	5A	5G 5H	32	375	SGF	1.0	2.0	3.1	3.1	1.45	0.60	2.7														
	5B	5G 5H	16	775	SGF	1.0	2.0	6.5	3.1	4.55	0.60	8.5														
	5C	5G 5H	19	275	SGF	1.0	2.0	2.3	3.1	0.83	0.60	1.5														
	5A 5B 5C	5G 5H											12.7	18	1.46	0.50	4.2	7.4	400	1.6	8.1	3.10	6.8	0.60	12.7	
	5D	5F		400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1														
	5E	5F	7	300	SGF	1.0	2.0	2.5	3.1	2.07	0.60	3.9														
	5D 5E	5F											6.9	10	9.97	0.50	2.8	1.5	200	1.2	4.5	3.10	3.7	0.60	6.9	
	5F	5G 5H	17	250	SGF	1.0	2.0	2.1	3.1	1.45	0.60	2.7	9.6	10	19.26	0.50	2.8	1.5	200	1.2	9.2	3.10	5.2	0.60	9.6	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
EXISTING SYSTEM
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by JDS
Date 12/7/2015
Checked by

X Preliminary
Final
Design

Drainage Area The City of Miller
Project No. 13600
Design Storm 5 year storm
n = 0.013

Location	Conveyance		Direct Runoff										Sys.	Travel Time (System Design)							Total Runoff					Remarks
	From	To	W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Q c.f.s.	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
	5G	5I	8	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1														
	5H	5I	10	450	SGF	1.0	2.0	3.8	3.1	3.72	0.60	6.9														
	5G 5H	5I											32.3	18	9.46	0.50	4.2	7.4	475	1.9	11.1	3.10	17.4	0.60	32.3	
	5J	5I	11	200	SGF	1.0	2.0	1.7	3.1	0.41	0.60	0.8														
	5K	5I	6	250	SGF	1.0	2.0	2.1	3.1	1.86	0.60	3.5														
	5J 5K	5I											4.2	10	3.71	0.50	2.8	1.5	200	1.2	3.3	3.10	2.3	0.60	4.2	
	5L	5M	125	300	SGF	1.0	2.0	2.5	3.1	2.48	0.60	4.6	4.6	8	6.98	0.50	3.5	1.2	400	1.9	4.4	3.10	2.5	0.60	4.6	
	5I	5M											36.5	18	12.09	0.50	4.2	7.4	400	1.6	4.1	3.10	19.6	0.60	36.5	
													41.1	15	116.18	0.50	3.7	4.6	77	0.3	11.5	3.10	19.6	0.60	36.5	
	5M	Out											41.1	12	63.92	0.50	4.6	3.6	380	1.4	12.8	3.10	22.1	0.60	41.1	
Furthest West Central Portion to Creek																										
	6A	6MH1	14	650	SGF	1.0	2.0	5.4	3.1	4.96	0.60	9.2														
	6B	6MH1	1	750	SGF	1.0	2.0	6.3	3.1	8.26	0.60	15.4														
	6A 6B	6MH1											24.6	18	5.48	0.50	4.2	7.4	400	1.6	7.9	3.10	13.2	0.60	24.6	
	6C	6MH1	3	600	SGF	1.0	2.0	5.0	3.1	2.07	0.60	3.9														
	6D	6MH1	2	275	SGF	1.0	2.0	2.3	3.1	1.24	0.60	2.3														
	6E	6MH1	5	550	SGF	1.0	2.0	4.6	3.1	1.65	0.60	3.1														
	6F	6MH1	4	600	SGF	1.0	2.0	5.0	3.1	3.51	0.60	6.5														
	6C 6D 6E 6F	6MH1											15.8	18	2.25	0.50	4.2	7.4	200	0.8	5.8	3.10	8.5	0.60	15.8	
	6MH1	Out											40.3	18	14.75	0.50	4.2	7.4	400	1.6	9.4	3.10	21.7	0.60	40.3	
Northwest 12" Line																										
	7A	7E 7F 7G	42	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	7B	7E 7F 7G	24	500	SGF	1.0	2.0	4.2	3.1	3.31	0.60	6.2														
	7C	7E 7F 7G	41	450	SGF	1.0	2.0	3.8	3.1	2.48	0.60	4.6														
	7D	7E 7F 7G	23	450	SGF	1.0	2.0	3.8	3.1	3.93	0.60	7.3														
	7A 7B 7C 7D	7E 7F 7G											21.5	12	36.55	0.50	3.2	2.5	350	1.8	6.0	3.10	11.6	0.60	21.5	
	7E	Out	40	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7														
	7F	Out	39	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1														
	7G	Out	22	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7														
	7E 7F 7G	Out											30.0	12	70.91	0.50	3.2	2.5	650	3.4	9.4	3.10	16.1	0.60	30.0	
West Second Avenue																										
	8A	8D	15	450	SGF	1.0	2.0	3.8	3.1	4.55	0.60	8.5														
	8B	8D	27	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	8C	8D	13	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5														
	8A 8B 8C	8D											15.4	8	77.66	0.50	3.5	1.2	375	1.8	5.5	3.10	8.3	0.60	15.4	
	8D	Crystal Lake	12	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5	18.8	8	116.52	0.50	3.5	1.2	600	2.8	8.4	3.10	10.1	0.60	18.8	
Second Street South West																										
	9A	Out	126	650	SGF	1.0	2.0	5.4	3.1	15.90	0.60	29.6	29.6	18	3.80	0.50	6.1	10.7	1400	3.8	9.3	3.10	15.9	0.60	29.6	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
STORM SEWER DESIGN
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 14141
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Existing Sys Size Descr. (in)	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Southeast Storm Sewer Piping System																								0.0			
	1A	1B	70	750	SGF	1.0	2.0	6.3	3.1	13.20	0.60	24.6	24.6	12	30	0.36	0.25	4.2	20.5	720	2.9	9.1	3.10	13.2	0.60	24.6	
	1C	1E	73	600	SGF	1.0	2.0	5.0	3.1	3.31	0.60	6.2															
	1D	1E	97	450	SGF	1.0	2.0	3.8	3.1	2.89	0.60	5.4															
	1C, 1D	1E											11.5	12	24	0.26	0.25	3.6	11.3	200	0.9	5.9	3.10	6.2	0.60	11.5	
	1E	1B	96	425	SGF	1.0	2.0	3.6	3.1	3.72	0.60	6.9	18.5	12	30	0.20	0.25	4.2	20.5	700	2.8	8.7	3.10	9.9	0.60	18.5	
	1F	1G	95	325	SGF	1.0	2.0	2.7	3.1	0.83	0.60	1.5	20.0	24	42	0.04	0.25	5.2	50.3	400	1.3	10.0	3.10	10.8	1.34	44.5	eliminated
	1B	1Q, 1P	72	800	SGF	1.0	2.0	6.7	3.1	8.06	0.60	15.0	59.5		42	0.35	0.25	5.2	50.3	400	1.3	10.4	3.10	32.0	0.60	59.5	
	1G	1H	93	350	SGF	1.0	2.0	2.9	3.1	1.24	0.60	2.3															
	1H	1Q, 1P	86	800	SGF	1.0	2.0	6.7	3.1	5.17	0.60	9.6	11.9	27	24	0.28	0.25	3.6	11.3	400	1.9	8.5	3.10	6.4	0.60	11.9	
	1P	1S, 1R	68	800	SGF	1.0	2.0	6.7	3.1	10.10	0.60	18.8															
	1Q	1S, 1R	67	800	SGF	1.0	2.0	6.7	3.1	9.09	0.60	16.9															
	1Q 1P	1S, 1R											107.2	27	54	0.30	0.25	6.2	98.3	450	1.2	11.6	3.10	57.6	0.60	107.2	1260
	1S	1T	78	300	SGF	1.0	2.0	2.5	3.1	1.45	0.60	2.7															
	1R	1T	85	500	SGF	1.0	2.0	4.2	3.1	2.48	0.60	4.6															
	1S 1R	1T											114.5	27	54	0.34	0.25	6.2	98.3	350	0.9	12.6	3.10	61.5	0.60	114.5	
	1T	1U 1V 1W 1X	84	675	SGF	1.0	2.0	5.6	3.1	5.58	0.60	10.4	124.8	30	54	0.40	0.25	6.2	98.3	460	1.2	13.8	3.10	67.1	0.60	124.8	
	1U	1Y	76	500	SGF	1.0	2.0	4.2	3.1	3.72	0.60	6.9															
	1V	1Y	77	350	SGF	1.0	2.0	2.9	3.1	1.86	0.60	3.5															
	1W	1Y	65	850	SGF	1.0	2.0	7.1	3.1	4.55	0.60	8.5															6635
	1X	1Y	64	450	SGF	1.0	2.0	3.8	3.1	2.89	0.60	5.4															
	1U 1V 1W 1X	1Y											149.1	30	60	0.33	0.25	6.6	130.2	430	1.1	14.9	3.10	80.1	0.60	149.1	1715
	1Y	1Z	46	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6	153.7	30	60	0.35	0.25	6.6	130.2	200	0.5	15.4	3.10	82.6	0.60	153.7	
	1Z	1AA	47	200	SGF	1.0	2.0	1.7	3.1	1.24	0.60	2.3	156.0	30	60	0.36	0.25	6.6	130.2	50	0.1	15.5	3.10	83.9	0.60	156.0	1255
	1AA	1BB 1CC 1DD	45	200	SGF	1.0	2.0	1.7	3.1	0.83	0.60	1.5	157.5	30	60	0.37	0.25	6.6	130.2	575	1.4	17.0	3.10	84.7	0.60	157.5	
	1BB	Out	44	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2															
	1CC	Out	43	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	1DD	Out	25	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7															
	2CC	Out	26	525	SGF	1.0	2.0	4.4	3.1	4.13	0.60	7.7	7.7														
	1BB 1CC 1DD 2CC	Out											175.6	36	60	0.45	0.25	6.6	130.2	1300	3.3	20.2	3.10	94.4	0.60	175.6	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
STORM SEWER DESIGN
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 14141
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Existing Sys Size Descr. (in)	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
South Main Storm Sewer to Northwest																											
	2J	2L 2M	69	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	2K	2L 2M	56	200	SGF	1.0	2.0	1.7	3.1	1.24	0.60	2.3															
	2J 2K	2L 2M											10.1	18	24	0.20	0.50	5.1	16.0	230	0.8	4.1	3.10	3.1	0.60	5.8	
	2L	2N 2O	71	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2															
	2M	2N 2O	60	400	SGF	1.0	2.0	3.3	3.1	1.24	0.60	2.3															
	2L 2M	2N 2O											16.6	18	24	0.54	0.50	5.1	16.0	200	0.7	4.8	3.10	6.6	0.60	12.3	
	2N	2F 2G 2H 2I	58	150	SGF	1.0	2.0	1.3	3.1	0.62	0.60	1.2															
	2O	2F 2G 2H 2I	59	400	SGF	1.0	2.0	3.3	3.1	1.45	0.60	2.7															
	2N 2O	2F 2G 2H 2I											20.4	18	30	0.25	0.50	5.9	29.0	230	0.6	5.4	3.10	8.7	0.60	16.1	
	2D 2E 5A 5B 5C	2F 2G 2H 2I										16.9	16.9	18	24	0.56	0.50	5.1	16.0	430	1.4	1.4	3.10	1.5	3.59	16.1	
	2F	2P 2Q 2R 2S	37	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9															
	2G	2P 2Q 2R 2S	35	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	2H	2P 2Q 2R 2S	57	250	SGF	1.0	2.0	2.1	3.1	1.24	0.60	2.3															
	2I	2P 2Q 2R 2S	33	200	SGF	1.0	2.0	1.7	3.1	1.03	0.60	1.9															
	2F 2G 2H 2I	2P 2Q 2R 2S											48.9	24	36	0.54	0.50	6.7	47.2	420	1.0	1.0	3.10	14.9	0.60	27.7	
	2T	2P 2Q 2R 2S	53	250	SGF	1.0	2.0	2.1	3.1	1.03	0.60	1.9															
	2U	2P 2Q 2R 2S	55	200	SGF	1.0	2.0	1.7	3.1	1.03	0.60	1.9															
	2U 2T	2P 2Q 2R 2S											3.8	12	15	0.35	0.50	3.7	4.6	230	1.0	2.1	3.10	2.1	0.60	3.8	
	2P	2X	31	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	2Q	2X	54	250	SGF	1.0	2.0	2.1	3.1	1.03	0.60	1.9															
	2R	2X	52	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7															
	2S	2X	30	525	SGF	1.0	2.0	4.4	3.1	4.13	0.60	7.7															
	2P 2Q 2R 2S	2X											68.5	27	42	0.46	0.50	7.4	71.1	430	1.0	3.0	3.10	25.4	0.60	47.3	
	2V	2X	51	250	SGF	1.0	2.0	2.1	3.1	1.86	0.60	3.5															
	2W	2X	50	600	SGF	1.0	2.0	5.0	3.1	2.68	0.60	5.0															
	2V 2W	2X											8.4	12	24	0.14	0.50	5.1	16.0	220	0.7	5.7	3.10	4.5	0.60	8.4	
	2X	2Y 2Z 2AA 2BB											76.9	30	42	0.58	0.50	7.4	71.1	430	1.0	4.0	3.10	30.0	0.60	55.7	
	2Y	2CC	49	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6															
	2Z	2CC	48	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9															
	2AA	2CC	28	350	SGF	1.0	2.0	2.9	3.1	2.07	0.60	3.9															
	2BB	2CC	29	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9															
	2Y 2Z 2AA 2BB	8A 8B 8C											93.1	30	48	0.42	0.50	8.1	101.6	450	0.9	6.7	3.10	38.6	0.60	71.9	
	8A	8D	15	450	SGF	1.0	2.0	3.8	3.1	4.55	0.60	8.5															
	8B	8D	27	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	8C	8D	13	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	8A 8B 8C	8D											108.5	8 PVC	54	0.30	0.50	8.7	139.1	375	0.7	7.4	3.10	46.9	0.60	87.3	
	8D	Crystal Lake	12	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5	111.9	36	54	0.32	0.25	6.2	98.3	1400	3.8	11.2	3.10	48.8	0.60	90.7	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
STORM SEWER DESIGN
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 14141
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Existing Sys Size Descr. (in)	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Furthest Southeast Portion of Storm Sewer to the East - 3.1																								0.0			
	3D	3A	103	525	SGF	1.0	2.0	4.4	3.1	3.51	0.60	6.5	6.5	24	30	0.03	0.19	3.6	17.6	54	0.3	4.6	3.10	3.5	0.60	6.5	
	3A	3B	104	800	SGF	1.0	2.0	6.7	3.1	11.98	0.60	22.3	28.8	24	36	0.19	0.20	4.2	29.8	50	0.2	6.9	3.10	15.5	0.60	28.8	
	3C	3B	110	375	SGF	1.0	2.0	3.1	3.1	2.07	0.60	3.9	3.9	24	18	0.13	0.26	3.0	5.4	38	0.2	7.1	3.10	2.1	0.60	3.9	
	3B	3F	105	675	SGF	1.0	2.0	5.6	3.1	4.96	0.60	9.2	41.9	24	42	0.17	0.18	4.4	42.1	354	1.3	8.4	3.10	22.5	0.60	41.9	
	3F	3G	111	550	SGF	1.0	2.0	4.6	3.1	3.31	0.60	6.2															
	3E	3G	106	200	SGF	1.0	2.0	1.7	3.1	1.45	0.60	2.7															
	3E 3F	3G											50.7	24	48	0.12	0.18	4.8	60.1	332	1.2	9.6	3.10	27.3	0.60	50.7	
	3G	3H	112	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2	55.0	24	48	0.15	0.18	4.8	60.1	70	0.2	9.8	3.10	29.6	0.60	55.0	4406
	3H	3I	115	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1	58.0	24	48	0.16	0.18	4.8	60.1	146	0.5	10.4	3.10	31.2	0.60	58.0	
	3I	3J	113	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5	61.5	24	48	0.18	0.18	4.8	60.1	262	0.9	11.3	3.10	33.1	0.60	61.5	
	3J	3M 3L	114	400	SGF	1.0	2.0	3.3	3.1	3.72	0.60	6.9															
	3K	3M 3L	116	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1															
	3J 3K	3M 3L											71.5	24	54	0.13	0.18	5.2	82.3	1000	3.2	14.5	3.10	38.4	0.60	71.5	Dual 48-inch Pipe
	3M	3N	119	450	SGF	1.0	2.0	3.8	3.1	3.93	0.60	7.3															
	3L	3N	117	650	SGF	1.0	2.0	5.4	3.1	2.69	0.60	5.0															
	3M 3L	3N											83.8	24	63	0.08	0.18	5.7	124.2	400	1.2	15.6	3.10	45.1	0.60	83.8	Dual 48-inch Pipe
	3P	3O	109	1550	SGF	1.0	2.0	13.0	3.1	20.70	0.60	38.5	38.5	42	42	0.15	0.18	4.4	42.1	250	1.0	13.0	3.10	20.7	0.60	38.5	Highway Piping
	3O	3N	118	400	SGF	1.0	2.0	3.3	3.1	4.13	0.60	7.7	46.2	42	42	0.21	0.18	4.4	42.1	750	2.9	15.8	3.10	24.8	0.60	46.2	Highway Piping
	3N	Whatever											130.0	48	63	0.19	0.18	5.8	125.8	1700	4.9	20.5	1.70	69.9	0.60	71.3	Dual 48-inch Pipe
Furthest Southeast Portion of Storm Sewer to the East																								0.0			
	3D	3A	103	525	SGF	1.0	2.0	4.4	1.7	3.51	0.60	3.6	3.6	24	18	0.12	0.19	2.6	4.5	54	0.4	4.7	1.70	3.5	0.60	3.6	
	3A	3B	104	800	SGF	1.0	2.0	6.7	1.7	11.98	0.60	12.2	15.8	24	30	0.15	0.20	3.7	18.3	50	0.2	6.9	1.70	15.5	0.60	15.8	
	3C	3B	110	375	SGF	1.0	2.0	3.1	1.7	2.07	0.60	2.1	2.1	24	15	0.11	0.26	2.7	3.3	38	0.2	7.1	1.70	2.1	0.60	2.1	
	3B	3F	105	675	SGF	1.0	2.0	5.6	1.7	4.96	0.60	5.1	23.0	24	36	0.12	0.18	3.9	27.9	354	1.5	8.6	1.70	22.5	0.60	23.0	
	3F	3G	111	550	SGF	1.0	2.0	4.6	1.7	3.31	0.60	3.4															
	3E	3G	106	200	SGF	1.0	2.0	1.7	1.7	1.45	0.60	1.5															
	3E 3F	3G											27.8	24	36	0.17	0.18	3.9	27.9	332	1.4	10.0	1.70	27.3	0.60	27.8	
	3G	3H	112	400	SGF	1.0	2.0	3.3	1.7	2.27	0.60	2.3	30.1	24	42	0.09	0.18	4.4	42.1	70	0.3	10.3	1.70	29.6	0.60	30.1	
	3H	3I	115	400	SGF	1.0	2.0	3.3	1.7	1.65	0.60	1.7	31.8	24	42	0.10	0.18	4.4	42.1	146	0.6	10.9	1.70	31.2	0.60	31.8	
	3I	3J	113	400	SGF	1.0	2.0	3.3	1.7	1.86	0.60	1.9	33.7	24	42	0.11	0.18	4.4	42.1	262	1.0	11.9	1.70	33.1	0.60	33.7	
	3J	3M 3L	114	400	SGF	1.0	2.0	3.3	1.7	3.72	0.60	3.8															
	3K	3M 3L	116	400	SGF	1.0	2.0	3.3	1.7	1.65	0.60	1.7															
	3J 3K	3M 3L											39.2	24	42	0.15	0.18	4.4	42.1	650	2.5	14.3	1.70	38.4	0.60	39.2	
	3M	3N	119	450	SGF	1.0	2.0	3.8	1.7	3.93	0.60	4.0															
	3L	3N	117	650	SGF	1.0	2.0	5.4	1.7	2.69	0.60	2.7															
	3M 3L	3N											46.0	24	48	0.10	0.18	4.8	60.1	708	2.5	16.8	1.70	45.1	0.60	46.0	
	3P	3O	109	1550	SGF	1.0	2.0	13.0	1.7	20.70	0.60	21.1	21.1	42	36	0.10	0.18	3.9	27.9	250	1.1	13.0	1.70	20.7	0.60	21.1	Highway Piping
	3O	3N	118	400	SGF	1.0	2.0	3.3	1.7	4.13	0.60	4.2	25.3	42	36	0.14	0.18	3.9	27.9	750	3.2	16.1	1.70	24.8	0.60	25.3	Highway Piping
	3N	Whatever											71.3	48	48	0.25	0.18	4.8	60.9	751	2.6	19.4	1.70	69.9	0.60	71.3	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
STORM SEWER DESIGN
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 14141
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Existing Sys Size Descr. (in)	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Storm Sewer on Northeast Portion of Miller to Northwest																											
	4I	4L 4K	92	300	SGF	1.0	2.0	2.5	3.1	0.83	0.60	1.5															
	4J	4L 4K	90	700	SGF	1.0	2.0	5.9	3.1	3.93	0.60	7.3															
	4I 4J	4L 4K											8.9	18	24	0.15	0.20	3.2	10.1	324	1.7	7.5	3.10	4.8	0.60	8.9	
	4K 4H	4M 4N	108, 102	1000	SGF	1.0	2.0	8.4	3.1	11.16	0.60	20.8															
	4L	4M 4N	94	400	SGF	1.0	2.0	3.3	3.1	1.45	0.60	2.7															
	4K 4H 4L	4M 4N											32.3	30	42	0.10	0.13	3.8	36.4	157	0.7	9.1	3.10	17.4	0.60	32.3	
	4M	4C 4B	91	250	SGF	1.0	2.0	2.1	3.1	1.45	0.60	2.7															
	4N	4C 4B	101	350	SGF	1.0	2.0	2.9	3.1	2.48	0.60	4.6															411
	4M 4N	4C 4B											39.6	30	42	0.16	0.13	3.8	36.5	254	1.1	10.2	3.10	21.3	0.60	39.6	
	4A	4C 4B	107	875	SGF	1.0	2.0	7.3	3.1	10.10	0.60	18.8	18.8	18	24	0.69	3.00	12.5	39.2	800	1.1	8.4	3.10	10.1	0.60	18.8	
	4C	4D 4E	89	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7															
	4B	4D 4E	100	425	SGF	1.0	2.0	3.6	3.1	2.89	0.60	5.4															
	4C 4B	4D 4E											66.5	30	54	0.11	0.13	4.5	71.4	375	1.4	11.6	3.10	35.7	0.60	66.5	
	4D	4F 4G	88	350	SGF	1.0	2.0	2.9	3.1	1.65	0.60	3.1															
	4E	4F 4G	99	450	SGF	1.0	2.0	3.8	3.1	3.10	0.60	5.8															
	4E 4D	4F 4G											75.3	36	54	0.15	0.13	4.5	71.4	382	1.4	13.0	3.10	40.5	0.60	75.3	957
	4F	4MH2	120	400	SGF	1.0	2.0	3.3	3.1	2.69	0.60	5.0															
	4G	4MH2	121	275	SGF	1.0	2.0	2.3	3.1	0.62	0.60	1.2															
	4G 4F	4MH2											81.5	36	54	0.17	0.13	4.5	71.4	200	0.7	13.7	3.10	43.8	0.60	81.5	
	4P	4MH1	98	550	SGF	1.0	2.0	4.6	3.1	3.10	0.60	5.8	5.8	18	24	0.06	0.25	3.6	11.3	188	0.9	5.5	3.10	3.1	0.60	5.8	
	4O	4MH1	122	450	SGF	1.0	2.0	3.8	3.1	2.07	0.60	3.9	3.9	15	18	0.13	0.25	3.0	5.3	102	0.6	3.8	3.10	2.1	0.60	3.9	
	4MH1	4MH2											9.6	21	24	0.18	0.25	3.6	11.3	372	1.7	7.2	3.10	5.2	0.60	9.6	
	4MH2	4MH5											91.1	36	60	0.12	0.13	4.8	94.5	390	1.4	15.1	3.10	49.0	0.60	91.1	
	4MH5	4O											91.1	36	60	0.12	0.08	3.8	73.7	340	1.5	16.6	3.10	49.0	0.60	91.1	
	4O	4MH3	79	475	SGF	1.0	2.0	4.0	3.1	4.34	0.60	8.1	99.2	36	60	0.14	0.13	4.8	94.5	286	1.0	17.6	3.10	53.3	0.60	99.2	
	4MH3	4MH4											83.2	36	60	0.10	0.23	6.4	124.9	930	2.4	20.0	2.60	53.3	0.60	83.2	1946
	4R	4MH6	83	500	SGF	1.0	2.0	4.2	3.1	2.89	0.60	5.4															
	4S	4MH6	75	400	SGF	1.0	2.0	3.3	3.1	1.24	0.60	2.3															
	4R 4S	4MH6											7.7	18	24	0.12	0.35	4.3	13.5	210	0.8	5.0	3.10	4.1	0.60	7.7	
	4T	4MH6	82	500	SGF	1.0	2.0	4.2	3.1	2.27	0.60	4.2			18					160							
	4V	4MH6	80, 81	450	SGF	1.0	2.0	3.8	3.1	2.06	0.60	3.8															
	4T 4V	4MH6											8.1	18	24	0.13	0.35	4.3	13.5	172	0.7	4.9	3.10	4.3	0.60	8.1	
	4MH6	4MH7											15.7	21	30	0.15	0.19	3.6	17.7	402	1.9	6.9	3.10	8.5	0.60	15.7	
	4X	4MH7	63	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9															
	4U	4MH7	74	400	SGF	1.0	2.0	3.3	3.1	2.27	0.60	4.2															
	4X 4U	4MH7											8.1	24	24	0.13	0.26	3.6	11.4	170	0.8	4.1	3.10	4.3	0.60	8.1	
	4MH7	4Z 4Y4AA											23.8	24	36	0.13	0.26	4.8	33.7	225	0.8	7.6	3.10	12.8	0.60	23.8	
	4Z	4MH8	61	450	SGF	1.0	2.0	3.8	3.1	1.86	0.60	3.5															
	4Y	4MH8	62	350	SGF	1.0	2.0	2.9	3.1	1.03	0.60	1.9															
	4AA	4MH8	123	300	SGF	1.0	2.0	2.5	3.1	0.83	0.60	1.5															
	4Z 4Y 4AA	4MH8											30.7	24	36	0.21	0.26	4.8	33.7	310	1.1	8.7	3.10	16.5	0.60	30.7	665
	4MH8	4MH4											30.7	24	36	0.21	0.28	4.9	35.0	130	0.4	9.2	3.10	16.5	0.60	30.7	
																											1564
	4MH4	4BB											100.5	42	60	0.15	0.18	5.6	110.6	1052	3.1	23.1	2.40	69.8	0.60	100.5	
	4BB	4CC	124	400	SGF	1.0	2.0	3.3	3.1	2.07	0.60	3.9	101.4	42	60	0.15	0.18	5.6	110.6	194	0.6	23.7	2.35	71.9	0.60	101.4	
	4CC	Out											99.2	42	60	0.15	0.18	5.6	110.6	318	0.9	24.6	2.30	71.9	0.60	99.2	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

Miller Storm Water Drainage
STORM SEWER DESIGN
5 YEAR STORM

STORM DRAINAGE SYSTEM DESIGN
BY THE RATIONAL METHOD

Calculated by: JDS
Date: 12/7/2015
Checked by:

X Preliminary
Final
Design

Drainage Area: The City of Miller
Project No.: 14141
Design Storm: 5 year storm
n = 0.013

Location	Conveyance From	Conveyance To	Direct Runoff W.S. or S.B. No.	O.F.L. ft.	W.C. Type *	S %	V f.p.s.	Ti min.	i in./hr.	A Ac.	C	q c.f.s.	Sys. Q c.f.s.	Travel Time (System Design) Existing Sys Size Descr. (in)	Convey Sys./ Size Descr. (in)	Slope min. %	Slope des. %	V des. f.p.s.	Cap. (all.) c.f.s.	Leng.	t min.	Total Runoff T.O.C. min.	i in/hr.	Total A Ac.	Comp C	Des. Q c.f.s.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Furthest Southwest Portion to Creek																						0.0					
	2A	2B 2C	38	950	SGF	1.0	2.0	7.9	3.1	10.30	0.60	19.2															
	2B	2D	36	800	SGF	1.0	2.0	6.7	3.1	2.07	0.60	3.9															
	2C	2D	18	800	SGF	1.0	2.0	6.7	3.1	3.51	0.60	6.5															
	2C 2B	2D											29.5	18	30	0.52	0.50	5.9	29.0	160	0.5	0.5	3.10	15.9	0.60	29.5	
	2D	2E 5A 5B 5C	20	225	SGF	1.0	2.0	1.9	3.1	1.65	0.60	3.1	32.6	18	36	0.24	0.50	6.7	47.2	240	0.6	1.1	3.10	17.5	0.60	32.6	
	2E	5G 5H	34	175	SGF	1.0	2.0	1.5	3.1	0.62	0.60	1.2															
	5A	5G 5H	32	375	SGF	1.0	2.0	3.1	3.1	1.45	0.60	2.7															
	5B	5G 5H	16	775	SGF	1.0	2.0	6.5	3.1	4.55	0.60	8.5															
	5C	5G 5H	19	275	SGF	1.0	2.0	2.3	3.1	0.83	0.60	1.5															
	2C 2B 2A	5G 5H											29.5	18	30	0.52	0.50	5.9	29.0	900	2.5	3.6	3.10	25.0	0.60	46.5	
	5D	5F		400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1															
	5E	5F	7	300	SGF	1.0	2.0	2.5	3.1	2.07	0.60	3.9															
	5D 5E	5F											6.9	18	18	0.43	0.50	4.2	7.4	200	0.8	3.9	3.10	28.7	0.60	53.4	
	5F	5G 5H	17	250	SGF	1.0	2.0	2.1	3.1	1.45	0.60	2.7	9.6	18	24	0.18	0.50	5.1	16.0	200	0.7	4.2	3.10	30.2	0.60	56.1	
	5G	5I	8	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1															
	5H	5I	10	450	SGF	1.0	2.0	3.8	3.1	3.72	0.60	6.9															
	5G 5H	5I											49.1	30	36	0.54	0.50	6.7	47.2	475	1.2	5.4	3.10	35.5	0.60	66.1	
	5J	5I	11	200	SGF	1.0	2.0	1.7	3.1	0.41	0.60	0.8															
	5K	5I	6	250	SGF	1.0	2.0	2.1	3.1	1.86	0.60	3.5															
	5J 5K	5I											4.2	15	15	0.43	0.50	3.7	4.6	200	0.9	4.0	3.10	2.3	0.60	4.2	
	5L	5M	125	300	SGF	1.0	2.0	2.5	3.1	2.48	0.60	4.6	4.6	8	15	0.51	0.50	3.7	4.6	400	1.8	4.9	3.10	2.5	0.60	4.6	
	5I	5M											53.4	18	42	0.28	0.50	7.4	71.1	400	0.9	4.0	3.10	40.3	0.60	74.9	
	5I	Out											58.0	36	42	0.33	0.50	7.4	71.1	750	1.7	7.1	3.10	40.3	0.60	74.9	
Furthest West Central Portion to Creek																						0.0					
	6A	6MH1	14	650	SGF	1.0	2.0	5.4	3.1	4.96	0.60	9.2															
	6B	6MH1	1	750	SGF	1.0	2.0	6.3	3.1	8.26	0.60	15.4															
	6A 6B	6MH1											24.6	12	30	0.36	0.50	5.9	29.0	400	1.1	4.2	3.10	1.2	6.61	24.6	
	6C	6MH1	3	600	SGF	1.0	2.0	5.0	3.1	2.07	0.60	3.9															
	6D	6MH1	2	275	SGF	1.0	2.0	2.3	3.1	1.24	0.60	2.3															
	6E	6MH1	5	550	SGF	1.0	2.0	4.6	3.1	1.65	0.60	3.1															
	6F	6MH1	4	600	SGF	1.0	2.0	5.0	3.1	3.51	0.60	6.5															
	6C 6D 6E 6F	6MH1											15.8	12	24	0.48	0.50	5.1	16.0	200	0.7	3.8	3.10	2.4	2.12	15.8	
	6MH1	Out											40.3	12	36	0.37	0.50	6.7	47.2	400	1.0	5.2	3.10	3.6	3.62	40.3	
Northwest 12" Line																											
	7A	7E 7F 7G	42	400	SGF	1.0	2.0	3.3	3.1	1.86	0.60	3.5															
	7B	7E 7F 7G	24	500	SGF	1.0	2.0	4.2	3.1	3.31	0.60	6.2															
	7C	7E 7F 7G	41	450	SGF	1.0	2.0	3.8	3.1	2.48	0.60	4.6															
	7D	7E 7F 7G	23	450	SGF	1.0	2.0	3.8	3.1	3.93	0.60	7.3															
	7A 7B 7C 7D	7E 7F 7G											21.5	12 PVC	30	0.28	0.50	5.9	29.0	350	1.0	5.2	3.10	11.6	0.60	21.5	
	7E	Out	40	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7															
	7F	Out	39	400	SGF	1.0	2.0	3.3	3.1	1.65	0.60	3.1															
	7G	Out	22	350	SGF	1.0	2.0	2.9	3.1	1.45	0.60	2.7															
	7E 7F 7G	Out											30.0	12 PVC	30	0.54	0.50	5.9	29.0	650	1.8	7.0	3.10	16.1	0.60	30.0	
Second Street South West																											
	9A	Out	126	650	SGF	1.0	2.0	5.4	3.1	15.90	0.60	29.6	29.6	18 PVC	36	0.20	0.50	6.7	47.2	1400	3.5	8.9	3.10	15.9	0.60	29.6	

LEGEND: FOR = Forest, FAL = Fallow, GRA = Grass, NBD = Nearly Bare Ground,
GWW = Grassed WaterWay, SGF = Shallow Gutter Flow

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CITY OF MILLER, SOUTH DAKOTA

WASTEWATER IMPROVEMENTS

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION

PREPARED BY:
NORTHEAST COUNCIL OF GOVERNMENTS
DECEMBER 2015

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: Miller	Proposed Funding Package		
Address: 120 West 2nd St. Miller, SD 57362-1316		Requested Funding	$4,541,000
		Local Cash	
	Other:	USDA-RD	$1,000
Subapplicant:	Other:	Storm Sewer	$1,958,000
DUNS Number: 071365993	Other:		
		TOTAL	$6,500,000

Project Title: Miller Wastewater and Stormwater Improvement Project- Phase I

Description:

The City of Miller has experienced problems with their wastewater system. The city has cleaned and televised the sewer system, separating storm and sanitary sewer main and made improvements to the wastewater treatment facility. The results of the televising show severe deficiencies which need to be addressed. In order to address and fix those problems, the City is proposing to replace the sanitary sewer main and make improvements to the storm sewer system.

The City of Miller's residents currently pay a monthly flat fee of $31.65 for sewer services. A reserve fund has not been set up for this project at this point in the planning process.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Ron Blachford, Mayor		12/29/2015
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: Northeast Council of Governments

Contact Person: Ted Dickey

Mailing Address: 416 Production St. N Ste #1

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: 605-626-2595 Fax:

Email address: ted@necog.org

Consulting Engineering Firm: SPN and Associates

Contact Person: Camden Hofer

Mailing Address: 2100 N Sanborn Blvd

City, State, and Zip: Mitchell, SD 57301

Telephone Number: (605) 996-7761 Fax:

Email address: chofer@spn-assoc.com

Legal Counsel's Firm: Riter Rogers Wattier & Northrup LLP

Contact Person: Jerry L Wattier

Mailing Address: 319 S Coteau St

City, State, and Zip: Pierre, SD 57501

Telephone Number: 605-224-5825 Fax:

Email address: rrwb@riterlaw.com

Bond Counsel's Firm: Meierhenry Sargent LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S Phillips Ave

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: 605-336-3075 Fax:

Email address: Todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B USDA-RD	C CWSRF Storm Sewer	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$75,800	$1,000	$49,000			$125,800
D. Other						
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$256,500		$119,000			$375,500
B. Project Inspection Fees	$370,200		$164,000			$534,200
C. Other						
4. Construction & Improvements	$3,489,280		$1,450,555			$4,939,835
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$4,191,780	$1,000	$1,782,555			$5,975,335
10. Contingencies	$348,900		$175,445			$524,345
11. Total (Lines 9 and 10)	$4,540,680	$1,000	$1,958,000			$6,499,680
12. Total %	69.86%	0.02%	30.12%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) DENR		$6,499,000	March,2016
Other (Explain) USDA-RD		$1,000	March, 2016
Other (Explain)			
Total		$6,500,000	$6,500,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other USDA-RD	$1,000	3.125%	40	$44	Wastewater Project Surcharge
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1st

Population Served Current: 1,461 2010 1,488 2000 1,533

Top three employers within 30 miles	Number of Employees	Type of Business
Data Trak	170	Medical Coding
Miller High School	82	Education
Avera Hospital	60	Medical

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2014					
Purpose	Cleaning and Televising					
Security Pledged	Project Surcharge Revenue Bon					
Amount	$242,000					
Maturity Date (mmm/yyyy)	05/2035					
Debt Holder	BWNR					
Debt Coverage Requirement	100%					
Avg. Annual Required Payment	$13,497					
Outstanding Balance	$198,166					

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$228,031	$450,519	$234,006	$270,317	$291,490	$300,235
Surcharge Fees			$12,683	$12,683	$386,090	$386,090
Other (Explain) other service revenue			$18,400	$6,500,000		
Operating Expenses						
Personal Services	($93,905)	($97,343)	($105,023)	($150,025)	($154,526)	($159,162)
Chemical, Material & Supplies	($67,894)	($45,541)	($33,288)	($38,500)		
Electric & Other Utilities			($4,182)	($14,100)		
Other (Explain) Capital Improvements			($124,301)	($36,250)		
Operating Net Cash	$66,232	$307,635	($1,704)	$6,544,125	$523,054	$527,163
Nonoperating Cash Flow						
Interest Revenue	$297	$98				
Transfers In (Explain)						
Fixed Asset Purchases Investment earnings	($12,194)	($196,313)	($7,128)	($24,000)		
Transfers Out (Explain)						
Principal Debt Payments				($9,200)	($139,328)	($143,268)
Interest Debt Payments				($7,100)	($216,428)	($216,428)
Other (Explain) Capital Improvements				($6,500,000)		
Nonoperating Net Cash	($11,897)	($196,215)	($7,128)	($6,540,300)	($355,756)	($359,696)
Increase (Decrease) Cash	$54,335	$111,420	($8,832)	$3,825	$167,298	$167,467
Beginning Cash Balance	$247,143	$301,478	$412,898	$404,066	$407,891	$575,189
Ending Cash Balance	$301,478	$412,898	$404,066	$407,891	$575,189	$742,657
Restricted Balance Certificate of Deposit						
Unrestricted Balance						

Additional Comments (Explanations)

The P & I on any loan given on the storm sewer system repairs will be paid back from monies generated by a new storm sewer fee that will be imposed starting in February of 2016. At this time all costs for both wastewater and storm sewer are shown above out of the wastewater budget. 2015 numbers are through October. 2016 number are budgeted.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber
	N/A	

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$31.65	$69.15	707	
Business	$31.65	$69.15	124	
Other:				
Other:				

Are fees based on usage or flat rate? Flat Rate

When is proposed fee scheduled to take effect? July 2016

When did the current fee take effect? January 1st, 2016

What was the fee prior to the current rate? $29.00

Storm Sewer Projects Only: Does applicant have a separate storm water fee? They will

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
City Buildings	Muncipial	3%
Wilbur Ellis	Agricultural	3%

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. ☒
- A public hearing held discussing the project and the use of an SRF loan to finance the project. ☒
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. ☐
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. ☐

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	City of Miller

Project Name:	Miller Wastewater and Storm water Improvement Project- Phase I

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: Ronald Blachford

Printed Name: Ron Blachford

Title: Mayor

Date: 12/29/2015

Project Engineer

Signature: Camden A. Hofer, PE

Printed Name: Camden Hofer

License #: SD 8322

Date: 12/29/2015

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	$4,542,000

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	$1,958,000
	TOTAL:	$6,500,000

Ron Blachford, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/29/2015

Date

Certification of Nonpoint Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
VII A	NPS pollution - agricultural activities. Plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. Example BMPs include conservation tillage, nutrient management, and irrigation water management.	_____
VII B	NPS pollution - animal production. Confined animal facilities and grazing. Example BMPs include animal waste storage, animal waste nutrient management, composting, and planned grazing.	_____
VII C	NPS pollution - forestry. Removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for the planting of trees. Example BMPs include pre-harvest planting, streamside buffers, road management, and revegetation of disturbed areas.	_____
VII D	NPS pollution - new or existing development in urban or rural setting. Erosion, sedimentation, and discharge of pollutants (e.g. inadequately treated wastewater, oil grease, road salts, and toxic chemicals) into water resources from construction sites, roads, bridges, parking lots, and buildings. Example BMPs include wet ponds, construction site erosion and sedimentation controls, sand filters, and detention basin retrofit. This category includes only runoff projects in communities without Phase I or Phase II storm water permits.	_____
VII E	NPS pollution - ground water protection. Wellhead and recharge protection areas. Activities attributed to specific causes are included in a later, more specific category.	_____
VII F	NPS pollution - boating and marinas. Poorly flushed waterways, boat maintenance activities, discharge of sewage from boats, and physical alteration of shoreline, wetlands, and aquatic habitat during operation or construction of a marina. Example BMPs include pump out systems and oil containment booms.	_____

Category	Definition	Loan Amount
VII G	NPS pollution - mining and quarrying activities. Example BMPs detention berms and seeding or revegetation.	_____
VII H	NPS pollution - abandoned, idle, and under used industrial sites. All pollution control activities at these sites regardless of activity. Example BMPs include ground water monitoring wells, in situ treatment of contaminated soils and ground water, capping to prevent storm water infiltration, and storage tank activities at brownfields.	_____
VII I	NPS pollution - tanks designed to hold chemicals, gasoline, or petroleum products. Tanks may be located either above or below ground. Example BMPs include spill containment, in situ treatment of contaminated soils and ground water, and upgrade, rehabilitation, or removal of petroleum/chemical storage tanks.	_____
VII J	NPS pollution - sanitary landfills. Example BMPs include leachate collection or on-site treatment, gas collections and control, and capping and closure.	_____
VII K	NPS pollution - channel modification, dams, streambank and shoreline erosion, and wetland or riparian area protection or restoration. Example BMPs include conservation easements, swales or filter strips, shore erosion control, wetland development and restoration, and bank and channel stabilization.	_____
VII L	NPS pollution - rehabilitation or replacement of individual or community sewerage disposal system. Construction of collector sewers to transport wastes to a cluster septic tank or other decentralized facilities. Collection sewers and expansion of existing or construction of new centralized treatment facilities that replace individual or community sewerage disposal system are included on Point Source Category table.	
	TOTAL:	_____

Ron Blachford, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/29/2015

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Ron Blachford, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/29/2015

Date

☐ I am unable to certify to the above statements. Attached is my explanation

USER NAME PASSWORD

LOG IN

Forgot Username? Forgot Password?

Create an Account

Entity Dashboard

Entity Overview

- Entity Record
  - Core Data
  - Assertions
  - Reps & Certs
  - POCs
- Reports
  - Service Contract Report
  - BioPreferred Report
- Exclusions
  - Active Exclusions
  - Inactive Exclusions
  - Excluded Family Members

RETURN TO SEARCH

MILLER, CITY OF
DUNS: 071365093 CAGE Code: 5QSL1
Status: Active

120 W 3RD ST
MILLER, SD, 57362-1316
UNITED STATES

Expiration Date: 03/30/2016
Purpose of Registration: Federal Assistance Awards Only

Entity Overview

Entity Information

Name: MILLER, CITY OF
Doing Business As: POLICE STATION
Business Type: US Local Government
POC Name: Shannon Speck
Registration Status: Active
Activation Date: 03/31/2015
Expiration Date: 03/30/2016

Exclusions

Active Exclusion Records? No

SAM | System for Award Management 1.0

IBM v1.P.40.20151201-1827
WWW3

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.

KOHLMAN, BIERSCHBACH & ANDERSON, LLP

CERTIFIED PUBLIC ACCOUNTANTS

PARTNERS
ROY R FAUTH, CPA
DAVID S ANDERSON, CPA
WILLIAM J BACHMEIER, CPA
ROSEMARY MUELLER, CPA

117 E. 3RD STREET • PO BOX 127
MILLER, SOUTH DAKOTA 57362
605-853-2744 • 605-853-2745 (FAX)

WITH OFFICES IN
MOBRIDGE, SOUTH DAKOTA
LEMMON, SOUTH DAKOTA

INDEPENDENT ACCOUNTANTS' COMPILATION REPORT

City Council
City of Miller
109 East Commercial Avenue
Miller, South Dakota 57442

We have compiled the accompanying statement of net position - modified cash basis, the balance sheet - modified cash basis of the governmental funds, and the statement of net position - modified cash basis of the proprietary funds of the City of Miller, South Dakota, as of December 31, 2013, and the related statement of activities - modified cash basis, the statement of revenues, expenditures and changes in fund balances - modified cash basis for governmental funds, and the statement of revenues, expenses, and changes in fund net position - modified cash basis for proprietary funds for the year then ended, and the accompanying supplementary information contained in the budgetary comparison schedule - budgetary basis for the governmental fund and the schedule of changes in long-term debt, which are presented only for supplementary analysis purposes, included in the accompanying prescribed form. We have not audited or reviewed the financial statements included in the accompanying prescribed form and, accordingly, do not express an opinion or provide any assurance about whether the financial statements are in accordance with the form prescribed by the Department of Legislative Audit of the State of South Dakota.

Management is responsible for the preparation and fair presentation of the financial statements included in the form prescribed by the Department of Legislative Audit of the State of South Dakota and for designing, implementing, and maintaining internal control relevant to the preparation and fair presentation of the financial statements.

Our responsibility is to conduct the compilation in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. The objective of a compilation is to assist management in presenting financial information in the form of financial statements without undertaking to obtain or provide any assurance that there are no material modifications that should be made to the financial statements.

Management has elected to omit substantially all of the disclosures ordinarily included in financial statements prepared in accordance with the modified cash basis of accounting. If the omitted disclosures were included in the financial statements, they might influence the user's conclusions about the City's assets, liabilities, net position, revenues, and expenses. Accordingly, the financial statements are not designed for those who are not informed about such matters.

The budgetary comparison information and the schedule of changes in long-term debt on pages 12 through 14 of the prescribed forms are presented for purposes of additional analysis and are not a required part of the basic financial statements. The supplementary information has been compiled from information that is the representation of management. We have not audited or reviewed the supplementary information and, accordingly, we do not express an opinion or provide any assurance on such supplementary information.

The financial statements included in the accompanying prescribed form are presented in accordance with the requirements of the Department of Legislative Audit of the State of South Dakota, and are not intended to be a presentation in accordance with the modified cash basis of accounting.

CITY OF MILLER
STATEMENT OF NET POSITION - MODIFIED CASH BASIS
December 31, 2013

	Primary Government		
	Governmental Activities	Business-Type Activities	Total
ASSETS:			
Cash and Cash Equivalents	71,828.00	1,536,374.00	1,608,202.00
Investments		59,896.00	59,896.00
Restricted Assets:			
Cash and cash equivalents	202,185.00	866,592.00	1,068,777.00
Investments			0.00
TOTAL ASSETS	274,013.00	2,462,862.00	2,736,875.00
NET POSITION:			
Restricted for: (See Note ___)			
Capital Projects Purposes		233,545.00	233,545.00
Debt Service Purposes	202,185.00	633,047.00	835,232.00
Permanently Restricted Purposes			
Expendable			0.00
Non-Expendable			0.00
Other Purposes			0.00
Unrestricted (Deficit)	71,828.00	1,596,270.00	1,668,098.00
TOTAL NET POSITION	274,013.00	2,462,862.00	2,736,875.00

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CITY OF MILLER
STATEMENT OF ACTIVITIES - MODIFIED CASH BASIS
Year Ended December 31, 2013

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position – Primary Government: Governmental Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Business-Type Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Total
Primary Government:							
Governmental Activities:							
General Government	163,446.00	22,596.00			(140,850.00)		(140,850.00)
Public Safety	338,748.00	2,434.00		4,422.00	(331,892.00)		(331,892.00)
Public Works	495,671.00	8,000.00	78,398.00	40,715.00	(368,558.00)		(368,558.00)
Health and Welfare	2,000.00	75.00			(1,925.00)		(1,925.00)
Culture and Recreation	107,093.00	13,276.00			(93,817.00)		(93,817.00)
Conservation and Development	132,156.00				(132,156.00)		(132,156.00)
Intergovernmental Expenditures					0.00		0.00
Miscellaneous Expenditures					0.00		0.00
**Capital Outlay - Unallocated					0.00		0.00
*Interest on Long-Term Debt	28,693.00				(28,693.00)		(28,693.00)
Total Governmental Activities	1,267,807.00	46,381.00	78,398.00	45,137.00	(1,097,891.00)		(1,097,891.00)
Business-type Activities:							
Water	435,691.00	489,292.00				53,601.00	53,601.00
Sewer	173,993.00	228,031.00				54,038.00	54,038.00
Electric	3,263,457.00	1,975,321.00				(1,288,136.00)	(1,288,136.00)
Airport						0.00	0.00
Total Business-Type Activities	3,873,141.00	2,692,644.00	0.00	0.00		(1,180,497.00)	(1,180,497.00)
Total Primary Government	5,140,948.00	2,739,025.00	78,398.00	45,137.00	(1,097,891.00)	(1,180,497.00)	(2,278,388.00)
General Revenues:							
Taxes:							
Property Taxes					326,269.00		326,269.00
Sales Taxes					795,354.00		795,354.00
State Shared Revenues					11,549.00		11,549.00
Grants and Contributions not Restricted to Specific Programs					2,522.00		2,522.00
Unrestricted Investment Earnings					576.00	2,435.00	3,011.00
Debt Issued							0.00
Miscellaneous Revenue					34,854.00		34,854.00
Special Items						195,177.00	195,177.00
Extraordinary Items							0.00
Transfers					(1,286.00)	1,286.00	0.00
Total General Revenues, Special Items, Extraordinary Items and Transfers					1,169,838.00	198,898.00	1,368,736.00
Change in Net Position					71,947.00	(981,599.00)	(909,652.00)
Net Position-Beginning					202,066.00	3,444,461.00	3,646,527.00
Adjustments:							
							0.00
Adjusted Net Position-Beginning					202,066.00	3,444,461.00	3,646,527.00
NET POSITION-ENDING					274,013.00	2,462,862.00	2,736,875.00

* The Municipality does not have interest expense related to the functions presented above. This amount includes indirect interest expense on general long-term debt.

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CITY OF MILLER
BALANCE SHEET - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
December 31, 2013

	General Fund
ASSETS:	
Cash and Cash Equivalents	71,828.00
106 Cash with Fiscal Agent	
151 Investments	
107.1 Restricted Cash and Cash Equivalents	202,185.00
107.2 Restricted Investments	
TOTAL ASSETS	274,013.00
FUND BALANCES:	
263 Nonspendable	
264 Restricted	202,185.00
265 Committed	
266 Assigned	10,000.00
267 Unassigned	61,828.00
TOTAL FUND BALANCES	274,013.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
Year Ended December 31, 2013

	General Fund
Revenues:	
310 Taxes:	
311 General Property Taxes	325,426.00
312 Airflight Property Tax	
313 General Sales and Use Taxes	795,354.00
314 Gross Receipts Business Taxes	
315 Amusement Taxes	
316 911 Telephone Surcharge	
317 Excise Tax	
318 Tax Deed Revenue	
319 Penalties and Interest on Delinquent Taxes	843.00
Total Taxes	1,121,623.00
320 Licenses and Permits	11,562.00
330 Intergovernmental Revenue:	
331 Federal Grants	12,475.00
332 Federal Shared Revenue	
333 Federal Payments in Lieu of Taxes	
334 State Grants	32,662.00
335 State Shared Revenue:	
335.01 Bank Franchise Tax	1,700.00
335.02 Motor Vehicle Commercial Prorate	5,934.00
335.03 Liquor Tax Reversion	9,849.00
335.04 Motor Vehicle Licenses (5%)	23,516.00
335.06 Fire Insurance Premiums Reversion	
335.07 Liquor License Reversion	
335.08 Local Government Highway and Bridge Fund	
335.09 911 Remittances	
335.20 Other	
336 State Payments in Lieu of Taxes	
338 County Shared Revenue:	
338.01 County Road Tax (25%)	4,323.00

CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
Year Ended December 31, 2013

	General Fund
338.02 County Highway and Bridge Reserve Tax (25%)	44,625.00
338.03 County Wheel Tax	
338.99 Other	
339 Other Intergovernmental Revenues	2,784.00
Total Intergovernmental Revenue	137,868.00
340 Charges for Goods and Services:	
341 General Government	38.00
342 Public Safety	1,862.00
343 Highways and Streets	7,629.00
344 Sanitation	371.00
345 Health	75.00
346 Culture and Recreation	13,276.00
347 Ambulance	
348 Cemetery	
349 Other	
Total Charges for Goods and Services	23,251.00
350 Fines and Forfeits:	
351 Court Fines and Costs	572.00
352 Animal Control Fines	
353 Parking Meter Fines	
354 Library	
359 Other	
Total Fines and Forfeits	572.00
360 Miscellaneous Revenue:	
361 Investment Earnings	576.00
362 Rentals	10,996.00
363 Special Assessments	
364 Maintenance Assessments	
367 Contributions and Donations from Private Sources	2,522.00
368 Liquor Operating Agreement Income	

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
Year Ended December 31, 2013

	General Fund
369 Other	22,118.00
Total Miscellaneous Revenue	36,212.00
Total Revenue	1,331,088.00
Expenditures:	
410 General Government:	
411 Legislative	28,318.00
412 Executive	
413 Elections	36.00
414 Financial Administration	111,656.00
419 Other	23,436.00
Total General Government	163,446.00
420 Public Safety:	
421 Police	291,422.00
422 Fire	29,197.00
423 Protective Inspection	
429 Other Protection	
Total Public Safety	320,619.00
430 Public Works:	
431 Highways and Streets	290,812.00
432 Sanitation	
433 Water	
434 Electricity	
435 Airport	60,279.00
436 Parking Facilities	
437 Cemeteries	
438 Natural Gas	
439 Transit	
Total Public Works	351,091.00
440 Health and Welfare:	
441 Health	
442 Home Health	

CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
Year Ended December 31, 2013

	General Fund
443 Mental Health Centers	
444 Humane Society	
445 Drug Education	
446 Ambulance	
447 Hospitals, Nursing Homes and Rest Homes	
449 Other	2,000.00
Total Health and Welfare	2,000.00
450 Culture and Recreation:	
451 Recreation	76,214.00
452 Parks	29,279.00
455 Libraries	
456 Auditorium	
457 Historical Preservation	
458 Museums	1,600.00
Total Culture and Recreation	107,093.00
460 Conservation and Development:	
463 Urban Redevelopment and Housing	156.00
465 Economic Development and Assistance (Industrial Development)	132,000.00
466 Economic Opportunity	
Total Conservation and Development	132,156.00
470 Debt Service	191,402.00
480 Intergovernmental Expenditures	
485 Capital Outlay	
490 Miscellaneous:	
491 Judgments and Losses	
492 Other Expenditures	
499 Liquor Operating Agreements	

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND
CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
Year Ended December 31, 2013

	General Fund
Total Miscellaneous	0.00
Total Expenditures	1,267,807.00
Excess of Revenues Over (Under) Expenditures	63,281.00
Other Financing Sources (Uses):	
391.01 Transfers In	1,508.00
511 Transfers Out	(1,286.00)
513 Payments to Refunded Debt Escrow Agent	
391.03 Sale of Municipal Property	
391.04 Compensation for Loss or Damage to Capital Assets	9,952.00
391.20 Long-Term Debt Issued	
Total Other Financing Sources (Uses)	10,174.00
391.06 (514) Special Items	
391.05 (515) Extraordinary Items	
Net Change in Fund Balance	73,455.00
Fund Balance - Beginning	200,558.00
Adjustments:	
Adjusted Fund Balance - Beginning	200,558.00
FUND BALANCE- ENDING	274,013.00

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CITY OF MILLER
Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances to the Statement of Activities
Year Ended December 31, 2013

Net Change in Fund Balances - Total Governmental Funds	73,455.00
Amounts reported for governmental activities in the statement of activities are different because:	
Internal service funds are used by management to charge the costs of certain activities, such as insurance to individual funds. The net revenue (expense) of the internal service funds is reported with governmental activities.	(1,508.00)
Change in Net Position of Governmental Activities	71,947.00

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CITY OF MILLER
STATEMENT OF NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
December 31, 2013

	Enterprise Funds			
	Water Fund	Sewer Fund	Electric Fund	Totals
ASSETS:				
Current Assets:				
Cash and Cash Equivalents	152,096.00	301,478.00	1,082,800.00	1,536,374.00
106 Cash with Fiscal Agent				0.00
151 Investments			59,896.00	59,896.00
Total Current Assets	152,096.00	301,478.00	1,142,696.00	1,596,270.00
Noncurrent Assets:				
107.1 Restricted Cash and Cash Equivalents	43,303.00		823,289.00	866,592.00
107.2 Restricted Investments				0.00
Total Noncurrent Assets	43,303.00	0.00	823,289.00	866,592.00
TOTAL ASSETS	195,399.00	301,478.00	1,965,985.00	2,462,862.00
NET POSITION:				
253.20 Restricted for:				
253.21 Revenue Bond Debt Service	43,303.00		589,744.00	633,047.00
253.22 Revenue Bond Retirement				0.00
253.23 Revenue Bond Contingency				0.00
253.24 Special Assessment Bond Guarantee				0.00
253.25 Special Assessment Bond Sinking				0.00
253.26 Equipment Repair and/or Replacement				0.00
253.27 Landfill Closure and Post Closure Costs				0.00
253.28 Permanently Restricted Purposes				0.00
253.29 Construction			233,545.00	233,545.00
253.90 Unrestricted	152,096.00	301,478.00	1,142,696.00	1,596,270.00
TOTAL NET POSITION	195,399.00	301,478.00	1,965,985.00	2,462,862.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
Year Ended December 31, 2013

	Enterprise Funds					
	Water Fund	Sewer Fund	Electric Fund	Airport Fund	Totals	Internal Service Funds
Operating Revenue:						
370/380 Charges for Goods and Services	489,292.00	228,031.00	1,975,321.00		2,692,644.00	
Revenue Dedicated to Servicing Debt					0.00	
380.05 Lottery Sales					0.00	
369 Miscellaneous					0.00	
Total Operating Revenue	489,292.00	228,031.00	1,975,321.00	0.00	2,692,644.00	0.00
Operating Expenses:						
410 Personal Services	114,071.00	93,905.00	237,170.00		445,146.00	
420 Other Current Expense	64,632.00	67,894.00	82,088.00		214,614.00	
426.2 Materials	188,221.00		1,271,879.00		1,460,100.00	
430 Capital Assets		12,194.00	1,096,134.00		1,108,328.00	
Total Operating Expenses	366,924.00	173,993.00	2,687,271.00	0.00	3,228,188.00	0.00
Operating Income (Loss)	122,368.00	54,038.00	(711,950.00)	0.00	(535,544.00)	0.00
Nonoperating Revenue (Expense):						
330 Operating Grants					0.00	
361 Investment Earnings	207.00	297.00	1,931.00		2,435.00	
362 Rental Revenue					0.00	
441 Debt Service (Principal)	(37,529.00)		(105,000.00)		(142,529.00)	
442 Interest Expense (Enter as Negative)	(31,238.00)		(471,186.00)		(502,424.00)	
391.03 Sale of Municipal Property					0.00	
391.20 Long-Term Debt Issued					0.00	
(429)369.01 Other			195,177.00		195,177.00	
Total Nonoperating Revenue (Expense)	(68,560.00)	297.00	(379,078.00)	0.00	(447,341.00)	0.00

CITY OF MILLER
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
Year Ended December 31, 2013

	Enterprise Funds					
	Water Fund	Sewer Fund	Electric Fund	Airport Fund	Totals	Internal Service Funds
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	53,808.00	54,335.00	(1,091,028.00)	0.00	(982,885.00)	0.00
391.07 Capital Contributions					0.00	
391.1 Transfers In				1,286.00	1,286.00	
511 Transfers Out (Enter as Negative)					0.00	(1,508.00)
391.06 (514) Special Items					0.00	
391.05 (515) Extraordinary Items					0.00	
Change in Net Position	53,808.00	54,335.00	(1,091,028.00)	1,286.00	(981,599.00)	(1,508.00)
Net Position - Beginning	141,591.00	247,143.00	3,057,013.00	(1,286.00)	3,444,461.00	1,508.00
Adjustments:						
					0.00	
					0.00	
Adjusted Net Position - Beginning	141,591.00	247,143.00	3,057,013.00	(1,286.00)	3,444,461.00	1,508.00
NET POSITION - ENDING	195,399.00	301,478.00	1,965,985.00	0.00	2,462,862.00	0.00

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CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
Year Ended December 31, 2013

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
Revenues:				
310 Taxes:				
311 General Property Taxes	307,750.00	307,750.00	325,426.00	17,676.00
312 Airflight Property Tax				0.00
313 General Sales and Use Taxes	549,550.00	549,550.00	795,354.00	245,804.00
314 Gross Receipts Business Taxes				0.00
315 Amusement Taxes				0.00
316 911 Telephone Surcharge				0.00
317 Excise Tax				0.00
318 Tax Deed Revenue				0.00
319 Penalties and Interest on Delinquent Taxes	600.00	600.00	843.00	243.00
Total Taxes	857,900.00	857,900.00	1,121,623.00	263,723.00
320 Licenses and Permits	21,575.00	21,575.00	11,562.00	(10,013.00)
330 Intergovernmental Revenue:				
331 Federal Grants	3,000.00	15,475.00	12,475.00	(3,000.00)
332 Federal Shared Revenue				0.00
333 Federal Payments in Lieu of Taxes				0.00
334 State Grants		33,698.00	32,662.00	(1,036.00)
335 State Shared Revenue:				
335.01 Bank Franchise Tax	1,500.00	1,500.00	1,700.00	200.00
335.02 Motor Vehicle Commercial Prorate	7,000.00	7,000.00	5,934.00	(1,066.00)
335.03 Liquor Tax Reversion	9,000.00	9,000.00	9,849.00	849.00
335.04 Motor Vehicle Licenses (5%)	16,000.00	16,000.00	23,516.00	7,516.00
335.06 Fire Insurance Premiums Reversion				0.00
335.07 Liquor License Reversion				0.00
335.08 Local Government Highway and Bridge Fund				0.00
335.09 911 Remittances				0.00
335.20 Other				0.00
336 State Payments in Lieu of Taxes				0.00
338 County Shared Revenue:				
338.01 County Road Tax (25%)	5,000.00	5,000.00	4,323.00	(677.00)
338.02 County Highway and Bridge Reserve Tax (25%)	35,000.00	35,000.00	44,625.00	9,625.00
338.03 County Wheel Tax				0.00
338.99 Other				0.00
339 Other Intergovernmental Revenues	2,200.00	2,200.00	2,784.00	584.00
Total Intergovernmental Revenue	78,700.00	124,873.00	137,868.00	12,995.00

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
Year Ended December 31, 2013

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
340 Charges for Goods and Services:				
341 General Government	100.00	100.00	38.00	(62.00)
342 Public Safety	3,000.00	3,000.00	1,862.00	(1,138.00)
343 Highways and Streets	4,500.00	4,500.00	7,629.00	3,129.00
344 Sanitation	100.00	100.00	371.00	271.00
345 Health	200.00	200.00	75.00	(125.00)
346 Culture and Recreation	16,350.00	16,350.00	13,276.00	(3,074.00)
347 Ambulance				0.00
348 Cemetery				0.00
349 Other				0.00
Total Charges for Goods and Services	24,250.00	24,250.00	23,251.00	(999.00)
350 Fines and Forfeits:				
351 Court Fines and Costs	250.00	250.00	572.00	322.00
352 Animal Control Fines				0.00
353 Parking Meter Fines				0.00
354 Library				0.00
359 Other				0.00
Total Fines and Forfeits	250.00	250.00	572.00	322.00
360 Miscellaneous Revenue:				
361 Investment Earnings	1,800.00	1,800.00	576.00	(1,224.00)
362 Rentals	5,460.00	5,460.00	10,996.00	5,536.00
363 Special Assessments				0.00
364 Maintenance Assessments				0.00
367 Contributions and Donations from Private Sources	2,500.00	2,500.00	2,522.00	22.00
368 Liquor Operating Agreement Income				0.00
369 Other	9,290.00	9,290.00	22,118.00	12,828.00
Total Miscellaneous Revenue	19,050.00	19,050.00	36,212.00	17,162.00
Total Revenue	1,001,725.00	1,047,898.00	1,331,088.00	283,190.00
Expenditures:				
410 General Government:				
411 Legislative	30,020.00	30,020.00	28,318.00	1,702.00
411.5 Contingency	10,000.00	10,000.00		
Amount Transferred (Enter as Negative)		(10,000.00)		0.00
412 Executive	17,080.00	17,080.00		17,080.00
413 Elections	1,500.00	1,500.00	36.00	1,464.00
414 Financial Administration	104,780.00	106,209.00	111,656.00	(5,447.00)
419 Other	21,950.00	23,379.00	23,436.00	(57.00)
Total General Government	185,330.00	178,188.00	163,446.00	14,742.00

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CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
Year Ended December 31, 2013

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
420 Public Safety:				0.00
421 Police	274,890.00	288,275.00	291,422.00	(3,147.00)
422 Fire	24,850.00	26,279.00	29,197.00	(2,918.00)
423 Protective Inspection				0.00
429 Other Protection	500.00	500.00		500.00
Total Public Safety	300,240.00	315,054.00	320,619.00	(5,565.00)
430 Public Works:				
431 Highways and Streets	335,600.00	335,600.00	290,812.00	44,788.00
432 Sanitation				0.00
433 Water				0.00
434 Electricity				0.00
435 Airport	0.00	42,143.00	60,279.00	(18,136.00)
436 Parking Facilities				0.00
437 Cemeteries				0.00
438 Natural Gas				0.00
439 Transit				0.00
Total Public Works	335,600.00	377,743.00	351,091.00	26,652.00
440 Health and Welfare:				
441 Health				0.00
442 Home Health				0.00
443 Mental Health Centers				0.00
444 Humane Society				0.00
445 Drug Education				0.00
446 Ambulance				0.00
447 Hospitals, Nursing Homes and Rest Homes				0.00
449 Other	2,300.00	3,728.00	2,000.00	1,728.00
Total Health and Welfare	2,300.00	3,728.00	2,000.00	1,728.00
450 Culture and Recreation:				
451 Recreation	85,599.00	85,599.00	76,214.00	9,385.00
452 Parks	22,400.00	23,828.00	29,279.00	(5,451.00)
455 Libraries				0.00
456 Auditorium				0.00
457 Historical Preservation				0.00
458 Museums	1,600.00	1,600.00	1,600.00	0.00
Total Culture and Recreation	109,599.00	111,027.00	107,093.00	3,934.00
460 Conservation and Development:				
463 Urban Redevelopment and Housing			156.00	(156.00)
465 Economic Development and Assistance (Industrial Development)	132,000.00	132,000.00	132,000.00	0.00
466 Economic Opportunity				0.00

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
Year Ended December 31, 2013

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
Total Conservation and Development	132,000.00	132,000.00	132,156.00	(156.00)
470 Debt Service			191,402.00	(191,402.00)
480 Intergovernmental Expenditures				0.00
490 Miscellaneous:				
491 Judgments and Losses				0.00
492 Other Expenditures				0.00
499 Liquor Operating Agreements				0.00
Total Miscellaneous	0.00	0.00	0.00	0.00
Total Expenditures	1,065,069.00	1,117,740.00	1,267,807.00	(150,067.00)
Excess of Revenues Over (Under) Expenditures	(63,344.00)	(69,842.00)	63,281.00	133,123.00
Other Financing Sources (Uses):				
391.01 Transfers In	65,000.00	65,000.00	1,508.00	(63,492.00)
511 Transfers Out (Enter as Negative)			(1,286.00)	(1,286.00)
513 Payments to Refunded Debt Escrow Agent (Enter as Negative)				0.00
391.03 Sale of Municipal Property				0.00
391.04 Compensation for Loss or Damage to Capital Assets		6,498.00	9,952.00	3,454.00
391.20 General Long-Term Debt Issued				0.00
Total Other Financing Sources (Uses)	65,000.00	71,498.00	10,174.00	(61,324.00)
391.06 (514) Special Items				0.00
391.05 (515) Extraordinary Items				0.00
Net Change in Fund Balances	1,656.00	1,656.00	73,455.00	71,799.00
Fund Balance - Beginning	200,558.00	200,558.00	200,558.00	
Adjustments:				
Adjusted Fund Balance - Beginning	200,558.00	200,558.00	200,558.00	0.00
FUND BALANCE - ENDING	202,214.00	202,214.00	274,013.00	71,799.00

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CITY OF MILLER
SCHEDULE OF CHANGES IN LONG-TERM DEBT
Year Ended December 31, 2013

Indebtedness	Long-Term Debt January 1, 2013	Add New Debt	Less Debt Retired	Long-Term Debt December 31, 2013
Governmental Long-Term Debt:				
231.01 General Obligation Bonds				
231.02 Revenue Bonds	665,111.00		137,006.00	528,105.00
231.03 Special Assessment Bonds				
236 Advance from Other Funds				
237 Other Long-Term Liabilities	83,658.00		25,702.00	57,956.00
238 Net OPEB Obligation				
Enterprise Long-Term Debt: (only cash basis entities need to complete the enterprise section)				
231.01 General Obligation Bonds				
231.02 Revenue Bonds	7,950,191.00		142,530.00	7,807,661.00
231.03 Special Assessment Bonds				
235 Accrued Landfill Closure and Postclosure Care Costs				
236 Advance from Other Funds				
237 Other Long-Term Liabilities				
238 Net OPEB Obligation				
Total	8,698,960.00	0.00	305,238.00	8,393,722.00

(Do not include interest in the above figures)

See Independent Accountants' Compilation Report

CITY OF MILLER

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KOHLMAN, BIERSCHBACH & ANDERSON, LLP
CERTIFIED PUBLIC ACCOUNTANTS

PARTNERS
ROY R FAUTH, CPA
WILLIAM J BACHMEIER, CPA

117 E 3RD STREET • PO BOX 127
MILLER, SD 57362
605-853-2744 • 605-853-2745 (FAX)

WITH AN OFFICE IN
MOBRIDGE, SOUTH DAKOTA

INDEPENDENT ACCOUNTANTS' COMPILATION REPORT

City Council
City of Miller
109 East Commercial Avenue
Miller, South Dakota 57442

We have compiled the accompanying statement of net position - modified cash basis, the balance sheet - modified cash basis of the governmental funds, and the statement of net position - modified cash basis of the proprietary funds of the City of Miller, South Dakota, as of December 31, 2014, and the related statement of activities - modified cash basis, the statement of revenues, expenditures and changes in fund balances - modified cash basis for governmental funds, and the statement of revenues, expenses, and changes in fund net position - modified cash basis for proprietary funds for the year then ended, and the accompanying supplementary information contained in the budgetary comparison schedule - budgetary basis for the general fund and the schedule of changes in long-term debt, included in the accompanying prescribed form. We have not audited or reviewed the financial statements included in the accompanying prescribed form and, accordingly, do not express an opinion or provide any assurance about whether the financial statements are in accordance with the form prescribed by the Department of Legislative Audit of the State of South Dakota.

Management is responsible for the preparation and fair presentation of the financial statements included in the form prescribed by the Department of Legislative Audit of the State of South Dakota and for designing, implementing, and maintaining internal control relevant to the preparation and fair presentation of the financial statements.

Our responsibility is to conduct the compilation in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. The objective of a compilation is to assist management in presenting financial information in the form of financial statements without undertaking to obtain or provide any assurance that there are no material modifications that should be made to the financial statements.

Management has elected to omit substantially all of the disclosures ordinarily included in financial statements prepared in accordance with the modified cash basis of accounting. If the omitted disclosures were included in the financial statements, they might influence the user's conclusions about the City's assets, liabilities, net position, revenues, and expenses. Accordingly, the financial statements are not designed for those who are not informed about such matters.

The budgetary comparison information and the schedule of changes in long-term debt on pages 12 through 14 of the prescribed forms are presented for purposes of additional analysis and are not a required part of the basic financial statements. The supplementary information has been compiled from information that is the representation of management. We have not audited or reviewed the supplementary information and, accordingly, do not express an opinion or provide any assurance on such supplementary information.

The financial statements included in the accompanying prescribed form are presented in accordance with the requirements of the Department of Legislative Audit of the State of South Dakota, and are not intended to be a presentation in accordance with the modified cash basis of accounting.

CITY OF MILLER
STATEMENT OF NET POSITION - MODIFIED CASH BASIS
DECEMBER 31, 2014

	Primary Government		
	Governmental Activities	**Business-Type Activities**	**Total**
ASSETS:			
Cash and Cash Equivalents	138,600.00	1,475,327.00	1,613,927.00
Investments		60,126.00	60,126.00
Restricted Assets:			
Cash and cash equivalents	210,044.00	679,805.00	889,849.00
Investments			0.00
TOTAL ASSETS	348,644.00	2,215,258.00	2,563,902.00
NET POSITION:			
Restricted for: (See Note ___)			
Capital Projects Purposes	31,321.00		31,321.00
Debt Service Purposes	209,364.00	679,805.00	889,169.00
Permanently Restricted Purposes			
Expendable			0.00
Non-Expendable			0.00
Other Purposes	680.00		680.00
Unrestricted (Deficit)	107,279.00	1,535,453.00	1,642,732.00
TOTAL NET POSITION	348,644.00	2,215,258.00	2,563,902.00

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CITY OF MILLER
STATEMENT OF ACTIVITIES - MODIFIED CASH BASIS
YEAR ENDED DECEMBER 31, 2014

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position – Primary Government: Governmental Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Business-Type Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Total
Primary Government:							
Governmental Activities:							
General Government	188,747.00	26,093.00			(162,654.00)		(162,654.00)
Public Safety	333,964.00	347.00	7,307.00	870.00	(325,440.00)		(325,440.00)
Public Works	577,166.00	11,460.00	98,048.00	112,496.00	(355,162.00)		(355,162.00)
Health and Welfare	2,000.00	75.00			(1,925.00)		(1,925.00)
Culture and Recreation	103,533.00	16,218.00			(87,315.00)		(87,315.00)
Conservation and Development	132,569.00			680.00	(131,889.00)		(131,889.00)
Intergovernmental Expenditures					0.00		0.00
Miscellaneous Expenditures					0.00		0.00
**Capital Outlay - Unallocated					0.00		0.00
*Interest on Long-Term Debt	21,966.00				(21,966.00)		(21,966.00)
Total Governmental Activities	1,359,945.00	54,193.00	105,355.00	114,046.00	(1,086,351.00)		(1,086,351.00)
Business-type Activities:							
Water	461,353.00	481,706.00				20,353.00	20,353.00
Sewer	339,197.00	450,519.00				111,322.00	111,322.00
Electric	2,738,308.00	2,148,060.00				(590,248.00)	(590,248.00)
Total Business-Type Activities	3,538,858.00	3,080,285.00	0.00	0.00		(458,573.00)	(458,573.00)
Total Primary Government	4,898,803.00	3,134,478.00	105,355.00	114,046.00	(1,086,351.00)	(458,573.00)	(1,544,924.00)
General Revenues:							
Taxes:							
Property Taxes					338,711.00		338,711.00
Sales Taxes					769,861.00		769,861.00
State Shared Revenues					12,361.00		12,361.00
Grants and Contributions not Restricted to Specific Programs					3,188.00		3,188.00
Unrestricted Investment Earnings					628.00	1,918.00	2,546.00
Debt Issued							0.00
Miscellaneous Revenue					28,233.00	217,051.00	245,284.00
Special Items							0.00
Extraordinary Items							0.00
Transfers							0.00
Total General Revenues, Special Items, Extraordinary Items and Transfers					1,152,982.00	218,969.00	1,371,951.00
Change in Net Position					66,631.00	(239,604.00)	(172,973.00)
Net Position-Beginning					282,013.00	2,454,862.00	2,736,875.00
Adjustments:							
_____							0.00
Adjusted Net Position-Beginning					282,013.00	2,454,862.00	2,736,875.00
NET POSITION-ENDING					348,644.00	2,215,258.00	2,563,902.00

* The Municipality does not have interest expense related to the functions presented above. This amount includes indirect interest expense on general long-term debt.

** This amount excludes the capital purchases that are included in the direct expenses of the various functions. See Note ____.

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CITY OF MILLER
BALANCE SHEET - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
ASSETS:			
Cash and Cash Equivalents	107,279.00	31,321.00	138,600.00
106 Cash with Fiscal Agent			0.00
151 Investments			0.00
107.1 Restricted Cash and Cash Equivalents	210,044.00		210,044.00
107.2 Restricted Investments			0.00
TOTAL ASSETS	317,323.00	31,321.00	348,644.00
FUND BALANCES:			
263 Nonspendable			0.00
264 Restricted	210,044.00	31,321.00	241,365.00
265 Committed			0.00
266 Assigned			0.00
267 Unassigned	107,279.00		107,279.00
TOTAL FUND BALANCES	317,323.00	31,321.00	348,644.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
Revenues:			
310 Taxes:			
311 General Property Taxes	338,004.00		338,004.00
312 Airflight Property Tax			0.00
313 General Sales and Use Taxes	769,861.00		769,861.00
314 Gross Receipts Business Taxes			0.00
315 Amusement Taxes			0.00
316 911 Telephone Surcharge			0.00
317 Excise Tax			0.00
318 Tax Deed Revenue			0.00
319 Penalties and Interest on Delinquent Taxes	707.00		707.00
Total Taxes	1,108,572.00	0.00	1,108,572.00
320 Licenses and Permits	14,529.00		14,529.00
330 Intergovernmental Revenue:			
331 Federal Grants	60,097.00		60,097.00
332 Federal Shared Revenue			0.00
333 Federal Payments in Lieu of Taxes			0.00
334 State Grants	20,677.00		20,677.00
335 State Shared Revenue:			
335.01 Bank Franchise Tax	1,783.00		1,783.00
335.02 Motor Vehicle Commercial Prorate	7,080.00		7,080.00
335.03 Liquor Tax Reversion	10,578.00		10,578.00
335.04 Motor Vehicle Licenses (5%)	24,827.00		24,827.00
335.06 Fire Insurance Premiums Reversion			0.00
335.08 Local Government Highway and Bridge Fund	50,754.00		50,754.00
335.09 911 Remittances			0.00
335.20 Other			0.00
336 State Payments in Lieu of Taxes			0.00
338 County Shared Revenue:			
338.01 County Road Tax (25%)	4,323.00		4,323.00

CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
338.02 County Highway and Bridge Reserve Tax (25%)	963.00		963.00
338.03 County Wheel Tax			0.00
338.99 Other			0.00
339 Other intergovernmental Revenues	2,865.00		2,865.00
Total Intergovernmental Revenue	183,947.00	0.00	183,947.00
340 Charges for Goods and Services:			
341 General Government	142.00		142.00
342 Public Safety	220.00		220.00
343 Highways and Streets	11,235.00		11,235.00
344 Sanitation	225.00		225.00
345 Health	75.00		75.00
346 Culture and Recreation	16,218.00		16,218.00
347 Ambulance			0.00
348 Cemetery			0.00
349 Other			0.00
Total Charges for Goods and Services	28,115.00	0.00	28,115.00
350 Fines and Forfeits:			
351 Court Fines and Costs	127.00		127.00
352 Animal Control Fines			0.00
353 Parking Meter Fines			0.00
354 Library			0.00
359 Other			0.00
Total Fines and Forfeits	127.00	0.00	127.00
360 Miscellaneous Revenue:			
361 Investment Earnings	628.00		628.00
362 Rentals	11,422.00		11,422.00
363 Special Assessments			0.00
364 Maintenance Assessments			0.00
367 Contributions and Donations from Private Sources	3,868.00	50,000.00	53,868.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
368 Liquor Operating Agreement Income			0.00
369 Other	16,964.00		16,964.00
Total Miscellaneous Revenue	32,882.00	50,000.00	82,882.00
Total Revenue	1,368,172.00	50,000.00	1,418,172.00
Expenditures:			
410 General Government:			
411 Legislative	30,428.00		30,428.00
412 Executive			0.00
413 Elections			0.00
414 Financial Administration	130,780.00		130,780.00
419 Other	27,539.00		27,539.00
Total General Government	188,747.00	0.00	188,747.00
420 Public Safety:			
421 Police	292,587.00		292,587.00
422 Fire	23,032.00		23,032.00
423 Protective Inspection			0.00
429 Other Protection			0.00
Total Public Safety	315,619.00	0.00	315,619.00
430 Public Works:			
431 Highways and Streets	325,537.00		325,537.00
432 Sanitation			0.00
433 Water			0.00
434 Electricity			0.00
435 Airport	82,854.00	18,679.00	101,533.00
436 Parking Facilities			0.00
437 Cemeteries			0.00
438 Natural Gas			0.00
439 Transit			0.00
Total Public Works	408,391.00	18,679.00	427,070.00

CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
440 Health and Welfare:			
441 Health			0.00
442 Home Health			0.00
443 Mental Health Centers			0.00
444 Humane Society			0.00
445 Drug Education			0.00
446 Ambulance			0.00
447 Hospitals, Nursing Homes and Rest Homes			0.00
449 Other	2,000.00		2,000.00
Total Health and Welfare	2,000.00	0.00	2,000.00
450 Culture and Recreation:			
451 Recreation	81,370.00		81,370.00
452 Parks	20,563.00		20,563.00
455 Libraries			0.00
456 Auditorium			0.00
457 Historical Preservation			0.00
458 Museums	1,600.00		1,600.00
Total Culture and Recreation	103,533.00	0.00	103,533.00
460 Conservation and Development:			
463 Urban Redevelopment and Housing	569.00		569.00
465 Economic Development and Assistance (Industrial Development)	132,000.00		132,000.00
466 Economic Opportunity			0.00
Total Conservation and Development	132,569.00	0.00	132,569.00
470 Debt Service	190,407.00		190,407.00
480 Intergovernmental Expenditures			0.00
485 Capital Outlay			0.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MODIFIED CASH BASIS
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

	General Fund	Capital Improvement Fund	Total Governmental Funds
490 Miscellaneous:			
491 Judgments and Losses			0.00
492 Other Expenditures			0.00
499 Liquor Operating Agreements			0.00
Total Miscellaneous	0.00	0.00	0.00
Total Expenditures	1,341,266.00	18,679.00	1,359,945.00
Excess of Revenues Over (Under) Expenditures	26,906.00	31,321.00	58,227.00
Other Financing Sources (Uses):			
391.01 Transfers In	1,508.00		1,508.00
511 Transfers Out			0.00
513 Payments to Refunded Debt Escrow Agent			0.00
391.03 Sale of Municipal Property	8,404.00		8,404.00
391.04 Compensation for Loss or Damage to Capital Assets			0.00
391.20 Long-Term Debt Issued			0.00
Total Other Financing Sources (Uses)	9,912.00	0.00	9,912.00
391.06 (514) Special Items			0.00
391.05 (515) Extraordinary Items			0.00
Net Change in Fund Balance	36,818.00	31,321.00	68,139.00
Fund Balance - Beginning	280,505.00	0.00	280,505.00
Adjustments:			
			0.00
			0.00
Adjusted Fund Balance - Beginning	280,505.00	0.00	280,505.00
FUND BALANCE- ENDING	317,323.00	31,321.00	348,644.00

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CITY OF MILLER
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2014

Net Change in Fund Balances - Total Governmental Funds	68,139.00
Amounts reported for governmental activities in the statement of activities are different because:	
This amount represents capital asset purchases which are reported as expenditures on the fund financial statements but increase assets on the government wide statements.	
The receipt of donated capital assets is not reported on the fund statements, but is reported as a program revenue on the government wide statements.	
Payment of principal on long-term debt is an expenditure in the governmental funds but the payment reduces long-term liabilities in the statement of net assets. G.O Bond $ Revenue Bond $ Sp. Assess. Bond $ Other Long-Term $	
The issuance of long-term debt is an other financing source in the fund statements but an increase in long-term liabilities on the government wide statements. G.O. Bond $ Revenue Bond $ Sp. Assess. Bond $ Other Long-Term $	( )
Governmental funds recognize expenditures for amounts of compensated absences actually paid to employees with current financial resources during the fiscal year. Amounts of compensated absences earned by employees are not recognized in the funds. In the statement of activities, expenses for these benefits are recognized when the employees earn leave credits. Vacation Leave $ Sick Leave $ Other Leave Types $ (To arrive at the totals add amount earned and deduct amounts taken, hence, "change in" balance for the year, increase (decrease))	
Internal service funds are used by management to charge the costs of certain activities, such as insurance to individual funds. The net revenue (expense) of the internal service funds is reported with governmental activities.	(1,508.00)
Supplies acquired are an expenditure on the fund statements when purchased but are expensed on the statement of activities when consumed. This amount represents the "change in" inventory of supplies. Increase (decrease)	
Change in Net Position of Governmental Activities	66,631.00

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CITY OF MILLER
STATEMENT OF NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
DECEMBER 31, 2014

	Enterprise Funds			
	Water Fund	Sewer Fund	Electric Fund	Totals
ASSETS:				
Current Assets:				
Cash and Cash Equivalents	165,341.00	404,898.00	905,088.00	1,475,327.00
106 Cash with Fiscal Agent				0.00
151 Investments			60,126.00	60,126.00
Total Current Assets	165,341.00	404,898.00	965,214.00	1,535,453.00
Noncurrent Assets:				
107.1 Restricted Cash and Cash Equivalents	51,014.00		628,791.00	679,805.00
107.2 Restricted Investments				0.00
Total Noncurrent Assets	51,014.00	0.00	628,791.00	679,805.00
TOTAL ASSETS	216,355.00	404,898.00	1,594,005.00	2,215,258.00
NET POSITION:				
253.20 Restricted for:				
253.21 Revenue Bond Debt Service	51,014.00		628,791.00	679,805.00
253.22 Revenue Bond Retirement				0.00
253.23 Revenue Bond Contingency				0.00
253.24 Special Assessment Bond Guarantee				0.00
253.25 Special Assessment Bond Sinking				0.00
253.26 Equipment Repair and/or Replacement				0.00
253.27 Landfill Closure and Post Closure Costs				0.00
253.28 Permanently Restricted Purposes				0.00
253.29 Other purposes				0.00
253.90 Unrestricted	165,341.00	404,898.00	965,214.00	1,535,453.00
TOTAL NET POSITION	216,355.00	404,898.00	1,594,005.00	2,215,258.00

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CITY OF MILLER
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2014

	Enterprise Funds				
	Water Fund	Sewer Fund	Electric Fund	Totals	Internal Service Funds
Operating Revenue:					
370/380 Charges for Goods and Services	481,706.00	450,519.00	2,148,060.00	3,080,285.00	
Revenue Dedicated to Servicing Debt				0.00	
380.05 Lottery Sales				0.00	
369 Miscellaneous				0.00	
Total Operating Revenue	481,706.00	450,519.00	2,148,060.00	3,080,285.00	0.00
Operating Expenses:					
410 Personal Services	98,960.00	97,343.00	233,358.00	429,661.00	
420 Other Current Expense	75,263.00	45,541.00	69,680.00	190,484.00	
426.2 Materials	191,726.00		1,437,688.00	1,629,414.00	
430 Capital Assets	39,561.00	-196,313.00	414,021.00	649,895.00	
Total Operating Expenses	405,510.00	339,197.00	2,154,747.00	2,899,454.00	0.00
Operating Income (Loss)	76,196.00	111,322.00	(6,687.00)	180,831.00	0.00
Nonoperating Revenue (Expense):					
330 Operating Grants				0.00	
361 Investment Earnings	236.00	98.00	1,584.00	1,918.00	
362 Rental Revenue				0.00	
441 Debt Service (Principal)	(27,382.00)		(115,000.00)	(142,382.00)	
442 Interest Expense (Enter as Negative)	(28,461.00)		(468,561.00)	(497,022.00)	
391.03 Sale of Municipal Property	367.00		20,309.00	20,676.00	
391.20 Long-Term Debt Issued				0.00	
(429)369.01 Other			196,375.00	196,375.00	
Total Nonoperating Revenue (Expense)	(55,240.00)	98.00	(365,293.00)	(420,435.00)	0.00

CITY OF MILLER
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION - MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2014

	Enterprise Funds				
	Water Fund	Sewer Fund	Electric Fund	Totals	Internal Service Funds
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	20,956.00	111,420.00	(371,980.00)	(239,604.00)	0.00
391.07 Capital Contributions				0.00	
391.1 Transfers In				0.00	
511 Transfers Out (Enter as Negative)				0.00	(1,508.00)
391.06 (514) Special Items				0.00	
391.05 (515) Extraordinary Items				0.00	
Change in Net Position	20,956.00	111,420.00	(371,980.00)	(239,604.00)	(1,508.00)
Net Position - Beginning	195,399.00	293,478.00	1,965,985.00	2,454,862.00	1,508.00
Adjustments:					
				0.00	
				0.00	
Adjusted Net Position - Beginning	195,399.00	293,478.00	1,965,985.00	2,454,862.00	1,508.00
NET POSITION - ENDING	216,355.00	404,898.00	1,594,005.00	2,215,258.00	0.00

See Independent Accountants' Compilation Report

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
YEAR ENDED DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
Revenues:				
310 Taxes:				
311 General Property Taxes	322,750.00	322,750.00	338,004.00	15,254.00
312 Airflight Property Tax				0.00
313 General Sales and Use Taxes	760,000.00	760,000.00	769,861.00	9,861.00
314 Gross Receipts Business Taxes				0.00
315 Amusement Taxes				0.00
316 911 Telephone Surcharge				0.00
317 Excise Tax				0.00
318 Tax Deed Revenue				0.00
319 Penalties and Interest on Delinquent Taxes	600.00	600.00	707.00	107.00
Total Taxes	1,083,350.00	1,083,350.00	1,108,572.00	25,222.00
320 Licenses and Permits	10,425.00	10,425.00	14,529.00	4,104.00
330 Intergovernmental Revenue:				
331 Federal Grants	0.00	51,466.00	60,097.00	8,631.00
332 Federal Shared Revenue				0.00
333 Federal Payments in Lieu of Taxes				0.00
334 State Grants	0.00	19,518.00	20,677.00	1,159.00
335 State Shared Revenue:				
335.01 Bank Franchise Tax	1,500.00	1,500.00	1,783.00	283.00
335.02 Motor Vehicle Commercial Prorate	7,000.00	7,000.00	7,080.00	80.00
335.03 Liquor Tax Reversion	10,000.00	10,000.00	10,578.00	578.00
335.04 Motor Vehicle Licenses (5%)	16,000.00	16,000.00	24,827.00	8,827.00
335.06 Fire Insurance Premiums Reversion				0.00
335.08 Local Government Highway and Bridge Fund	40,000.00	40,000.00	50,754.00	10,754.00
335.09 911 Remittances				0.00
335.20 Other				0.00
336 State Payments in Lieu of Taxes				0.00
338 County Shared Revenue:				
338.01 County Road Tax (25%)	4,000.00	4,000.00	4,323.00	323.00
338.02 County Highway and Bridge Reserve Tax (25%)			963.00	963.00
338.03 County Wheel Tax				0.00
338.99 Other				0.00
339 Other Intergovernmental Revenues	2,200.00	2,200.00	2,865.00	665.00
Total Intergovernmental Revenue	80,700.00	151,684.00	183,947.00	32,263.00

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
YEAR ENDED DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
340 Charges for Goods and Services:				
341 General Government			142.00	142.00
342 Public Safety	1,500.00	1,500.00	220.00	(1,280.00)
343 Highways and Streets	4,500.00	4,500.00	11,235.00	6,735.00
344 Sanitation	250.00	250.00	225.00	(25.00)
345 Health	200.00	200.00	75.00	(125.00)
346 Culture and Recreation	16,350.00	16,350.00	16,218.00	(132.00)
347 Ambulance				0.00
348 Cemetery				0.00
349 Other				0.00
Total Charges for Goods and Services	22,800.00	22,800.00	28,115.00	5,315.00
350 Fines and Forfeits:				
351 Court Fines and Costs	250.00	250.00	127.00	(123.00)
352 Animal Control Fines				0.00
353 Parking Meter Fines				0.00
354 Library				0.00
359 Other				0.00
Total Fines and Forfeits	250.00	250.00	127.00	(123.00)
360 Miscellaneous Revenue:				
361 Investment Earnings	350.00	350.00	628.00	278.00
362 Rentals	10,914.00	10,914.00	11,422.00	508.00
363 Special Assessments				0.00
364 Maintenance Assessments				0.00
367 Contributions and Donations from Private Sources	2,500.00	2,500.00	3,868.00	1,368.00
368 Liquor Operating Agreement Income				0.00
369 Other	31,000.00	31,000.00	16,964.00	(14,036.00)
Total Miscellaneous Revenue	44,764.00	44,764.00	32,882.00	(11,882.00)
Total Revenue	1,242,289.00	1,313,273.00	1,368,172.00	54,899.00
Expenditures:				
410 General Government:				
411 Legislative	30,270.00	30,428.00	30,428.00	0.00
411.5 Contingency	25,000.00	25,000.00		
Amount Transferred (Enter as Negative)		(10,361.00)		14,639.00
412 Executive				0.00
413 Elections	1,500.00	1,500.00		1,500.00
414 Financial Administration	140,419.00	140,679.00	130,780.00	9,899.00
419 Other	27,300.00	27,539.00	27,539.00	0.00
Total General Government	224,489.00	214,785.00	188,747.00	26,038.00

See Independent Accountants' Compilation Report

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
YEAR ENDED DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
420 Public Safety:				0.00
421 Police	286,620.00	293,178.00	292,587.00	591.00
422 Fire	31,050.00	31,050.00	23,032.00	8,018.00
423 Protective Inspection				0.00
429 Other Protection	1,000.00	1,000.00		1,000.00
Total Public Safety	318,670.00	325,228.00	315,619.00	9,609.00
430 Public Works:				
431 Highways and Streets	340,590.00	351,731.00	325,537.00	26,194.00
432 Sanitation				0.00
433 Water				0.00
434 Electricity				0.00
435 Airport	29,175.00	83,500.00	82,854.00	646.00
436 Parking Facilities				0.00
437 Cemeteries				0.00
438 Natural Gas				0.00
439 Transit				0.00
Total Public Works	369,765.00	435,231.00	408,391.00	26,840.00
440 Health and Welfare:				
441 Health				0.00
442 Home Health				0.00
443 Mental Health Centers				0.00
444 Humane Society				0.00
445 Drug Education				0.00
446 Ambulance				0.00
447 Hospitals, Nursing Homes and Rest Homes				0.00
449 Other			2,000.00	(2,000.00)
Total Health and Welfare	0.00	0.00	2,000.00	(2,000.00)
450 Culture and Recreation:				
451 Recreation	68,375.00	76,870.00	81,370.00	(4,500.00)
452 Parks	29,550.00	29,550.00	20,563.00	8,987.00
455 Libraries				0.00
456 Auditorium				0.00
457 Historical Preservation				0.00
458 Museums			1,600.00	(1,600.00)
Total Culture and Recreation	97,925.00	106,420.00	103,533.00	2,887.00
460 Conservation and Development:				
463 Urban Redevelopment and Housing	400.00	569.00	569.00	0.00
465 Economic Development and Assistance (Industrial Development)	140,100.00	140,100.00	132,000.00	8,100.00
466 Economic Opportunity				0.00
Total Conservation and Development	140,500.00	140,669.00	132,569.00	8,100.00

CITY OF MILLER
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
GENERAL FUND
YEAR ENDED DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts	Variance with Final Budget
	Original	Final	(Budgetary Basis)	Positive (Negative)
470 Debt Service	192,800.00	192,800.00	190,407.00	2,393.00
480 Intergovernmental Expenditures				0.00
490 Miscellaneous:				
491 Judgments and Losses				0.00
492 Other Expenditures				0.00
499 Liquor Operating Agreements				0.00
Total Miscellaneous	0.00	0.00	0.00	0.00
Total Expenditures	1,344,149.00	1,415,133.00	1,341,266.00	73,867.00
Excess of Revenues Over (Under) Expenditures	(101,860.00)	(101,860.00)	26,906.00	128,766.00
Other Financing Sources (Uses):				
391.01 Transfers In	96,860.00	96,860.00	1,508.00	(95,352.00)
511 Transfers Out (Enter as Negative)				0.00
513 Payments to Refunded Debt Escrow Agent (Enter as Negative)				0.00
391.03 Sale of Municipal Property	5,000.00	5,000.00	8,404.00	3,404.00
391.04 Compensation for Loss or Damage to Capital Assets				0.00
391.20 General Long-Term Debt Issued				0.00
Total Other Financing Sources (Uses)	101,860.00	101,860.00	9,912.00	(91,948.00)
391.06 (514) Special Items				0.00
391.05 (515) Extraordinary Items				0.00
Net Change in Fund Balances	0.00	0.00	36,818.00	36,818.00
Fund Balance - Beginning	280,505.00	280,505.00	280,505.00	0.00
Adjustments:				
Adjusted Fund Balance - Beginning	280,505.00	280,505.00	280,505.00	0.00
FUND BALANCE - ENDING	280,505.00	280,505.00	317,323.00	36,818.00

See Independent Accountants' Compilation Report

CITY OF MILLER
SCHEDULE OF CHANGES IN LONG-TERM DEBT
YEAR ENDED DECEMBER 31, 2014

Indebtedness	Long-Term Debt January 01, 2014	Add New Debt	Less Debt Retired	Long-Term Debt December 31, 2014
Governmental Long-Term Debt:				
231.01 General Obligation Bonds				
231.02 Revenue Bonds	528,106.00		142,310.00	385,796.00
231.03 Special Assessment Bonds				
236 Advance from Other Funds				
237 Other Long-Term Liabilities	57,924.00		26,132.00	31,792.00
238 Net OPEB Obligation				
Enterprise Long-Term Debt: (only cash basis entities need to complete the enterprise section)				
231.01 General Obligation Bonds				
231.02 Revenue Bonds	7,807,661.00		142,382.00	7,665,279.00
231.03 Special Assessment Bonds				
235 Accrued Landfill Closure and Postclosure Care Costs				
236 Advance from Other Funds				
237 Other Long-Term Liabilities				
238 Net OPEB Obligation				
Total	8,393,691.00	0.00	310,824.00	8,082,867.00

(Do not include interest in the above figures)

See Independent Accountants' Compilation Report

USER RATE ORDINANCE

ORDINANCE #656

AN ORDINANCE FOR THE PURPOSE OF AMENDING THE REVISED ORDINANCE OF THE CITY OF MILLER, SOUTH DAKOTA, NO. 543 AND RESOLUTION #2011-8 AND RESOLUTION #2013-10 TO PROVIDE FOR AMENDING THE SEWER RATES TO BE CHARGED BY THE MILLER MUNICIPAL SEWER SYSTEM.

Be it ordained by the Common Council of the City of Miller, South Dakota that Revised Ordinance No. 543 establishing sewer rates be amended as follows:

1. Rates. Rate to be charged to customers be amended as follows:

Residential Sewer Rate		
Base Fee	30.00	
Plus		31.65
Debt Service Surcharge	1.65	
Commercial Sewer Rate		
Base Fee	30.00	
Plus		31.65
Debt Service Surcharge	1.65	

**Commercial accounts using over 6,000 gallons of water per month add $1.00/1,000.

This Ordinance should be in full force and effect so as to commence and include all sewer billings after the billing is made for sewer usage for the month of January, 2015.

_____

Ron Blachford, Mayor

BUDGET

GLRVEXRP 10/29/15
REVENUE 4:18

Sewer

CITY OF MILLER
REVENUE & EXPENSE REPORT
CALENDAR 10/2015, FISCAL 10/2015

OPER: SC

ACCOUNT NUMBER	ACCOUNT TITLE	MTD BALANCE	YTD BALANCE	BUDGET	DIFFERENCE
604-3830-3311	FEDERAL GRANTS	.00	.00	.00	.00
604-3830-3341	STATE GRANTS	.00	.00	.00	.00
604-3830-3611	INTEREST EARNED	.00	114.19	500.00	385.81
604-3830-3835	SEWER SURCH REV	1,275.09	12,682.78	15,000.00	2,317.22
604-3830-3831	SEWER CHARGES	24,440.15	234,006.35	267,000.00	32,993.65
604-3830-3832	SEWER SUPPLIES/MATERIALS	.00	.00	300.00	300.00
604-3830-3839	OTHER SEWER REVENUE	.00	18,400.00	200.00	18,200.00-
604-3830-3913	SALE OF MUN. PROPERTY	.00	.00	.00	.00
	SEWER TOTAL	25,715.24	265,203.32	283,000.00	17,796.68
	SEWER TOTAL	25,715.24	265,203.32	283,000.00	17,796.68
		**********	**********	**********	**********
	TOTAL OF ALL REVENUE	25,715.24	265,203.32	283,000.00	17,796.68
		**********	**********	**********	**********

GLRVEXRP 10/29/15
EXPENSES 4:18

Sewer

CITY OF MILLER
REVENUE & EXPENSE REPORT
CALENDAR 10/2015, FISCAL 10/2015

OPER: SC

ACCOUNT NUMBER	ACCOUNT TITLE	MTD BALANCE	YTD BALANCE	BUDGET	DIFFERENCE
604-4325-4110	REGULAR SALARY	8,181.43	78,184.52	105,000.00	26,815.48
604-4325-4120	FICA	594.12	5,663.64	8,000.00	2,336.36
604-4325-4130	RETIREMENT	490.90	4,691.25	6,300.00	1,608.75
604-4325-4140	WORK COMP. INS.	.00	.00	2,700.00	2,700.00
604-4325-4150	GROUP HEALTH INS.	1,150.38	11,502.64	13,000.00	1,497.36
604-4325-4151	GROUP LIFE INS.	11.95	121.05	200.00	78.95
604-4325-4210	PROP & LIAB INS	.00	2,679.84	3,500.00	820.16
604-4325-4220	ENGINEER FEES	.00	.00	5,000.00	5,000.00
604-4325-4221	OTHER PROF FEES	23.28	417.47	500.00	82.53
604-4325-4231	PUBLISH ORDS & NOTICES	57.46	57.46	250.00	192.54
604-4325-4251	REPAIRS & MAINTENANCE	807.93	18,180.52	20,000.00	1,819.48
604-4325-4252	RIP RAP PROJECT	.00	.00	.00	.00
604-4325-4261	OPERATE SUPPLY & MATERIAL	647.99	13,224.03	13,000.00	224.03-
604-4325-4265	FUEL	116.69	1,883.23	5,500.00	3,616.77
604-4325-4270	CONFERENCE FEES	.00	128.33	300.00	171.67
604-4325-4271	LODGING EXPENSE	.00	225.29	350.00	124.71
604-4325-4272	MEAL EXPENSE	60.00	115.50	150.00	34.50
604-4325-4273	MILEAGE EXPENSE	.00	166.37	175.00	8.63
604-4325-4281	UTILITIES	236.39	3,784.79	8,500.00	4,715.21
604-4325-4282	TELEPHONE	44.94	396.93	750.00	353.07
604-4325-4290	OTHER EXPENSE	8,549.56	8,562.81	300.00	8,262.81-
604-4325-4292	MEMBERSHIPS & DUES	.00	1,500.00	2,500.00	1,000.00
604-4325-4321	CAPITAL IMPROVEMENT	105,263.38	115,263.38	40,000.00	75,263.38-
604-4325-4350	FURNITURE/OFFICE EQUIPMENT	.00	44.29	250.00	205.71
604-4325-4360	VEHICLE & MACHINERY	.00	.00	4,000.00	4,000.00
604-4325-4382	RESERVE-EQUIPMENT	.00	7,127.61	20,000.00	12,872.39
604-4325-4410	PRINCIPAL	.00	.00	4,500.00	4,500.00
604-4325-4420	INTEREST	.00	.00	7,000.00	7,000.00
	SEWER TOTAL	126,236.40	273,920.95	271,725.00	2,195.95-
604-5111-5111	TRANSFERS OUT	.00	.00	.00	.00
	TRANSFER OUT TOTAL	.00	.00	.00	.00
	SEWER TOTAL	126,236.40	273,920.95	271,725.00	2,195.95-
	TOTAL EXPENSES	126,236.40	273,920.95	271,725.00	2,195.95-

I will be supplementing the sewer by the State payments as well as the bond (sewer other revenue). We have not received all of these funds to date.

P - Personal Services
O = Other
C = Chemical, materials & Supplies
U = Utilities

Sewer

CITY OF MILLER
REVENUE & EXPENSE REPORT
CALENDAR 1/2016, FISCAL 1/2016

ACCOUNT NUMBER	ACCOUNT TITLE	MTD BALANCE	YTD BALANCE	BUDGET	DIFFERENCE
604-3830-3311	FEDERAL GRANTS	.00	.00	.00	.00
604-3830-3341	STATE GRANTS	.00	.00	.00	.00
604-3830-3611	INTEREST EARNED	.00	.00	500.00	500.00
604-3830-3835	SEWER SURCH REV	.00	.00	15,000.00	15,000.00
604-3830-3831	SEWER CHARGES	.00	.00	267,000.00	267,000.00
604-3830-3832	SEWER SUPPLIES/MATERIALS	.00	.00	300.00	300.00
604-3830-3839	OTHER SEWER REVENUE	.00	.00	200.00	200.00
604-3830-3913	SALE OF MUN. PROPERTY	.00	.00	.00	.00
	SEWER TOTAL	.00	.00	283,000.00	283,000.00
	SEWER TOTAL	.00	.00	283,000.00	283,000.00
		**********	**********	**********	**********
	TOTAL OF ALL REVENUE	.00	.00	283,000.00	283,000.00
		**********	**********	**********	**********

Sewer

CITY OF MILLER
REVENUE & EXPENSE REPORT
CALENDAR 1/2016, FISCAL 1/2016

ACCOUNT NUMBER	ACCOUNT TITLE	MTD BALANCE	YTD BALANCE	BUDGET	DIFFERENCE
604-4325-4110	REGULAR SALARY	.00	.00	108,000.00	108,000.00
604-4325-4120	FICA	.00	.00	8,300.00	8,300.00
604-4325-4130	RETIREMENT	.00	.00	6,500.00	6,500.00
604-4325-4140	WORK COMP. INS.	.00	.00	2,800.00	2,800.00
604-4325-4150	GROUP HEALTH INS.	.00	.00	15,000.00	15,000.00
604-4325-4151	GROUP LIFE INS.	.00	.00	200.00	200.00
604-4325-4210	PROP & LIAB INS	.00	.00	4,800.00	4,800.00
604-4325-4220	ENGINEER FEES	.00	.00	5,000.00	5,000.00
604-4325-4221	OTHER PROF FEES	.00	.00	750.00	750.00
604-4325-4231	PUBLISH ORDS & NOTICES	.00	.00	200.00	200.00
604-4325-4251	REPAIRS & MAINTENANCE	.00	.00	20,000.00	20,000.00
604-4325-4252	RIP RAP PROJECT	.00	.00	.00	.00
604-4325-4261	OPERATE SUPPLY & MATERIAL	.00	.00	13,000.00	13,000.00
604-4325-4265	FUEL	.00	.00	5,500.00	5,500.00
604-4325-4270	CONFERENCE FEES	.00	.00	300.00	300.00
604-4325-4271	LODGING EXPENSE	.00	.00	300.00	300.00
604-4325-4272	MEAL EXPENSE	.00	.00	150.00	150.00
604-4325-4273	MILEAGE EXPENSE	.00	.00	175.00	175.00
604-4325-4281	UTILITIES	.00	.00	8,500.00	8,500.00
604-4325-4282	TELEPHONE	.00	.00	600.00	600.00
604-4325-4290	OTHER EXPENSE	.00	.00	300.00	300.00
604-4325-4292	MEMBERSHIPS & DUES	.00	.00	2,500.00	2,500.00
604-4325-4321	CAPITAL IMPROVEMENT	.00	.00	35,000.00	35,000.00
604-4325-4350	FURNITURE/OFFICE EQUIPMENT	.00	.00	1,000.00	1,000.00
604-4325-4360	VEHICLE & MACHINERY	.00	.00	4,000.00	4,000.00
604-4325-4382	RESERVE-EQUIPMENT	.00	.00	20,000.00	20,000.00
604-4325-4410	PRINCIPAL	.00	.00	9,200.00	9,200.00
604-4325-4420	INTEREST	.00	.00	7,100.00	7,100.00
	SEWER TOTAL	.00	.00	279,175.00	279,175.00
604-5111-5111	TRANSFERS OUT	.00	.00	.00	.00
	TRANSFER OUT TOTAL	.00	.00	.00	.00
	SEWER TOTAL	.00	.00	279,175.00	279,175.00
	TOTAL EXPENSES	.00	.00	279,175.00	279,175.00

COST ESTIMATES AND MAP

Sanitary Sewer Priority 1 & 2 - Phase 1

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$209,800.00	$209,800.00
2	Full Depth Concrete Saw Cut	700	LF	$6.00	$4,200.00
3	Full Depth Asphalt Saw Cut	1,100	LF	$4.00	$4,400.00
4	Remove and Dispose of Concrete Paving	3,200	SY	$10.00	$32,000.00
5	Pulverize and Salvage Existing Asphalt	26,100	SY	$3.50	$91,350.00
6	Remove and Dispose of Existing Manholes	42	EA	$400.00	$16,800.00
7	Remove and Dispose of Curb and Gutter	2,310	LF	$4.00	$9,240.00
8	4" Sanitary Sewer Service Pipe	3,930	LF	$26.00	$102,180.00
9	8" Sanitary Sewer Pipe	9,630	LF	$45.00	$433,350.00
10	12" Sanitary Sewer Pipe	930	LF	$51.00	$47,430.00
11	18" Sanitary Sewer Pipe	20	LF	$80.00	$1,600.00
12	Trench Stabilization for High Groundwater	2,600	TN	$30.00	$78,000.00
13	Sanitary Sewer Manholes	30	EA	$3,800.00	$114,000.00
14	Connect to Existing Sewer Service	131	EA	$250.00	$32,750.00
15	8" x 4" Sanitary Sewer Wyes	91	EA	$200.00	$18,200.00
16	12" x 4" Sanitary Sewer Wyes	40	EA	$300.00	$12,000.00
17	Post TV Inspection of Sewer	10,560	LF	$1.00	$10,560.00
18	Place Recycled Asphalt	26,100	SY	$2.00	$52,200.00
19	Fine Grading of Base Material	26,100	SY	$2.00	$52,200.00
20	Curb and Gutter	2,310	LF	$33.00	$76,230.00
21	Gravel Base Course or Surfacing	16,100	TN	$22.00	$354,200.00
22	Concrete Paving	3,200	SY	$80.00	$256,000.00
23	Asphalt Surfacing	3,600	TN	$120.00	$432,000.00
24	Double Blotter Coat	15,700	SY	$8.00	$125,600.00
25	Bypass Pumping	1	LS	$39,000.00	$39,000.00
26	Traffic Control	1	LS	$31,000.00	$31,000.00
27	Siltation and Erosion Control	1	LS	$10,000.00	$10,000.00
28	Topsoil, Seed, Fertilize & Mulch	9,300	SY	$1.50	$13,950.00
29	Incidental Construction Items	1	LS	$172,000.00	$172,000.00
				Subtotal	$2,832,240.00
				Contingencies	$283,200.00
				Total Construction Cost	$3,115,440.00
				Legal and Administration Cost	$62,300.00
				Design Engineering	$181,500.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$308,600.00
				Total Project Cost	$3,673,840.00

West Lift Station Repair

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$9,000.00	$9,000.00
2	Adjust Wet Well / Guiderails	4	VF	$2,000.00	$8,000.00
3	Adjust Valve Pit	4	VF	$1,000.00	$4,000.00
4	Raise Control Panel	1	LS	$1,200.00	$1,200.00
5	Electrical Adjustments	1	LS	$3,200.00	$3,200.00
6	Embankment and Access Road	200	CY	$10.00	$2,000.00
7	Gravel Surfacing (6")	110	TN	$20.00	$2,200.00
8	Topsoil, Seed, Fertilizer & Mulch	300	SY	$1.25	$375.00
9	Erosion Control	1	LS	$1,000.00	$1,000.00
10	Remove and Replace West Lift Station Pumps	1	LS	$15,000.00	$15,000.00
11	40-kW Trailer-Mounted Generator	1	EA	$40,000.00	$40,000.00
12	Sandblast and Recoat Fittings, Valves and Piping	1	LS	$10,000.00	$10,000.00
13	Force Main Cleaning with Poly Swab	1	LS	$3,000.00	$3,000.00
				Subtotal	$98,975.00
				Contingencies	$9,900.00
				Total Construction Cost	$108,875.00
				Legal and Administration Cost	$2,200.00
				Design Engineering	$9,800.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$11,800.00
				Total Project Cost	$138,675.00

East Lift Station Replacement Option 2

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$47,000.00	$47,000.00
2	Abandon Existing Lift Station	1	LS	$10,000.00	$10,000.00
3	12" Sanitary Sewer Pipe	100	LF	$70.00	$7,000.00
4	6" PVC Dual Force Main	1,200	LF	$38.00	$45,600.00
5	6" PVC 90° Bend	4	EA	$400.00	$1,600.00
6	Connect to Existing Manhole	2	EA	$1,500.00	$3,000.00
7	1" Type K Copper Water Service Pipe	80	LF	$23.00	$1,840.00
8	1" Curb Stop	1	EA	$275.00	$275.00
9	Lift Station Wet Well and Appurtenances	1	LS	$120,000.00	$120,000.00
10	Above-Ground Piping, Fittings and Related Items	1	LS	$50,000.00	$50,000.00
11	Control Building with Concrete and Related Items	1	LS	$90,000.00	$90,000.00
12	Rock Surfacing	50	TN	$30.00	$1,500.00
13	Site Grading and Access Road Embankment	1	LS	$4,500.00	$4,500.00
14	Gravel Surfacing	550	TN	$22.00	$12,100.00
15	60 kW Automatic Stand-by Generator	1	LS	$50,000.00	$50,000.00
16	Electrical Work and Materials	1	LS	$20,000.00	$20,000.00
17	Bypass Pumping	1	LS	$5,000.00	$5,000.00
18	Clean Force Main	1	LS	$5,000.00	$5,000.00
19	Traffic Control	1	LS	$5,000.00	$5,000.00
20	Erosion Control	1	LS	$1,000.00	$1,000.00
21	Dewatering	1	LS	$15,000.00	$15,000.00
22	Chain Linked Fence with Gates	1	LS	$7,000.00	$7,000.00
23	Seed, Fertilize and Mulch Disturbed Area	7,100	SY	$1.50	$10,650.00
				Subtotal	$513,065.00
				Contingencies	$51,300.00
				Total Construction Cost	$564,365.00
				Legal and Administration Cost	$11,300.00
				Design Engineering	$34,000.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$40,000.00
				Total Project Cost	$654,665.00

Lift Stations SCADA

Item	Description	Quantity		Unit Price	Total Cost
1	Furnish SCADA Equipment	1	LS	$30,000.00	$30,000.00
2	Install SCADA Equipment	1	LS	$15,000.00	$15,000.00
				Subtotal	$45,000.00
				Contingencies	$4,500.00
				Total Construction Cost	$49,500.00
				Legal and Administration Cost	$1,000.00
				Design Engineering	$8,200.00
				Bidding Phase Engineering	$6,000.00
				Construction Engineering	$9,800.00
				Total Project Cost	$74,500.00

Miller Storm Sewer
Phase I
Spot Repairs and Upstream Improvements to Central Drainage

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$65,000.00	$65,000.00
2	Pulverize and Salvage Existing Asphalt	7,670 SY	$3.50	$26,845.00
3	Remove and Dispose Existing Structures	10 EA	$400.00	$4,000.00
4	Remove Storm Sewer Pipe (12"-24")	2,050 LF	$25.00	$51,250.00
5	Storm Sewer Inlet	22 EA	$3,000.00	$66,000.00
6	Storm Sewer Inlet - Spot Repairs	16 EA	$3,500.00	$56,000.00
7	Connect to Existing Storm Pipe - Spot Repairs	10 EA	$1,500.00	$15,000.00
8	New Storm Sewer Casting	2 EA	$500.00	$1,000.00
9	Storm Sewer Manhole	12 EA	$5,000.00	$60,000.00
10	Storm Sewer Pipe - Spot Repairs	70 LF	$75.00	$5,250.00
11	12" RCP Storm Sewer Pipe	422 LF	$50.00	$21,100.00
12	24" RCP Storm Sewer Pipe	700 LF	$80.00	$56,000.00
13	30" RCP Storm Sewer Pipe	1,350 LF	$90.00	$121,500.00
14	Asphalt Surfacing	200 TN	$110.00	$22,000.00
15	Double Blotter Coat	7,670 SY	$8.00	$61,360.00
16	Gravel Base Course and Surfacing	3,650 TN	$20.00	$73,000.00
17	Topsoil, Seed, Fertilizer & Mulch	4,600 SY	$1.50	$6,900.00
18	Traffic Control	1 LS	$2,500.00	$2,500.00
19	Erosion Control	1 LS	$7,000.00	$7,000.00
20	Incidental Construction	1 LS	$48,000.00	$48,000.00
			Subtotal	$769,705.00
			Contingencies (12%)	$93,295.00
			Construction Total	$863,000.00
			Design Engineering	$57,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$86,000.00
			Administration and Legal	$26,000.00
			Total Project Cost	$1,037,000.00

Legal: $ 49,000
Bidding: $ 119,000
Proj. Inspection: $ 164,000
Const. & Improvements: $ 1,450,555
Contingencies: $ 175,445
1,958,000

Miller Storm Sewer
Phase I
60-inch Storm Sewer Crossing North Highway

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$54,000.00	$54,000.00
2	Pulverize and Salvage Existing Asphalt	1,600 SY	$3.50	$5,600.00
3	Remove and Dispose Existing Structures	5 EA	$400.00	$2,000.00
4	Remove Storm Sewer Pipe (27"-42")	1,250 LF	$35.00	$43,750.00
5	10' x 5' Box	6 EA	$7,500.00	$45,000.00
6	24" RCP Storm Sewer Pipe	550 LF	$80.00	$44,000.00
7	60" RCP Storm Sewer Pipe	1,250 LF	$250.00	$312,500.00
8	60" RCP Flared End Section	1 EA	$1,900.00	$1,900.00
9	Bore 60" RCP Storm Pipe	120 LF	$650.00	$78,000.00
10	Double Blotter Coat	1,600 SY	$8.00	$12,800.00
11	Gravel Base Course and Surfacing	1,800 TN	$20.00	$36,000.00
12	Topsoil, Seed, Fertilizer & Mulch	5,200 SY	$1.50	$7,800.00
13	Traffic Control	1 LS	$1,500.00	$1,500.00
14	Erosion Control	1 LS	$6,000.00	$6,000.00
15	Incidental Construction	1 LS	$30,000.00	$30,000.00
			Subtotal	$680,850.00
			Contingencies (12%)	$82,150.00
			Construction Total	$763,000.00
			Design Engineering	$52,000.00
			Bidding and Contract Documents	$5,000.00
			Construction Engineering	$78,000.00
			Administration and Legal	$23,000.00
			Total Project Cost	$921,000.00

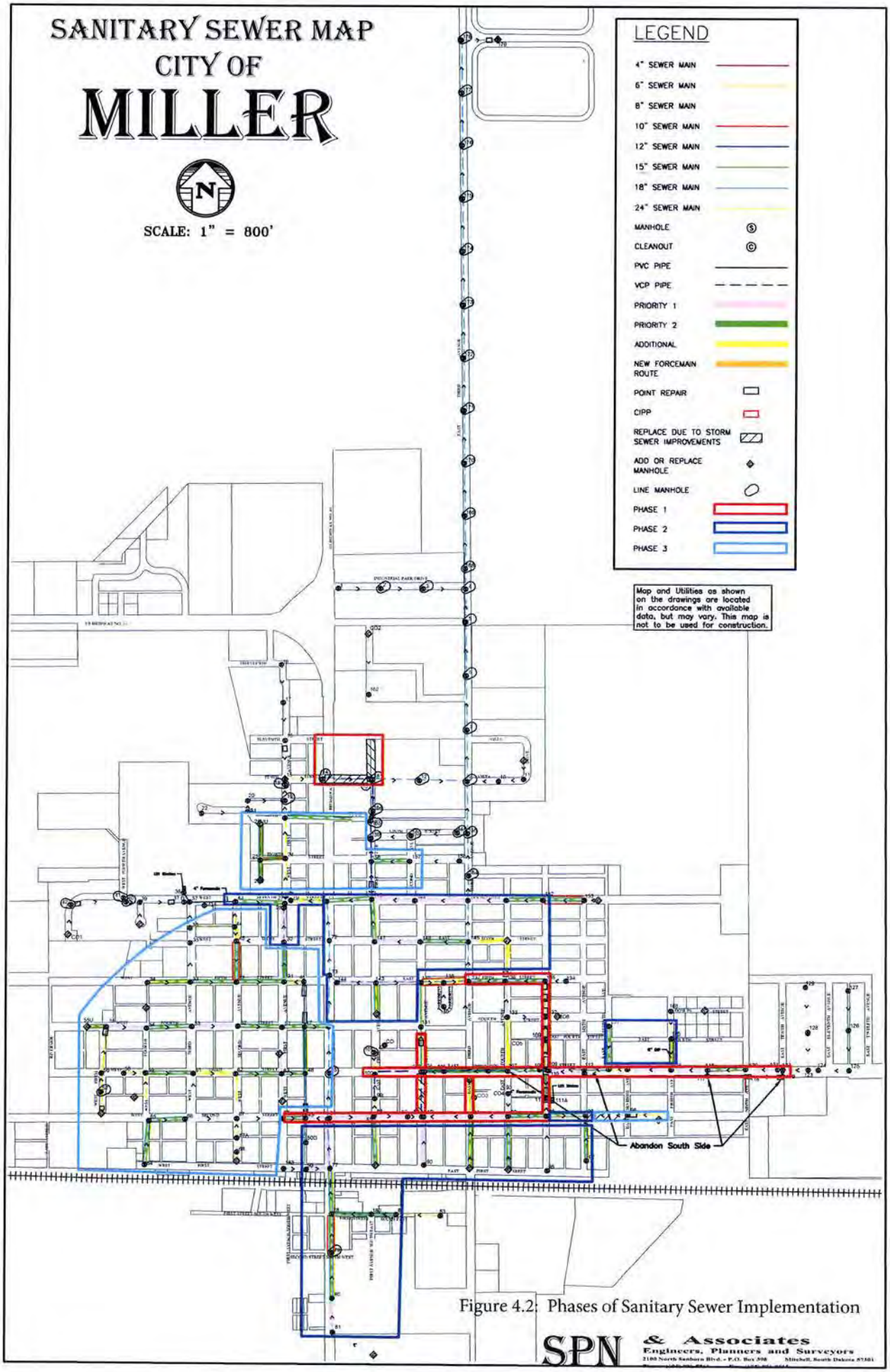
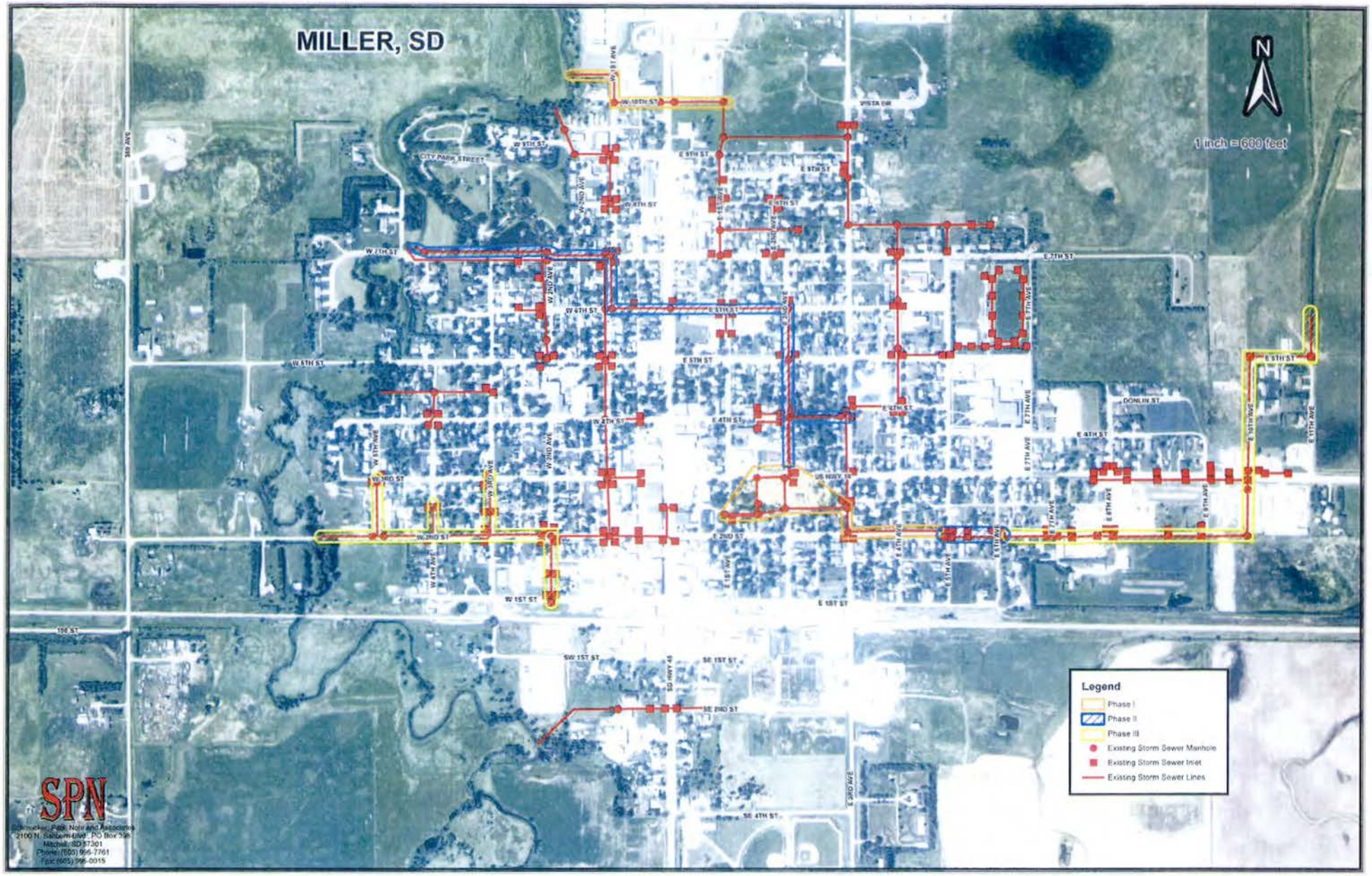


Figure 4.2: Phases of Sanitary Sewer Implementation


MILLER, SD
N
1 inch = 600 feet
Legend
Phase I
Phase II
Phase III
Existing Storm Sewer Manhole
Existing Storm Sewer Inlet
Existing Storm Sewer Lines
SPN
Schmeckle, Park, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 398
Mitchell, SD 57301
Phone: (605) 996-7761
Fax: (605) 996-0015

AMORTIZATION SCHEDULE

Projected Amortization Schedule for City of Miller
Consolidated Water Facilities Construction Loan: 2014L-402
Loan Amortized at 3.0% for 20 years

Closed Date: March 25, 2014 **Loan Amount:** $242,000.00

Schedule A
Amounts Advanced

Date	Advanced	Accrued Interest
06/01/2014	$45,000.00	$1,237.50
08/01/2014	$45,000.00	$1,012.50
12/01/2014	$65,000.00	$812.50
02/01/2015	$32,000.00	$240.00
04/26/2015	$55,000.00	$22.92
	$242,000.00	$3,325.42

Schedule B
Amortization Schedule

Date	Payment Number	Principal Beg. Balance	Payment Amount	Principal	Interest	Principal Ending Balance
11/01/2015	1	$242,000.00	$11,414.78	$4,459.36	$6,955.42	$237,540.64 **
05/01/2016	2	$237,540.64	$8,089.36	$4,526.25	$3,563.11	$233,014.39
11/01/2016	3	$233,014.39	$8,090.36	$4,595.14	$3,495.22	$228,419.25
05/01/2017	4	$228,419.25	$8,091.36	$4,665.07	$3,426.29	$223,754.18
11/01/2017	5	$223,754.18	$8,092.36	$4,736.05	$3,356.31	$219,018.13
05/01/2018	6	$219,018.13	$8,093.36	$4,808.09	$3,285.27	$214,210.04
11/01/2018	7	$214,210.04	$8,094.36	$4,881.21	$3,213.15	$209,328.83
05/01/2019	8	$209,328.83	$8,095.36	$4,955.43	$3,139.93	$204,373.40
11/01/2019	9	$204,373.40	$8,096.36	$5,030.76	$3,065.60	$199,342.64
05/01/2020	10	$199,342.64	$8,097.36	$5,107.22	$2,990.14	$194,235.42
11/01/2020	11	$194,235.42	$8,098.36	$5,184.83	$2,913.53	$189,050.59
05/01/2021	12	$189,050.59	$8,099.36	$5,263.60	$2,835.76	$183,786.99
11/01/2021	13	$183,786.99	$8,100.36	$5,343.56	$2,756.80	$178,443.43
05/01/2022	14	$178,443.43	$8,101.36	$5,424.71	$2,676.65	$173,018.72
11/01/2022	15	$173,018.72	$8,102.36	$5,507.08	$2,595.28	$167,511.64
05/01/2023	16	$167,511.64	$8,103.36	$5,590.69	$2,512.67	$161,920.95
11/01/2023	17	$161,920.95	$8,104.36	$5,675.55	$2,428.81	$156,245.40
05/01/2024	18	$156,245.40	$8,105.36	$5,761.68	$2,343.68	$150,483.72
11/01/2024	19	$150,483.72	$8,106.36	$5,849.10	$2,257.26	$144,634.62
05/01/2025	20	$144,634.62	$8,107.36	$5,937.84	$2,169.52	$138,696.78
11/01/2025	21	$138,696.78	$8,108.36	$6,027.91	$2,080.45	$132,668.87
05/01/2026	22	$132,668.87	$8,109.36	$6,119.33	$1,990.03	$126,549.54
11/01/2026	23	$126,549.54	$8,110.36	$6,212.12	$1,898.24	$120,337.42
05/01/2027	24	$120,337.42	$8,111.36	$6,306.30	$1,805.06	$114,031.12
11/01/2027	25	$114,031.12	$8,112.36	$6,401.89	$1,710.47	$107,629.23
05/01/2028	26	$107,629.23	$8,113.36	$6,498.92	$1,614.44	$101,130.31
11/01/2028	27	$101,130.31	$8,114.36	$6,597.41	$1,516.95	$94,532.90
05/01/2029	28	$94,532.90	$8,115.36	$6,697.37	$1,417.99	$87,835.53
11/01/2029	29	$87,835.53	$8,116.36	$6,798.83	$1,317.53	$81,036.70
05/01/2030	30	$81,036.70	$8,117.36	$6,901.81	$1,215.55	$74,134.89
11/01/2030	31	$74,134.89	$8,118.36	$7,006.34	$1,112.02	$67,128.55
05/01/2031	32	$67,128.55	$8,119.36	$7,112.43	$1,006.93	$60,016.12
11/01/2031	33	$60,016.12	$8,120.36	$7,220.12	$900.24	$52,796.00
05/01/2032	34	$52,796.00	$8,121.36	$7,329.42	$791.94	$45,466.58
11/01/2032	35	$45,466.58	$8,122.36	$7,440.36	$682.00	$38,026.22
05/01/2033	36	$38,026.22	$8,123.36	$7,552.97	$570.39	$30,473.25
11/01/2033	37	$30,473.25	$8,124.36	$7,667.26	$457.10	$22,805.99
05/01/2034	38	$22,805.99	$8,125.36	$7,783.27	$342.09	$15,022.72
11/01/2034	39	$15,022.72	$8,126.36	$7,901.02	$225.34	$7,121.70
05/01/2035	40	$7,121.70	$7,228.53	$7,121.70	$106.83	$0.00
	Total		$326,741.99	$242,000.00	$84,741.99	

**First Payment Includes accrued interest of $3,325.42

326,741.99 ÷ 20 ⇒ 16,337 Average Annual Payment

AMORTIZATION SCHEDULE
(Continued)

2019 TOTALS:		**25,849.12**	**556.98**	**25,292.14**	
38	01-15-2020	6,462.28	40.05	6,422.23	0.00
2020 TOTALS:		**6,462.28**	**40.05**	**6,422.23**	
TOTALS:		**245,566.64**	**27,586.07**	**217,980.57**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

LASER PRO Lending, Ver. 5.52.00.006 Copr. Harland Financial Solutions, Inc. 1997, 2010. All Rights Reserved. - SD TR-27650 PR-4

11/24/2009

City of Miller

Pmnt #	Start of Period (Issue Date)	Interest Rate	Scheduled Balance	Actual Balance	Scheduled Payment	Interest Portion	Principal Portion	Issuer Additional Principal
62	12/24/16	3.5000%	711,379.60	711,224.42	(3,038.00)	(2,074.40)	(963.60)	
63	01/24/17	3.5000%	710,418.79	710,260.83	(3,038.00)	(2,071.59)	(966.41)	
64	02/24/17	3.5000%	709,455.17	709,294.42	(3,038.00)	(2,068.78)	(969.22)	
65	03/24/17	3.5000%	708,488.75	708,325.19	(3,038.00)	(2,065.95)	(972.05)	
66	04/24/17	3.5000%	707,519.50	707,353.14	(3,038.00)	(2,063.11)	(974.89)	
67	05/24/17	3.5000%	706,547.43	706,378.26	(3,038.00)	(2,060.27)	(977.73)	
68	06/24/17	3.5000%	705,572.52	705,400.53	(3,038.00)	(2,057.42)	(980.58)	
69	07/24/17	3.5000%	704,594.76	704,419.94	(3,038.00)	(2,054.56)	(983.44)	
70	08/24/17	3.5000%	703,614.16	703,436.50	(3,038.00)	(2,051.69)	(986.31)	
71	09/24/17	3.5000%	702,630.70	702,450.19	(3,038.00)	(2,048.81)	(989.19)	
72	10/24/17	3.5000%	701,644.36	701,461.01	(3,038.00)	(2,045.93)	(992.07)	
73	11/24/17	3.5000%	700,655.16	700,468.93	(3,038.00)	(2,043.03)	(994.97)	
74	12/24/17	3.5000%	699,663.06	699,473.97	(3,038.00)	(2,040.13)	(997.87)	
75	01/24/18	3.5000%	698,668.07	698,476.10	(3,038.00)	(2,037.22)	(1,000.78)	
76	02/24/18	3.5000%	697,670.18	697,475.32	(3,038.00)	(2,034.30)	(1,003.70)	
77	03/24/18	3.5000%	696,669.38	696,471.63	(3,038.00)	(2,031.38)	(1,006.62)	
78	04/24/18	3.5000%	695,665.66	695,465.00	(3,038.00)	(2,028.44)	(1,009.56)	
79	05/24/18	3.5000%	694,659.02	694,455.44	(3,038.00)	(2,025.50)	(1,012.51)	
80	06/24/18	3.5000%	693,649.43	693,442.94	(3,038.00)	(2,022.54)	(1,015.46)	
81	07/24/18	3.5000%	692,636.91	692,427.48	(3,038.00)	(2,019.58)	(1,018.42)	
82	08/24/18	3.5000%	691,621.42	691,409.06	(3,038.00)	(2,016.61)	(1,021.39)	
83	09/24/18	3.5000%	690,602.98	690,387.67	(3,038.00)	(2,013.63)	(1,024.37)	
84	10/24/18	3.5000%	689,581.57	689,363.30	(3,038.00)	(2,010.64)	(1,027.36)	
85	11/24/18	3.5000%	688,557.18	688,335.94	(3,038.00)	(2,007.65)	(1,030.35)	
86	12/24/18	3.5000%	687,529.80	687,305.59	(3,038.00)	(2,004.64)	(1,033.36)	
87	01/24/19	3.5000%	686,499.42	686,272.23	(3,038.00)	(2,001.63)	(1,036.37)	
88	02/24/19	3.5000%	685,466.04	685,235.86	(3,038.00)	(1,998.60)	(1,039.40)	
89	03/24/19	3.5000%	684,429.64	684,196.46	(3,038.00)	(1,995.57)	(1,042.43)	
90	04/24/19	3.5000%	683,390.22	683,154.03	(3,038.00)	(1,992.53)	(1,045.47)	
91	05/24/19	3.5000%	682,347.77	682,108.57	(3,038.00)	(1,989.48)	(1,048.52)	
92	06/24/19	3.5000%	681,302.28	681,060.05	(3,038.00)	(1,986.43)	(1,051.57)	
93	07/24/19	3.5000%	680,253.74	680,008.47	(3,038.00)	(1,983.36)	(1,054.64)	
94	08/24/19	3.5000%	679,202.14	678,953.83	(3,038.00)	(1,980.28)	(1,057.72)	
95	09/24/19	3.5000%	678,147.48	677,896.11	(3,038.00)	(1,977.20)	(1,060.80)	
96	10/24/19	3.5000%	677,089.74	676,835.31	(3,038.00)	(1,974.10)	(1,063.90)	
97	11/24/19	3.5000%	676,028.91	675,771.41	(3,038.00)	(1,971.00)	(1,067.00)	
98	12/24/19	3.5000%	674,964.99	674,704.41	(3,038.00)	(1,967.89)	(1,070.11)	
99	01/24/20	3.5000%	673,897.96	673,634.30	(3,038.00)	(1,964.77)	(1,073.23)	
100	02/24/20	3.5000%	672,827.83	672,561.07	(3,038.00)	(1,961.64)	(1,076.36)	
101	03/24/20	3.5000%	671,754.57	671,484.71	(3,038.00)	(1,958.50)	(1,079.50)	
102	04/24/20	3.5000%	670,678.18	670,405.20	(3,038.00)	(1,955.35)	(1,082.65)	
103	05/24/20	3.5000%	669,598.65	669,322.55	(3,038.00)	(1,952.19)	(1,085.81)	
104	06/24/20	3.5000%	668,515.98	668,236.74	(3,038.00)	(1,949.02)	(1,088.98)	
105	07/24/20	3.5000%	667,430.15	667,147.77	(3,038.00)	(1,945.85)	(1,092.15)	
106	08/24/20	3.5000%	666,341.14	666,055.61	(3,038.00)	(1,942.66)	(1,095.34)	
107	09/24/20	3.5000%	665,248.97	664,960.28	(3,038.00)	(1,939.47)	(1,098.53)	
108	10/24/20	3.5000%	664,153.61	663,861.74	(3,038.00)	(1,936.26)	(1,101.74)	
109	11/24/20	3.5000%	663,055.05	662,760.01	(3,038.00)	(1,933.05)	(1,104.95)	
110	12/24/20	3.5000%	661,953.29	661,655.06	(3,038.00)	(1,929.83)	(1,108.17)	
111	01/24/21	3.5000%	660,848.31	660,546.88	(3,038.00)	(1,926.60)	(1,111.40)	
112	02/24/21	3.5000%	659,740.11	659,435.48	(3,038.00)	(1,923.35)	(1,114.65)	
113	03/24/21	3.5000%	658,628.68	658,320.83	(3,038.00)	(1,920.10)	(1,117.90)	
114	04/24/21	3.5000%	657,514.01	657,202.94	(3,038.00)	(1,916.84)	(1,121.16)	
115	05/24/21	3.5000%	656,396.09	656,081.78	(3,038.00)	(1,913.57)	(1,124.43)	
116	06/24/21	3.5000%	655,274.91	654,957.35	(3,038.00)	(1,910.29)	(1,127.71)	
117	07/24/21	3.5000%	654,150.45	653,829.64	(3,038.00)	(1,907.00)	(1,131.00)	
118	08/24/21	3.5000%	653,022.72	652,698.64	(3,038.00)	(1,903.70)	(1,134.30)	
119	09/24/21	3.5000%	651,891.70	651,564.35	(3,038.00)	(1,900.40)	(1,137.60)	
120	10/24/21	3.5000%	650,757.38	650,426.74	(3,038.00)	(1,897.08)	(1,140.92)	
121	11/24/21	3.5000%	649,619.75	649,285.82	(3,038.00)	(1,893.75)	(1,144.25)	
122	12/24/21	3.5000%	648,478.80	648,141.57	(3,038.00)	(1,890.41)	(1,147.59)	

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City of Miller

Pmnt #	Start of Period (Issue Date)	Interest Rate	Scheduled Balance	Actual Balance	Scheduled Payment	Interest Portion	Principal Portion	Additional Principal (Issuer)
184	02/24/27	3.5000%	570,838.03	570,276.10	(3,038.00)	(1,663.31)	(1,374.69)	
185	03/24/27	3.5000%	569,467.30	568,901.41	(3,038.00)	(1,659.30)	(1,378.70)	
186	04/24/27	3.5000%	568,092.58	567,522.70	(3,038.00)	(1,655.27)	(1,382.73)	
187	05/24/27	3.5000%	566,713.84	566,139.98	(3,038.00)	(1,651.24)	(1,386.76)	
188	06/24/27	3.5000%	565,331.08	564,753.22	(3,038.00)	(1,647.20)	(1,390.80)	
189	07/24/27	3.5000%	563,944.29	563,362.41	(3,038.00)	(1,643.14)	(1,394.86)	
190	08/24/27	3.5000%	562,553.46	561,967.55	(3,038.00)	(1,639.07)	(1,398.93)	
191	09/24/27	3.5000%	561,158.57	560,568.63	(3,038.00)	(1,634.99)	(1,403.01)	
192	10/24/27	3.5000%	559,759.61	559,165.62	(3,038.00)	(1,630.90)	(1,407.10)	
193	11/24/27	3.5000%	558,356.57	557,758.52	(3,038.00)	(1,626.80)	(1,411.20)	
194	12/24/27	3.5000%	556,949.44	556,347.31	(3,038.00)	(1,622.68)	(1,415.32)	
195	01/24/28	3.5000%	555,538.20	554,931.99	(3,038.00)	(1,618.55)	(1,419.45)	
196	02/24/28	3.5000%	554,122.85	553,512.55	(3,038.00)	(1,614.41)	(1,423.59)	
197	03/24/28	3.5000%	552,703.37	552,088.96	(3,038.00)	(1,610.26)	(1,427.74)	
198	04/24/28	3.5000%	551,279.75	550,661.22	(3,038.00)	(1,606.10)	(1,431.90)	
199	05/24/28	3.5000%	549,851.98	549,229.31	(3,038.00)	(1,601.92)	(1,436.08)	
200	06/24/28	3.5000%	548,420.04	547,793.23	(3,038.00)	(1,597.73)	(1,440.27)	
201	07/24/28	3.5000%	546,983.93	546,352.96	(3,038.00)	(1,593.53)	(1,444.47)	
202	08/24/28	3.5000%	545,543.62	544,908.49	(3,038.00)	(1,589.32)	(1,448.68)	
203	09/24/28	3.5000%	544,099.12	543,459.81	(3,038.00)	(1,585.09)	(1,452.91)	
204	10/24/28	3.5000%	542,650.41	542,006.90	(3,038.00)	(1,580.85)	(1,457.15)	
205	11/24/28	3.5000%	541,197.46	540,549.75	(3,038.00)	(1,576.60)	(1,461.40)	
206	12/24/28	3.5000%	539,740.28	539,088.35	(3,038.00)	(1,572.34)	(1,465.66)	
207	01/24/29	3.5000%	538,278.86	537,622.70	(3,038.00)	(1,568.07)	(1,469.93)	
208	02/24/29	3.5000%	536,813.16	536,152.76	(3,038.00)	(1,563.78)	(1,474.22)	
209	03/24/29	3.5000%	535,343.20	534,678.54	(3,038.00)	(1,559.48)	(1,478.52)	
210	04/24/29	3.5000%	533,868.94	533,200.02	(3,038.00)	(1,555.17)	(1,482.83)	
211	05/24/29	3.5000%	532,390.39	531,717.19	(3,038.00)	(1,550.84)	(1,487.16)	
212	06/24/29	3.5000%	530,907.52	530,230.03	(3,038.00)	(1,546.50)	(1,491.50)	
213	07/24/29	3.5000%	529,420.33	528,738.53	(3,038.00)	(1,542.15)	(1,495.85)	
214	08/24/29	3.5000%	527,928.80	527,242.69	(3,038.00)	(1,537.79)	(1,500.21)	
215	09/24/29	3.5000%	526,432.92	525,742.48	(3,038.00)	(1,533.42)	(1,504.58)	
216	10/24/29	3.5000%	524,932.68	524,237.89	(3,038.00)	(1,529.03)	(1,508.97)	
217	11/24/29	3.5000%	523,428.06	522,728.92	(3,038.00)	(1,524.63)	(1,513.37)	
218	12/24/29	3.5000%	521,919.05	521,215.55	(3,038.00)	(1,520.21)	(1,517.79)	
219	01/24/30	3.5000%	520,405.65	519,697.76	(3,038.00)	(1,515.79)	(1,522.21)	
220	02/24/30	3.5000%	518,887.82	518,175.54	(3,038.00)	(1,511.35)	(1,526.65)	
221	03/24/30	3.5000%	517,365.57	516,648.89	(3,038.00)	(1,506.89)	(1,531.11)	
222	04/24/30	3.5000%	515,838.89	515,117.78	(3,038.00)	(1,502.43)	(1,535.57)	
223	05/24/30	3.5000%	514,307.74	513,582.21	(3,038.00)	(1,497.95)	(1,540.05)	
224	06/24/30	3.5000%	512,772.14	512,042.16	(3,038.00)	(1,493.46)	(1,544.54)	
225	07/24/30	3.5000%	511,232.05	510,497.61	(3,038.00)	(1,488.95)	(1,549.05)	
226	08/24/30	3.5000%	509,687.47	508,948.56	(3,038.00)	(1,484.43)	(1,553.57)	
227	09/24/30	3.5000%	508,138.39	507,395.00	(3,038.00)	(1,479.90)	(1,558.10)	
228	10/24/30	3.5000%	506,584.79	505,836.90	(3,038.00)	(1,475.36)	(1,562.64)	
229	11/24/30	3.5000%	505,026.65	504,274.26	(3,038.00)	(1,470.80)	(1,567.20)	
230	12/24/30	3.5000%	503,463.98	502,707.06	(3,038.00)	(1,466.23)	(1,571.77)	
231	01/24/31	3.5000%	501,896.74	501,135.29	(3,038.00)	(1,461.64)	(1,576.36)	
232	02/24/31	3.5000%	500,324.93	499,558.93	(3,038.00)	(1,457.05)	(1,580.95)	
233	03/24/31	3.5000%	498,748.54	497,977.98	(3,038.00)	(1,452.44)	(1,585.56)	
234	04/24/31	3.5000%	497,167.55	496,392.41	(3,038.00)	(1,447.81)	(1,590.19)	
235	05/24/31	3.5000%	495,581.95	494,802.22	(3,038.00)	(1,443.17)	(1,594.83)	
236	06/24/31	3.5000%	493,991.73	493,207.40	(3,038.00)	(1,438.52)	(1,599.48)	
237	07/24/31	3.5000%	492,396.87	491,607.92	(3,038.00)	(1,433.86)	(1,604.14)	
238	08/24/31	3.5000%	490,797.35	490,003.78	(3,038.00)	(1,429.18)	(1,608.82)	
239	09/24/31	3.5000%	489,193.17	488,394.95	(3,038.00)	(1,424.49)	(1,613.51)	
240	10/24/31	3.5000%	487,584.31	486,781.44	(3,038.00)	(1,419.78)	(1,618.22)	
241	11/24/31	3.5000%	485,970.76	485,163.22	(3,038.00)	(1,415.06)	(1,622.94)	
242	12/24/31	3.5000%	484,352.51	483,540.28	(3,038.00)	(1,410.33)	(1,627.67)	
243	01/24/32	3.5000%	482,729.53	481,912.60	(3,038.00)	(1,405.58)	(1,632.42)	
244	02/24/32	3.5000%	481,101.82	480,280.18	(3,038.00)	(1,400.82)	(1,637.18)	

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City of Miller

Pmnt #	Start of Period (Issue Date)	Interest Rate (Issue Date)	Scheduled Balance (Issue Date)	Actual Balance	Scheduled Payment	Interest Portion	Principal Portion	Additional Principal (Issuer)
306	04/24/37	3.5000%	370,337.12	369,194.92	(3,038.00)	(1,076.82)	(1,961.18)	
307	05/24/37	3.5000%	368,381.60	367,233.74	(3,038.00)	(1,071.10)	(1,966.90)	
308	06/24/37	3.5000%	366,420.37	365,266.84	(3,038.00)	(1,065.36)	(1,972.64)	
309	07/24/37	3.5000%	364,453.43	363,294.20	(3,038.00)	(1,059.61)	(1,978.39)	
310	08/24/37	3.5000%	362,480.75	361,315.80	(3,038.00)	(1,053.84)	(1,984.16)	
311	09/24/37	3.5000%	360,502.31	359,331.64	(3,038.00)	(1,048.05)	(1,989.95)	
312	10/24/37	3.5000%	358,518.10	357,341.69	(3,038.00)	(1,042.25)	(1,995.75)	
313	11/24/37	3.5000%	356,528.11	355,345.94	(3,038.00)	(1,036.43)	(2,001.57)	
314	12/24/37	3.5000%	354,532.31	353,344.37	(3,038.00)	(1,030.59)	(2,007.41)	
315	01/24/38	3.5000%	352,530.69	351,336.95	(3,038.00)	(1,024.73)	(2,013.27)	
316	02/24/38	3.5000%	350,523.23	349,323.69	(3,038.00)	(1,018.86)	(2,019.14)	
317	03/24/38	3.5000%	348,509.92	347,304.55	(3,038.00)	(1,012.97)	(2,025.03)	
318	04/24/38	3.5000%	346,490.74	345,279.52	(3,038.00)	(1,007.07)	(2,030.93)	
319	05/24/38	3.5000%	344,465.66	343,248.58	(3,038.00)	(1,001.14)	(2,036.86)	
320	06/24/38	3.5000%	342,434.68	341,211.73	(3,038.00)	(995.20)	(2,042.80)	
321	07/24/38	3.5000%	340,397.78	339,168.93	(3,038.00)	(989.24)	(2,048.76)	
322	08/24/38	3.5000%	338,354.93	337,120.17	(3,038.00)	(983.27)	(2,054.73)	
323	09/24/38	3.5000%	336,306.13	335,065.44	(3,038.00)	(977.27)	(2,060.73)	
324	10/24/38	3.5000%	334,251.35	333,004.71	(3,038.00)	(971.26)	(2,066.74)	
325	11/24/38	3.5000%	332,190.58	330,937.97	(3,038.00)	(965.24)	(2,072.76)	
326	12/24/38	3.5000%	330,123.80	328,865.21	(3,038.00)	(959.19)	(2,078.81)	
327	01/24/39	3.5000%	328,050.99	326,786.40	(3,038.00)	(953.13)	(2,084.87)	
328	02/24/39	3.5000%	325,972.13	324,701.53	(3,038.00)	(947.05)	(2,090.95)	
329	03/24/39	3.5000%	323,887.21	322,610.57	(3,038.00)	(940.95)	(2,097.05)	
330	04/24/39	3.5000%	321,796.21	320,513.52	(3,038.00)	(934.83)	(2,103.17)	
331	05/24/39	3.5000%	319,699.11	318,410.35	(3,038.00)	(928.70)	(2,109.30)	
332	06/24/39	3.5000%	317,595.89	316,301.05	(3,038.00)	(922.54)	(2,115.46)	
333	07/24/39	3.5000%	315,486.54	314,185.59	(3,038.00)	(916.37)	(2,121.63)	
334	08/24/39	3.5000%	313,371.04	312,063.97	(3,038.00)	(910.19)	(2,127.81)	
335	09/24/39	3.5000%	311,249.37	309,936.15	(3,038.00)	(903.98)	(2,134.02)	
336	10/24/39	3.5000%	309,121.50	307,802.14	(3,038.00)	(897.76)	(2,140.24)	
337	11/24/39	3.5000%	306,987.44	305,661.89	(3,038.00)	(891.51)	(2,146.49)	
338	12/24/39	3.5000%	304,847.15	303,515.41	(3,038.00)	(885.25)	(2,152.75)	
339	01/24/40	3.5000%	302,700.61	301,362.66	(3,038.00)	(878.97)	(2,159.03)	
340	02/24/40	3.5000%	300,547.82	299,203.63	(3,038.00)	(872.68)	(2,165.32)	
341	03/24/40	3.5000%	298,388.74	297,038.31	(3,038.00)	(866.36)	(2,171.64)	
342	04/24/40	3.5000%	296,223.37	294,866.67	(3,038.00)	(860.03)	(2,177.97)	
343	05/24/40	3.5000%	294,051.68	292,688.70	(3,038.00)	(853.68)	(2,184.32)	
344	06/24/40	3.5000%	291,873.66	290,504.38	(3,038.00)	(847.30)	(2,190.70)	
345	07/24/40	3.5000%	289,689.29	288,313.68	(3,038.00)	(840.91)	(2,197.09)	
346	08/24/40	3.5000%	287,498.54	286,116.59	(3,038.00)	(834.51)	(2,203.49)	
347	09/24/40	3.5000%	285,301.41	283,913.10	(3,038.00)	(828.08)	(2,209.92)	
348	10/24/40	3.5000%	283,097.87	281,703.18	(3,038.00)	(821.63)	(2,216.37)	
349	11/24/40	3.5000%	280,887.90	279,486.82	(3,038.00)	(815.17)	(2,222.83)	
350	12/24/40	3.5000%	278,671.48	277,263.99	(3,038.00)	(808.69)	(2,229.31)	
351	01/24/41	3.5000%	276,448.60	275,034.67	(3,038.00)	(802.18)	(2,235.82)	
352	02/24/41	3.5000%	274,219.24	272,798.86	(3,038.00)	(795.66)	(2,242.34)	
353	03/24/41	3.5000%	271,983.37	270,556.52	(3,038.00)	(789.12)	(2,248.88)	
354	04/24/41	3.5000%	269,740.98	268,307.64	(3,038.00)	(782.56)	(2,255.44)	
355	05/24/41	3.5000%	267,492.06	266,052.21	(3,038.00)	(775.99)	(2,262.01)	
356	06/24/41	3.5000%	265,236.57	263,790.19	(3,038.00)	(769.39)	(2,268.61)	
357	07/24/41	3.5000%	262,974.51	261,521.58	(3,038.00)	(762.77)	(2,275.23)	
358	08/24/41	3.5000%	260,705.84	259,246.35	(3,038.00)	(756.14)	(2,281.86)	
359	09/24/41	3.5000%	258,430.56	256,964.49	(3,038.00)	(749.48)	(2,288.52)	
360	10/24/41	3.5000%	256,148.65	254,675.97	(3,038.00)	(742.80)	(2,295.20)	
361	11/24/41	3.5000%	253,860.07	252,380.77	(3,038.00)	(736.11)	(2,301.89)	
362	12/24/41	3.5000%	251,564.83	250,078.88	(3,038.00)	(729.40)	(2,308.60)	
363	01/24/42	3.5000%	249,262.89	247,770.28	(3,038.00)	(722.66)	(2,315.34)	
364	02/24/42	3.5000%	246,954.23	245,454.94	(3,038.00)	(715.91)	(2,322.09)	
365	03/24/42	3.5000%	244,638.84	243,132.85	(3,038.00)	(709.14)	(2,328.86)	
366	04/24/42	3.5000%	242,316.70	240,803.99	(3,038.00)	(702.35)	(2,335.66)	

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City of Miller

Pmnt #	Start of Period (Issue Date)	Interest Rate	Scheduled Balance	Actual Balance	Scheduled Payment	Interest Portion	Principal Portion	Additional Principal (Issuer)
428	06/24/47	3.5000%	84,296.40	82,326.36	(3,038.00)	(240.12)	(2,797.88)	
429	07/24/47	3.5000%	81,506.59	79,528.48	(3,038.00)	(231.96)	(2,806.04)	
430	08/24/47	3.5000%	78,708.65	76,722.43	(3,038.00)	(223.77)	(2,814.23)	
431	09/24/47	3.5000%	75,902.54	73,908.21	(3,038.00)	(215.57)	(2,822.43)	
432	10/24/47	3.5000%	73,088.25	71,085.77	(3,038.00)	(207.33)	(2,830.67)	
433	11/24/47	3.5000%	70,265.76	68,255.11	(3,038.00)	(199.08)	(2,838.92)	
434	12/24/47	3.5000%	67,435.03	65,416.19	(3,038.00)	(190.80)	(2,847.20)	
435	01/24/48	3.5000%	64,596.04	62,568.98	(3,038.00)	(182.49)	(2,855.51)	
436	02/24/48	3.5000%	61,748.77	59,713.48	(3,038.00)	(174.16)	(2,863.84)	
437	03/24/48	3.5000%	58,893.20	56,849.64	(3,038.00)	(165.81)	(2,872.19)	
438	04/24/48	3.5000%	56,029.30	53,977.45	(3,038.00)	(157.43)	(2,880.57)	
439	05/24/48	3.5000%	53,157.05	51,096.89	(3,038.00)	(149.03)	(2,888.97)	
440	06/24/48	3.5000%	50,276.42	48,207.92	(3,038.00)	(140.61)	(2,897.39)	
441	07/24/48	3.5000%	47,387.38	45,310.52	(3,038.00)	(132.16)	(2,905.84)	
442	08/24/48	3.5000%	44,489.93	42,404.68	(3,038.00)	(123.68)	(2,914.32)	
443	09/24/48	3.5000%	41,584.02	39,490.36	(3,038.00)	(115.18)	(2,922.82)	
444	10/24/48	3.5000%	38,669.63	36,567.54	(3,038.00)	(106.66)	(2,931.34)	
445	11/24/48	3.5000%	35,746.75	33,636.20	(3,038.00)	(98.11)	(2,939.89)	
446	12/24/48	3.5000%	32,815.34	30,696.30	(3,038.00)	(89.53)	(2,948.47)	
447	01/24/49	3.5000%	29,875.37	27,747.83	(3,038.00)	(80.93)	(2,957.07)	
448	02/24/49	3.5000%	26,926.84	24,790.76	(3,038.00)	(72.31)	(2,965.69)	
449	03/24/49	3.5000%	23,969.70	21,825.07	(3,038.00)	(63.66)	(2,974.34)	
450	04/24/49	3.5000%	21,003.94	18,850.73	(3,038.00)	(54.98)	(2,983.02)	
451	05/24/49	3.5000%	18,029.53	15,867.71	(3,038.00)	(46.28)	(2,991.72)	
452	06/24/49	3.5000%	15,046.45	12,875.99	(3,038.00)	(37.56)	(3,000.45)	
453	07/24/49	3.5000%	12,054.66	9,875.54	(3,038.00)	(28.80)	(3,009.20)	
454	08/24/49	3.5000%	9,054.15	6,866.35	(3,038.00)	(20.03)	(3,017.97)	
455	09/49	3.5000%	6,044.88	3,848.37	(3,038.00)	(11.22)	(3,026.78)	
456	10/49	3.5000%	3,026.84	821.60	(823.99)	(2.40)	(821.60)	
457			-	-	-	-	-	
458			-	-	-	-	-	
459			-	-	-	-	-	
460			-	-	-	-	-	
461			-	-	-	-	-	
462			-	-	-	-	-	
463			-	-	-	-	-	
464			-	-	-	-	-	
465			-	-	-	-	-	
466			-	-	-	-	-	
467			-	-	-	-	-	
468			-	-	-	-	-	
469			-	-	-	-	-	
470			-	-	-	-	-	
471			-	-	-	-	-	
472			-	-	-	-	-	
473			-	-	-	-	-	
474			-	-	-	-	-	
475			-	-	-	-	-	
476			-	-	-	-	-	
477			-	-	-	-	-	
478			-	-	-	-	-	
477			-	-	-	-	-	
478			-	-	-	-	-	

PUBLIC HEARING NOTICE

UNAPPROVED
CITY OF MILLER
CITY COUNCIL MEETING
DECEMBER 29, 2015

The City Council met in special session at City Hall at 12:00 p.m. on Tuesday, December 29, 2015.

MEMBERS PRESENT: Mayor Ron Blachford, Aldermen Gale Auch, Jim Odegaard, Tony Rangel, Tom Winsell, Joe Zeller and Alderwoman Mary Johnson.

CALL TO ORDER: Mayor Blachford called the meeting to order.

Pledge of Allegiance was said by all present.

AGENDA: Motion by Alderman Odegaard, seconded by Alderman Rangel to approve the agenda with the addition of remodeling the finance office. All members voted aye. Motion carried.

APPROVAL OF BILLS: Motion by Alderwoman Johnson, seconded by Alderman Auch to approve the bills with the addition of $3,692.85 to Builder's Cashway and $1,161.45 to Taser International. All members voted aye. Motion carried.

PUBLIC HEARING

A public hearing was held at 12:05 to review the project funding applications for the water, sewer and storm sewer projects. Ted Dickey, NECOG, presented the following information:

A project is needed to provide adequate water service to the City of Miller. All alternatives were looked at by the city and the engineer. The city is proposing to replace a portion of its water distribution system. The city is in the process of applying for funding from the South Dakota Department of Environment and Natural Resources for a Drinking Water State Revolving Fund and the United States Department of Agriculture – Rural Development. The most that would be borrowed from the SRF loan would be $2,200,000.00 with repayment through a water surcharge. The note will be for up to 3.25% at a term no greater than 30 years. If the proposed project financing is borrowed at the full amount, rate and term, the water rates would increase from $50.00 to $63.00 per 5,000 gallons. This is an increase of $13.00. Motion by Alderman Rangel, seconded by Alderman Auch to approve Resolution 2015-12 Water System Funding Application. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

A project is needed to provide adequate wastewater and storm sewer service to the City of Miller. All alternatives were looked at by the city and the engineer. The city is proposing to replace a portion of its wastewater and storm sewer collection system. The city is in the process of applying for funding from the South Dakota Department of Environment and Natural Resources for a Clean Water State Revolving Fund and the United States Department of Agriculture – Rural Development. The most that would be borrowed would be $6,500,000 with repayment through a sewer surcharge and a possible property tax assessment. The note will be for up to 3.25% at a term no greater than 30 years. If the proposed project financing is borrowed at the full amount, rate and term, the wastewater rates would increase from $31.65 to $69.15 this is an increase of $37.50. Motion by Alderman Odegaard, seconded by Alderwoman Johnson to approve Resolution 2015-11 Sewer, Storm Sewer Funding Application. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

There will be a DENR meeting on March 24 to approve the funding applications. City of Miller employees and/or council members are requested to be present at said meeting.

Motion by Alderman Rangel, seconded by Alderwoman Johnson to forego the actual second readings of Ordinances 667, 668, 669 and 670 in their entirety. All members voted aye. Motion carried.

2nd Reading of Ordinance #667 – Recodification: Motion by Alderwoman Johnson, seconded by Alderman Rangel to approve the second reading of Ordinance #667 – Recodification. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

2nd Reading of Ordinance #668 – Electric Utility Due Dates: Motion by Alderman Rangel, seconded Alderman Odegaard to approve the second reading of Ordinance #668 – Electric Utility Due Dates. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

2nd Reading of Ordinance #669 – Water Utility Due Dates: Motion by Alderwoman Johnson, seconded by Alderman Zeller to approve the second reading of Ordinance #669 – Water Utility Due Dates. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

2nd Reading of Ordinance #670 – Fee Schedule Update: Motion by Alderman Auch, seconded Alderman Rangel to approve the second reading of Ordinance #670 – Fee Schedule Update. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

Resolution 2015-10 – Contingency Transfer: Motion by Alderman Auch, seconded by Alderman Rangel to approve Resolution 2015-10 – Contingency Transfer. Said resolution will be published separately in *The Miller Press*. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

2016 Cost of Living Increases: Motion by Alderman Zeller, seconded by Alderwoman Johnson to approve a 2% cost of living increase to all employees. Alderwoman Johnson had compiled a history of the wage increases for each city position. Roll Call vote: Alderman Rangel – aye; Alderman Odegaard – aye; Alderman Zeller – aye; Alderwoman Johnson – aye; Alderman Winsell – aye; Alderman Auch – aye. Motion carried.

Remodel Finance Office: Alderman Rangel stated that the budget for the building fund still has over $7,600.00. He would like to start insulating and building walls in the finance office for efficiency purposes. Joe Zeller gave a rough estimate of supplies that will be needed to start the project.

Camden Hofer, SPN, did an overview of the Facility Plan for the water, wastewater and storm sewer project proposals. He reviewed the approximate timeline and costs for each of the three phases of the proposed projects. Mr. Hofer will provide a power point to show pictures of our current system at the Farm and Home Show January 15-16.

Motion by Alderman Zeller, seconded by Alderman Auch to adjourn the meeting. There being no further business, the meeting was adjourned at 2:33 p.m. All members voted aye. Motion carried.

_____
Ronald Blachford, Mayor

_____
Sheila Coss, Finance Officer

LEGAL NOTICE OF RECEIPT
Copy of the official proceedings
was received on:_____
Published once at the
approximate cost of:_____

Bills December 2015 (3)

A & B Business Solutions	Supplies	$15.79
Aberdeen Chrysler Center	'12 Charger Repairs	$1,865.37
Associated Supply Co, Inc	Supplies	$51.27
Builders Cashway Inc	Estimate	$3,692.85
Chief Supply Corporation	Supplies	$153.42
City Street Department	Reimb from Water Dept	$17,955.27
Data Technologies Inc	W-2/1099 Forms	$104.33
Ed Roehr Safety Products	Taser Cartridge	$423.43
Fastenal Company	Supplies	$52.75
Northwest Pipe Fittings	Manhole Frame/Cover	$435.44
Oakley Farm & Ranch Supply	Diesel Treat/Grease	$22.98
Oakley Repair	Powersteering Repair	$274.63
Overhead Door Company - Pierre	Repair Garage Door	$2,140.92
SD Dept of Health	Tests	$60.00
Taser International	Taser	$1,161.45
Tony's Repair	Service	$119.80
TrueNorth Steel	Supplies	$172.44
Ultramax	Ammunition	$480.50
Venture Communications	Service	$65.00
**** Paid Total ****		$29,247.64

Payroll by Department: 12/29/2015

	Department	w/o OT	OT	Total
41110	COUNCIL	2,199.46		2,199.46
41410	FINANCE OFFICE	870.34		870.34
41910	BUILDING	629.00		629.00
42110	POLICE	7,510.22	166.43	7,676.65
43110	STREET	3,916.87	425.24	4,342.11
43210	SEWER	4,553.23	629.73	5,182.96
43310	WATER	4,553.20	629.71	5,182.91
43410	ELECTRIC	6,873.11	422.10	7,295.21
		$31,105.43	$2,273.21	$33,378.64

AFFIDAVIT OF PUBLICATION
The Miller Press

STATE OF SOUTH DAKOTA)
)SS
County of Hand)

Michael G. Caviness of said county being first duly sworn, on oath, says that he is the publisher of *The Miller Press*, a weekly newspaper published in Miller, said County of Hand by Hand County Publishing Co., Inc. and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has been published within said County for fifty weeks next prior to the publication of the notice, herein mentioned, and was and is printed wholly or in part in an office maintained at said place of publication; that the

Notice of Public Hearing for the City of Miller Phase I Water Wastewater and Storm Sewer

a printed copy of which, taken from the paper in which the same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once each week for 1 successive week(s), on the day of each week on which said newspaper was regularly published, to wit:

12/16 20 15; _____ 20____

_____ 20____; _____ 20____

_____ 20____; _____ 20____

that the full amount of the fees for the publication of the annexed notice is

$ 19.15

Michael G. Caviness, Publisher

Subscribed and sworn to before me this 4 day of Jan 2016.

Janet L. Kittelson, Notary Public
My Commission expires: 6-26-19

City announces public hearing

Notice of Public Hearing for the City of Miller Phase I Water, Wastewater, and Storm Sewer Improvements Project

The City of Miller is proposing to make repairs to the sewer and storm sewer system. The City will be submitting a Clean Water State Revolving Fund Application in the amount of $6,757,000 to the Department of Environment and Natural Resources. The funding may be awarded in the form of a grant, loan, or a principal forgiveness loan; any portion of the loan that is not forgiven will have a term of up to 30 years at a rate of up to 3.25%. The amount and source of funds will be determined by the Board of Water and Natural Resources when the application is presented at a schedule board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

The City of Miller is also proposing to make repairs to the drinking water distribution system by replacing ACP lines with PVC. The City will be submitting a Drinking Water State Revolving Fund Application in the amount of $2,205,000 to the Department of Environment and Natural Resources. The funding may be awarded in the form of a grant, loan, or a principal forgiveness loan; any portion of the loan that is not forgiven will have a term of up to 30 years at a rate of up to 3.25%. The amount and source of funds will be determined by the Board of Water and Natural Resources when the application is presented at a schedule board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

The public hearing will be held at the City Hall @ 12:05pm on December 29, 2015.

Published 12-16-15 at the total approxiamte cost of $_19.15.

NORTHEAST COUNCIL OF GOVERNMENTS

P.O. BOX 1985 ABERDEEN, SD 57402-1985

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Astoria

Project Title:	Wastewater System Improvements
Funding Requested:	$660,000
Total Project Cost:	$744,400
Project Description:	The project consists of expanding the existing wastewater treatment facility, rehabilitating a diversion channel on the west side of the wastewater treatment facility, and cleaning and televising the city's wastewater collection system. Expanding the existing wastewater treatment facility will provide adequate storage and treatment of wastewater by constructing a new pond. The diversion channel work will redirect stormwater and prevent damage to the berms of the storage ponds. Cleaning and televising the collection system will provide information regarding inflow and infiltration problems within the collection system.
Alternatives Evaluated:	The "Do Nothing" alternative was not chosen as it would not correct any of the problems the city is experiencing.
Implementation Schedule:	Astoria anticipates bidding the project in June, 2016 with a project completion date of October 2016.
Service Population:	139
Current Domestic Rate:	$22.00 flat rate

Interest Rate: 3.25% Term: 30 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan, Astoria would have to enact a surcharge of approximately $53.50. When added to current rate of $22/month, residents would be paying $75.50/month. However based on projected O&M costs, Astoria could reduce it base rate to $10 reducing overall monthly rate to $63.40.

25% Funding Subsidy:	$186,100 subsidy with a loan of $558,300.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $558,300, Astoria would have to enact a surcharge of approximately $40/month thereby paying a rate of $50/month.

50% Funding Subsidy:	$372,200 subsidy with a loan of $372,200.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $372,200, Astoria would have to enact a surcharge of approximately $26.75 thereby paying a rate of $36.75/month.

75% Funding Subsidy:	$558,300 subsidy with a loan of $186,100.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $186,100, Astoria would have to enact a surcharge of approximately $13.40 thereby paying a rate of $23.40/month.

ENGINEERING REVIEW COMPLETED BY: NICK NELSON

FINANCIAL REVIEW COMPLETED BY: DAVE RUHNKE

Read Me First!

SD EForm - 2127LD V4

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Astoria	Proposed Funding Package
Address: PO Box 8 Astoria, SD 57213	Requested Funding $744,400 Local Cash _____
	Other: _____ _____
Subapplicant: None	Other: _____ _____
DUNS Number: 832648310	Other: _____ _____
	TOTAL $744,400

Project Title: Wastewater System Improvements

Description:

$27,130 - cleaning and televising existing wastewater collection system

$56,000 - land acquisition

$576,870 - wastewater pond addition and modifications

$84,000 - diversion channel

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Terry Lovre, Board President
Name & Title of Authorized Signatory (Typed)

Terry Lovre 3-7-16
Signature Date

Professional Consultants

Application Prepared By: First District

Contact Person: Ted Haeder

Mailing Address: PO Box 1207

City, State, and Zip: Watertown, SD 57201

Telephone Number: (605) 882-5115 Fax: (605) 882-5049

Email address: ted@1stdistrict.org

Consulting Engineering Firm: Schmucker, Paul, Nohr & Associates

Contact Person: Harlan Quenzer, P.E.

Mailing Address: 2100 North Sanborn Blvd., PO Box 398

City, State, and Zip: Mitchell, SD 57301

Telephone Number: (605) 996-7761 Fax: (605) 996-0015

Email address: hquenzer@spn-assoc.com

Legal Counsel's Firm: Gunderson Evenson & Boyd Law

Contact Person: Todd Boyd

Mailing Address: 415 3rd Avenue South

City, State, and Zip: Clear Lake, SD 57226

Telephone Number: (605) 874-2111 Fax:

Email address:

Bond Counsel's Firm: Meierhenry Sargent LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Avenue

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 336-3075 Fax: (605) 336-2593

Email address: todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services	$820					$820
B. Travel						
C. Legal & Bond Counsel	$29,915					$29,915
D. Other Wetlands	$2,850					$2,850
2. Land, Structure, Right-of-Way	$52,600					$52,600
3. Engineering						
A. Bidding and Design Fees	$67,520					$67,520
B. Project Inspection Fees	$54,000					$54,000
C. Other Borings	$3,895					$3,895
4. Construction & Improvements	$491,800					$491,800
5. Equipment						
6. Contractual Services						
7. Other Clean&Televise						
8. Other						
9. Subtotal (Lines 1-8)	$703,400					$703,400
10. Contingencies	$41,000					$41,000
11. Total (Lines 9 and 10)	$744,400					$744,400
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain)		$744,400	March 31, 2016
Other (Explain)			
Other (Explain)			
Total		$744,400	$744,400

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 139 2010 139 2000 150

Top three employers within 30 miles	Number of Employees	Type of Business
Daktronics	2300	Manufacturing
SDSU	1800	Education
3M	800	Manufacturing

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year						
Purpose	No existing debt					
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$16,988	$17,181	$20,210	$17,688	$17,688	$17,688
Surcharge Fees					$34,000	$34,000
Other (Explain)						
Operating Expenses						
Personal Services	($1,500)	($1,500)	($1,500)	($1,500)	($4,000)	($4,000)
Chemical, Material & Supplies		($587)	($1,291)			
Electric & Other Utilities						
Other (Explain)	($318)	($542)	($318)	($500)	($500)	($500)
Operating Net Cash	$15,170	$14,553	$17,101	$15,688	$47,188	$47,188
Nonoperating Cash Flow						
Interest Revenue						
Transfers In (Explain)						
Fixed Asset Purchases	($59,193)	($35,934)	($8,161)			
Transfers Out (Explain)						
Principal Debt Payments					($15,023)	($15,512)
Interest Debt Payments					($24,193)	($23,705)
Other (Explain)						
Nonoperating Net Cash	($59,193)	($35,934)	($8,161)		($39,216)	($39,216)
Increase (Decrease) Cash	($44,023)	($21,382)	$8,940	$15,688	$7,972	$7,972
Beginning Cash Balance	$92,657	$48,634	$27,252	$36,192	$51,880	$59,852
Ending Cash Balance	$48,634	$27,252	$36,192	$51,880	$59,852	$67,823
Restricted Balance						
Unrestricted Balance						

Additional Comments (Explanations)

Operating Expenses (Other) - Testing

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$22.00	$65.00	67	flat
Business				
Other:				
Other:				

Are fees based on usage or flat rate? Flat

When is proposed fee scheduled to take effect? As required by SD DENR

When did the current fee take effect? 7/2011

What was the fee prior to the current rate? 12.00

Storm Sewer Projects Only: Does applicant have a separate storm water fee? _____

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. ☐
- A public hearing held discussing the project and the use of an SRF loan to finance the project. ☐
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. ☐
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. ☐
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. ☐
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. ☐

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:

Project Name:

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Project Engineer

Signature: _____

Printed Name: _____

License #: _____

Date: _____

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	$717,270
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	$27,130
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$744,400

Terry Lovre, Board President

Name & Title of Authorized Representative

Terry Lovre

Signature of Authorized Representative

3-2-16

Date

RESOLUTION NO. 2016-1

RESOLUTION APPROVING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Astoria (the "City") has determined it is necessary to proceed with improvements to its Wastewater Treatment System, including but not limited to renovating the existing wastewater treatment lagoon (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") has been prepared; and

WHEREAS, the City has reviewed the Application to be submitted to the Board, true copies of which are attached hereto, and finds it proper in all respects; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $800,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Astoria, South Dakota, this 7th day of March 2016.

APPROVED:

Mayor
City of Astoria SD

(Seal)
Attest:
City Finance Officer

RECEIVED
OCT - 4 2011
Division of Financial
& Technical Assistance

FACILITY PLAN FOR WASTEWATER SYSTEM IN ASTORIA, SOUTH DAKOTA

SPN PROJECT #13576

September 2011

SPN & Associates
ENGINEERS-PLANNERS- SURVEYORS
2100 NORTH SANBORN BLVD, P.O. BOX 398
MITCHELL, SOUTH DAKOTA 57301
PHONE 605-996-7761 FAX 605-996-0015

FACILITY PLAN

FOR

WASTEWATER SYSTEM EVALUATION

IN

ASTORIA, SOUTH DAKOTA

SPN #13576

SEPTEMBER 2011

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Harlan J. Quenzer

Registration Number SD #2726

Date September 28, 2011

PROFESSIONAL ENGINEER REG. NO. 2726 HARLAN JOHN QUENZER SOUTH DAKOTA

SCHMUCKER, PAUL, NOHR & ASSOCIATES
CONSULTING ENGINEERS - SURVEYORS
2100 NORTH SANBORN BLVD, PO BOX 398
MITCHELL, SOUTH DAKOTA 57301

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1 INTRODUCTION

1.1 PURPOSE

The Town of Astoria has contracted with the engineering firm of SPN and Associates to complete an investigation of its existing wastewater collection and treatment systems. The intent of the study is to identify and quantify problems that exist within these systems.

The results of the completed investigation are presented in this Facility Plan. The Facility Plan contains the information on which the Town Board of Astoria can base cost-effective decisions relating to the necessary improvements to its wastewater system. The Town Board will, after appropriate public input, determine the best options to make any needed improvements that are identified in the Facility Plan.

Loan and grant funding will undoubtedly be desired to make any of the improvements that are recommended herein. This Facility Plan will be a valuable tool for the community to pursue the funding necessary in its efforts to make needed public improvements.

1.2 WASTEWATER SCOPE OF WORK

The scope of the study authorized by the Town Board includes:

1) An analysis of available population data and related information for the purpose of projecting future population trends within the Town's service area boundaries.
2) Measurement of the wastewater flows at the treatment facility using a continuous flow monitoring device installed in one of the manholes upstream from the wastewater treatment facility.
3) An analysis of the wastewater flow data that is collected to determine: a) the quantities of wastewater flow reaching the wastewater treatment facility during the monitoring period; b) the possible existence of excessive infiltration or inflow within the wastewater collection system using the wastewater flow data that is collected and the records of water purchases and sales as provided by the

Town; c) current wastewater loadings on the wastewater treatment facility; and d) projected future wastewater loadings on the wastewater treatment facility.

4) An analysis of the wastewater collection system to determine the possible locations of sources of surface water inflow via the smoke testing method.
5) An analysis of the capability of the current wastewater collection and treatment systems relating to meeting present and future needs and NPDES permit standards along with the identification and evaluation of alternate solutions available to the Town's requirements for the project.
6) A review of the State of South Dakota Department of Environment and Natural Resources' (SD DENR) requirements and Astoria's wastewater discharge permit and past history of operation records to determine the compliance of Astoria with regulatory standards.
7) A general economic analysis of Astoria's applicable alternatives.
8) A written report, with maps and sketches, setting forth the findings and recommendations of the Preliminary Study, providing Astoria with ten (10) copies of said report and meeting with Astoria to review said report.

1.3 AUTHORIZATION

The firm of SPN and Associates was authorized, as per a Letter of Agreement dated April 4, 2011, by the governing body of the Town of Astoria to proceed with the evaluation of the Town of Astoria's wastewater collection and wastewater treatment systems. The following report presents the findings and conclusions resulting from the authorized study.

2 COMMUNITY DESCRIPTION

2.1 GENERAL INFORMATION

The Town of Astoria was founded in 1917 and is located in southeast Deuel County, South Dakota. Astoria's primary access is via State Highway 28 and nearby Interstate 29 as indicated in Figure 2.1.

Astoria's government consists of a three-member Board of Trustees. A part-time sewer/street superintendent is employed by the Board of Trustees. This individual provides necessary public utility maintenance within the community. The town also has a part-time finance officer to assist the board with financial matters.

Deuel County is in the east-central part of South Dakota. It has a total area of approximately 407,188 acres. Communities located within the county include Clear Lake (the county seat), Altamont, Bemis, Brandt, Gary, Goodwin and Toronto. Agriculture is the major source of income within the county, with about 65% of the total acreage of the county devoted to crop production and approximately 19% of the acreage of the county remaining in native grasses.

2.2 POPULATION CHARACTERISTICS

Astoria's population is 139 according to the 2010 census. The most recent Census Bureau data available at the time of this report, the 2000 Census, indicated that Astoria's median age was 45 years as compared to the state's median age of 35.6. At the time census data was gathered, 28% of its population was the age of 65 and over. In comparison, the state's population that is 65 and over is 14.3%.

Data from the 2000 census indicates that the community's median household income of $24,375 was about $10,907 lower than the state's median household income of $35,282. At the time the census data was gathered, about 17.8% of the families living in the community had incomes at or below the poverty level.

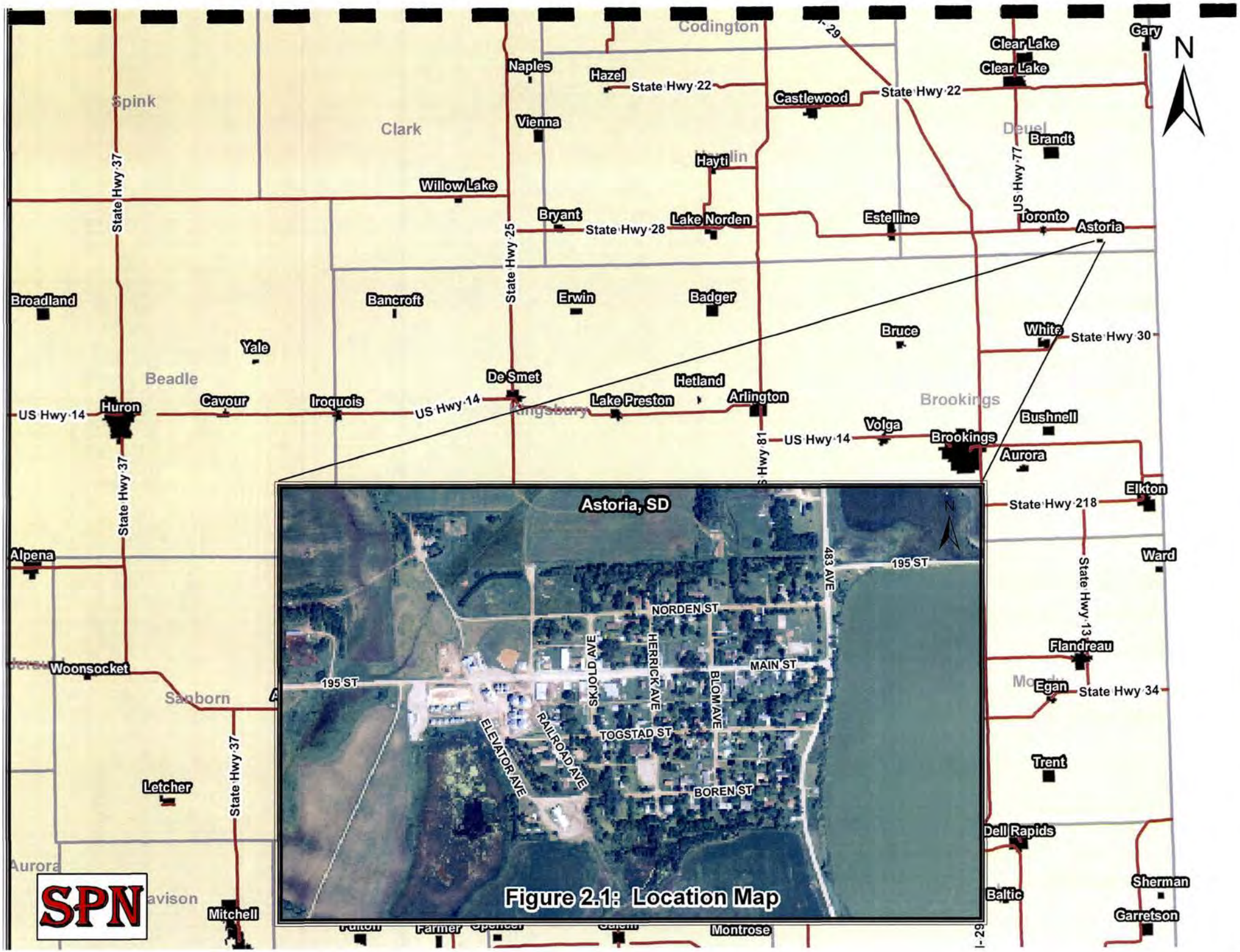


Figure 2.1: Location Map

2.3 POPULATION PROJECTION

Astoria's population is 139 according to the 2010 census. Table 2.3 and Figure 2.3 indicate Census Bureau population data from 1920 to 2010 and the estimated population for the community through the year 2040. As shown by the historical data, the population has fluctuated in the past. Local projections indicate that the population is anticipated to remain fairly stable with the possibility of slight decline.

In addition to the permanent residents, the town also provides sanitary sewer service to one out-of-town service connection. The individuals utilizing service at this residence also needs to be included in the population served. As a result, the Town Board estimated that the sanitary sewer system provides service to approximately 145 people. This number will be utilized in analyzing the wastewater collection and treatment systems.

Table 2.3: Estimated Town Population

Town of Astoria			
Year	**Population**	**Year**	**Population**
1920	221	1990	155
1930	231	2000	150
1940	214	2010	139
1950	206	2020 (Est.)	129
1960	176	2030 (Est.)	119
1970	153	2040 (Est.)	109
1980	154		

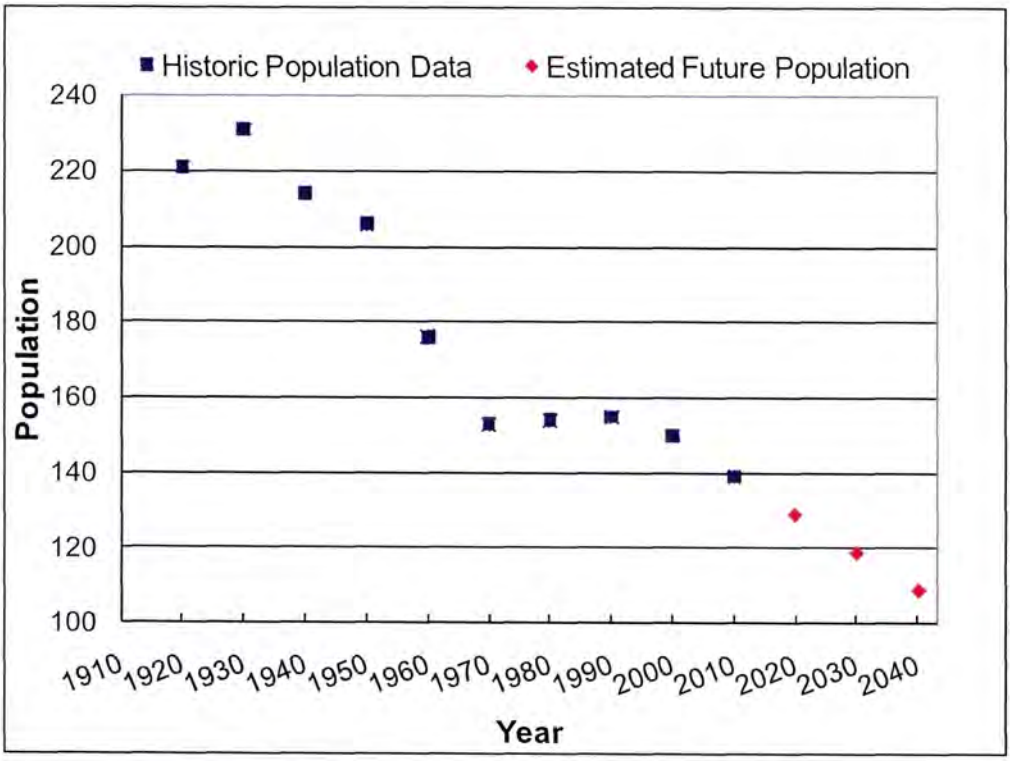


Figure 2.3: Historic and Projected Town Population

2.4 TOPOGRAPHY / CLIMATE

The surface area for the eastern portion of Deuel County is gently undulating to hilly. The drainage pattern is generally poorly defined where small drainages terminate in sloughs, potholes or lakes. Larger drainages are well defined. The northeast corner of Deuel County is composed of a nearly level to gently undulating surface area. The western portion of the county is nearly level to gently sloping. The steeper areas are generally located near the well defined drainages. Elevations range from about 2,000 feet above mean sea level in the west-central and south-central parts of Deuel County to about 1,150 feet above mean sea level in the northeastern part (USDA, 1997).

Winters in Deuel County are cold while summers are hot with occasional cool spells. Normal precipitation for the area is about 24 inches annually. Approximately 75% of the total annual precipitation (18 inches) usually occurs during the growing season, April – September. The average annual snowfall for the area is about 50 inches. Temperatures in Deuel County range from 15° F during the winter to 70° F during the summer (USDA, 1997).

2.5 ENVIRONMENTAL REVIEW INFORMATION

As part of the environmental assessment requirement for the facility planning process, the project sponsor is required to contact various state and federal agencies. Environmental assessment letters have been sent to the following agencies. It is expected that no adverse environmental impacts will occur due to construction taking place on previously disturbed areas.

2.5.1 Historic and Archaeological Sites

Upon completion of an application for funding through one or more various funding agencies, a letter will be sent to the funding agency describing the proposed project location and construction activities as well as a general description of the existing conditions as found within the project limits. Since the proposed project takes place in previously disturbed areas, no effect on historic properties or archaeological findings is expected due to this project.

2.5.2 Flood Plains and Wetlands

2.5.2.1 Flood Hazard Evaluation

The U.S. Army Corps of Engineers was contacted for the purpose of soliciting input on the proposed improvements. Since the proposed project takes place in previously disturbed areas, no effect on floodplains in the area is expected as a result of this project. Correspondence related to this contact will be sent to the Town Board of Astoria and will be available upon request.

2.5.2.2 Floodplain Construction Permits

The U.S. Army Corps of Engineers was contacted for the purpose of soliciting its review and comments related to the possible need for permits authorized under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. Since the proposed project takes place in previously disturbed areas, no permits are expected to be needed for the project. Correspondence related to this contact will be sent to the Town Board of Astoria and will be available upon request.

2.5.2.3 Wetlands

The U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on wetlands. Since the proposed project takes place in previously disturbed areas, no effect on wetlands in the area is expected as a result of this project. Correspondence related to these contacts will be sent to the Town Board of Astoria and will be available upon request.

2.5.3 Agricultural Lands

The U.S. Department of Agriculture State Soil Scientist was contacted for the purpose of soliciting input on the proposed improvements. Since the proposed project is confined to previously disturbed areas, no effect on agricultural properties is expected. Correspondence related to this contact will be sent to the Town Board of Astoria and will be available upon request.

2.5.4 Wild and Scenic Rivers

Comments were requested in regards to "Wild and Scenic Rivers" in the area. Research indicates that there are no designated wild and scenic rivers in the area. Correspondence related to this will be sent to the Town Board of Astoria and will be available upon request.

2.5.5 Fish and Wildlife Protection

2.5.5.1 Endangered Species

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on endangered species which might result from construction of the proposed improvements. Since the proposed project takes place in previously disturbed areas, no effect on endangered species is expected. Correspondence related to these contacts will be sent to the Town Board of Astoria and will be available upon request.

2.5.5.2 Critical Habitat

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on critical wildlife habitats which might result from construction of the proposed improvements. Since the proposed project takes place in previously disturbed areas, no effect on critical wildlife habitats is expected. Correspondence related to these contacts will be sent to the Town Board of Astoria and will be available upon request.

2.5.6 Water Quality and Quantity

The South Dakota Department of Environment and Natural Resources was contacted for the purpose of soliciting review and comments related to potential impact on water quality and quantity that could result from the proposed project. Since the proposed project takes place in previously disturbed areas, no effect on water quality is expected. Correspondence related to this contact will be sent to the Town Board of Astoria and will be available upon request.

2.6 DIRECT AND INDIRECT IMPACTS

Soil erosion, noise pollution, traffic obstruction, and increased surface runoff due to dewatering operations sometimes impact the environment during this type of project. However, these impacts are temporary and will not influence the environment over the long term. Enhanced human health and safety and more efficient delivery and treatment of municipal waste are positive impacts to the environment that will have long-lasting value.

2.7 MITIGATING ADVERSE IMPACTS

Adverse impacts will be minimized to the greatest extent possible by the implementation of accepted cautionary measures. Temporary and permanent erosion control will be included in construction contracts. Protection of public health, safety and welfare will also be incorporated into the specifications and contract documents. Appropriate permits will be obtained before discharging any trench or storm waters. Additionally, should any permanent adverse impacts result from the project, mitigating measures will be followed to the satisfaction of the appropriate review agency.

3 WASTEWATER SYSTEM ANALYSIS

3.1 WASTEWATER COLLECTION SYSTEM

The Town of Astoria currently provides sanitary sewer service to approximately 67 connections of which eight are commercial. According to the information provided by the Town, the entire mainline collection system consists of 10,670 feet of PVC pipe. A general layout of the existing sanitary sewer collection system is shown in Figure 3.1.

According to available information, the collection system is believed to have been constructed around 1970. The collection system has two storm inlets connected to the mainline collection system that are believed to be contributing a significant amount of inflow to the system. There are approximately 30 manholes and three cleanouts within the collection system. According to town officials, most of the manholes are believed to be precast concrete constructed and in good condition.

3.2 CLEANING AND TELEVISING

At the time that this report was prepared, the Town had no record of any televising being completed on the sanitary sewer collection system. The Town should consider conducting televised inspections and cleaning of the entire wastewater collection system periodically to identify deficiencies within the system; potential sources of inflow and infiltration; and to prioritize the repair or replacement of portions of the collection system as needed.

3.3 SMOKE TESTING

On August 11, 2011, SPN and Associates, with the help of personnel from the Town of Astoria, completed smoke testing of the sanitary sewer collection system. The main objective of the smoke testing was to discover if any cross connections between the storm sewer and sanitary sewer existed. Two cross connections (storm water inlets) were located near the Blom Avenue and Borden Street intersection. These two cross connections are located in low drainage areas and are contributing significant inflow into the collection system. The inlet located between Borden and Togstad Street has been recently capped. These inlets should be eliminated from the sanitary sewer collection system. Two abandoned services and five broken cleanouts were also located but were not believed to be vulnerable to collecting any major amount of inflow.

Figure 3.1: Existing Collection System

3.4 EXISTING WASTEWATER FLOWS

3.4.1 Domestic Wastewater Flow

The average domestic wastewater flow in the Astoria wastewater collection system was determined using water use data provided by the Town and Brookings-Deuel Rural Water System. Astoria's billed winter water use records are shown in Table 3.4.1. An adjustment was made to the January and February 2010 usage to account for a water service break.

Table 3.4.1: Winter Water Use Record

Month	Billed (gal)	GPD	GPCPD
Feb 07	375,000	13,393	92
Dec 07	357,000	11,516	79
Jan 08	295,000	9,516	66
Feb 08	311,000	10,724	74
Dec 08	291,000	9,387	65
Jan 09	322,000	10,387	72
Feb 09	292,000	10,429	72
Dec 09	281,000	9,065	63
Jan 10	225,667	7,280	50
Feb 10	150,667	5,381	37
Dec 10	319,000	10,290	71
Jan 11	320,000	10,323	71
Feb 11	237,000	8,464	58
Average	290,500	9,700	67
	80% of Flow =	**7,760**	**54**

The water use data indicates that the average volume of water billed for domestic use during the winter months from January 2007 through February 2011 is equal to approximately 9,700 gallons per day (gpd). The billed winter water record is typically used to exclude the consideration of water usage that may be occurring in the water distribution system due to lawn watering and other summertime activities. Because there is little water usage during the winter months that does not reach the sanitary sewer, it was

assumed that 80 percent or 7,760 gpd (9,700 gpd x 0.80) of the billed water usage reaches the wastewater collection system.

Astoria's estimated system population of 145 people utilize the Town's water distribution system. Based on the water use data and the water user population, the estimated average daily wastewater flow would be approximately 54 gallons per person per day (7,760 gpd / 145 people). Chapter 1.C.2 of the Recommended Design Criteria for Wastewater Collection and Treatment Facilities as published by the South Dakota Department of Environment and Natural Resources (SD DENR) states that wastewater flows can be justified by local water consumption records but shall not be less than 60 gallons per capita per day (gpcpd). It is therefore concluded that 60 gpcpd will be used for analysis of the system and for the remainder of this report. The estimated domestic wastewater flow normally entering Astoria's collection system is approximately 8,700 gpd (60 gpcpd x 145 wastewater system users).

3.4.2 Wastewater Flow Monitoring

A flow monitoring recorder was installed in the first manhole upstream of the treatment system. The monitoring device was used to evaluate the fluctuations in wastewater flow and identify the effects of inflow and infiltration on the system. The flow recorder was in place from May 18 through August 7, 2011. This period is typically wet with the potential for large spring precipitation events. The flow recorder showed an average daily flow of 47,100 gallons. Figure 3.4.2 on the following page illustrates the actual wastewater flow data as collected by the meter, the average theoretical domestic wastewater flow per day calculated in Section 3.4.1 and precipitation. The figure further illustrates drastic increases in wastewater flow when significant precipitation events occur. Astoria's highest daily wastewater flow recorded during the monitoring period occurred on July 11 which immediately followed a 1.75-inch precipitation event. Several peaks in the wastewater correlate directly to significant precipitation events.

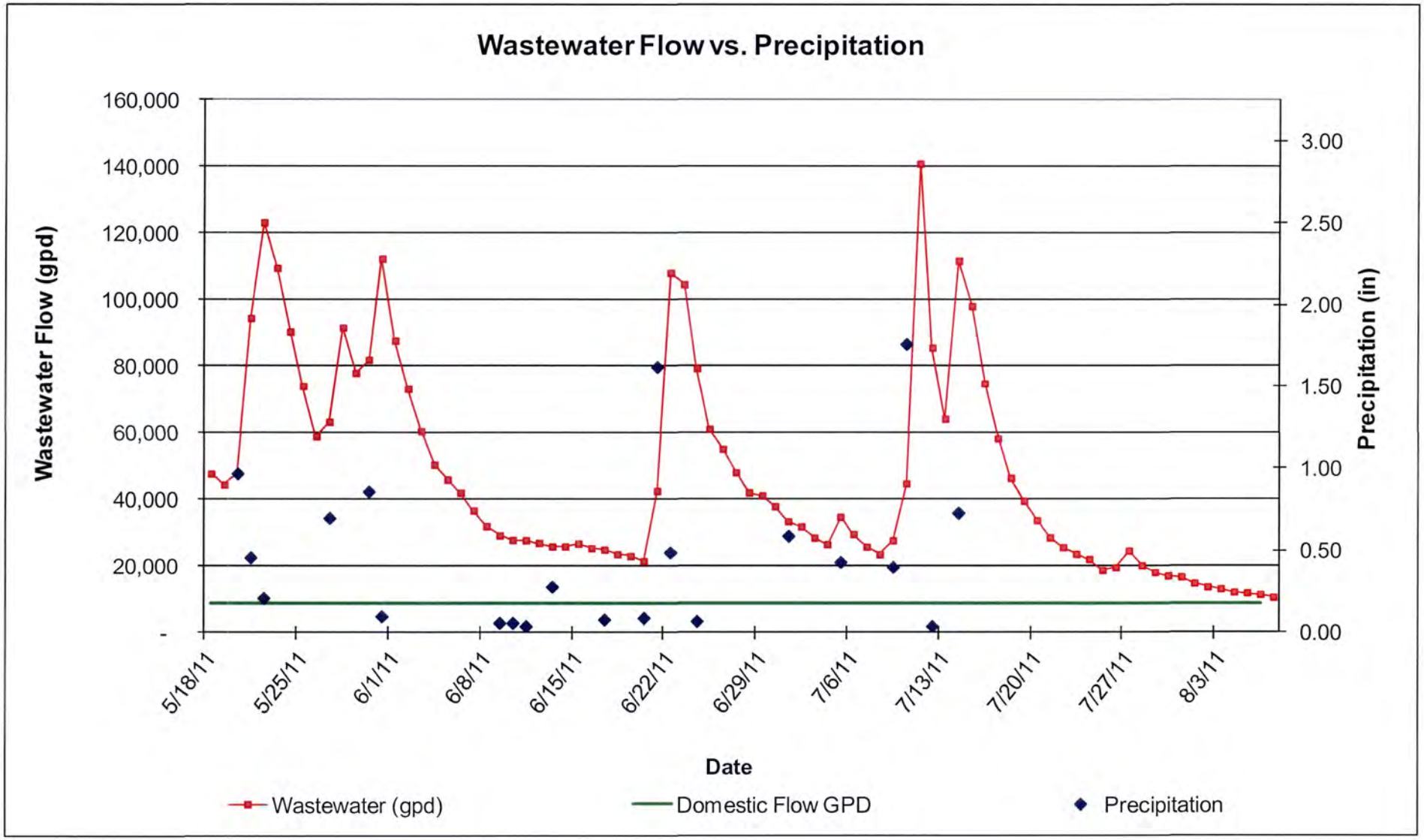


Figure 3.4.2: Wastewater Flow Data

3.4.3 **Infiltration and Inflow Analysis**

Inflow is the flow entering the system from storm sewer connections, perforated manhole covers, improperly abandoned lines, roof drains, basement sump pumps, and other storm water drainage systems. Inflow results from individual precipitation events and periods of snow melt. The intensity of the rain event can play a large role in the degree of impact to the system. In other words, a two-inch rainfall over a couple of hours will result in a larger inflow than a two-inch rainfall over a 12-hour period.

Water that enters the sewer system through cracked pipes, poor joints and the walls of manholes is infiltration. Therefore, infiltration can only occur when the groundwater table is at or above the sanitary sewer piping. Evidence of infiltration is apparent by the consistently high average day flows in months and years during and following periods with above-normal precipitation. As would be expected, the above-normal precipitation results in an increased level of the groundwater table. This increased level in the groundwater table then subjects a larger portion of the sewer system to infiltration. This can result in a decreased capacity for growth and an increased need for a larger treatment system to handle the higher flows.

The inflow component of the total wastewater flow is difficult to estimate because it can occur in short intense flows that are related to precipitation events. For the purpose of this evaluation the wastewater flow is estimated using a combined infiltration and inflow (I & I) component.

The wastewater flow recorded during the flow monitoring period indicated that an average daily flow of 47,100 gallons was entering the wastewater treatment facility. Billed water records discussed in Section 3.4.1 indicated that an average daily wastewater flow of 8,700 gallons could be anticipated through domestic use. When these two values are compared, an estimated average daily I & I component of 38,400 gallons is found (47,100-8,700 gpd). During the monitoring period, 3,142,387 gallons of I&I were recorded.

The SD DENR has established a standard maximum acceptable allowance for infiltration. Over the years, the standard has gradually decreased from an allowance of 200 gallons per day per inch of diameter per mile of pipe for clay pipe to the current allowance of 50 gallons per day per inch of diameter per mile of pipe for PVC pipe. Based on the total diameter-length in inch-miles times the allowable rates of 200 and 50 gallons per day per inch of diameter per mile of pipe, an infiltration flow of 2,000 gallons per day would be considered acceptable as shown in Table 3.4.3. During the flow monitoring period, the Town of Astoria was collecting over 19 times the standard maximum acceptable allowance for inflow and infiltration.

Table 3.4.3: Allowable Infiltration

Sanitary Sewer Diameter (in)	Pipe Type	Total Length Sanitary Sewer (ft)	Total Diameter-Length (in-mile)	Allowable Infiltration (gpd)
6	Clay	5,025	5.7	1,142
8	PVC	10,670	16.2	808
	Total	15,695	21.9	2,000

Note: The total length of six-inch diameter sanitary sewer pipe includes the length of sewer service piping that is based on an assumed length of 75 feet per connection.

In an effort to locate areas where excessive I&I is occurring, additional flow monitoring was conducted within the town. The town was split into three areas using several flow meters. Figure 3.4.3-1 illustrates how the town was divided into zones for the use of monitoring.

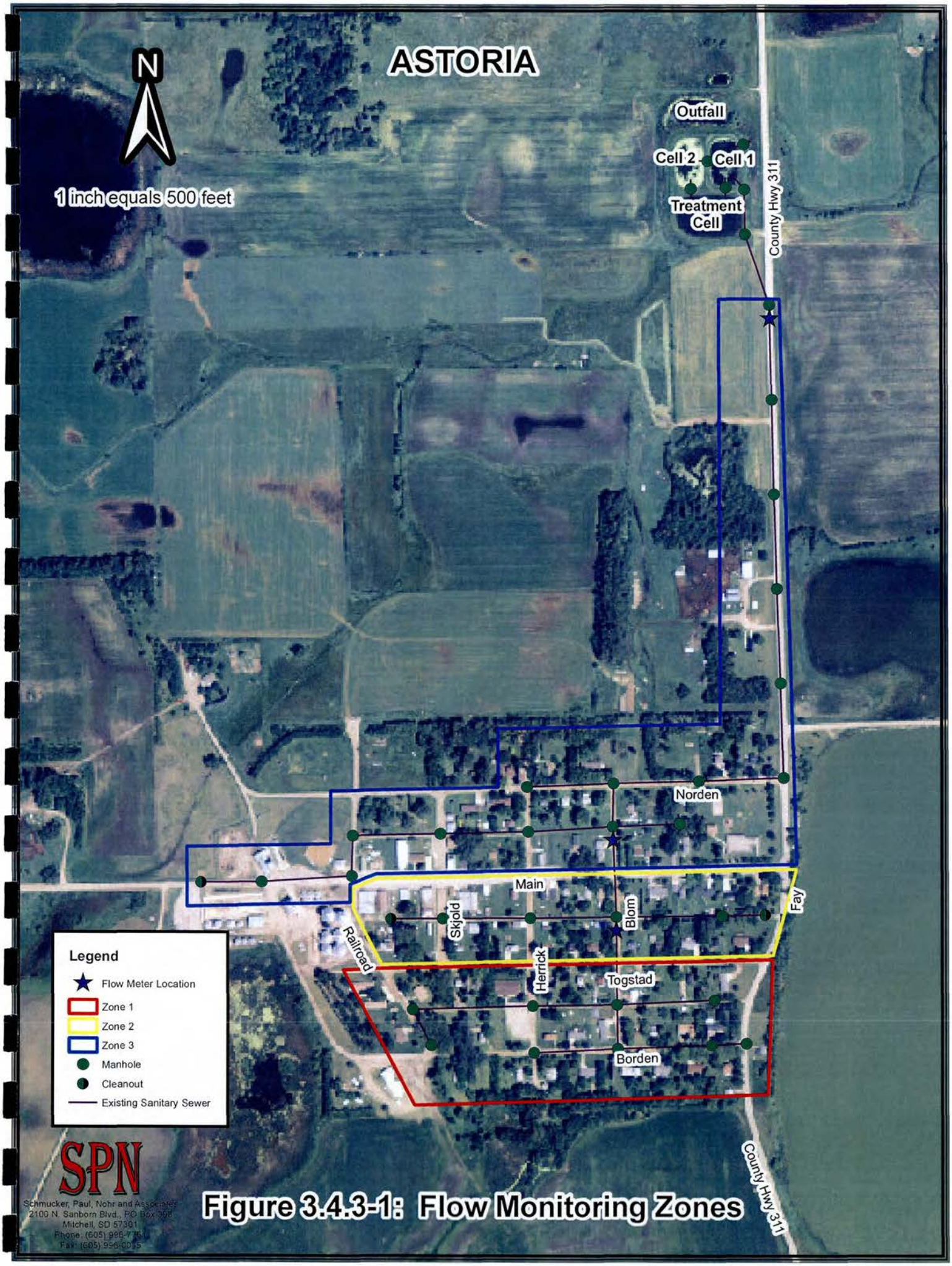
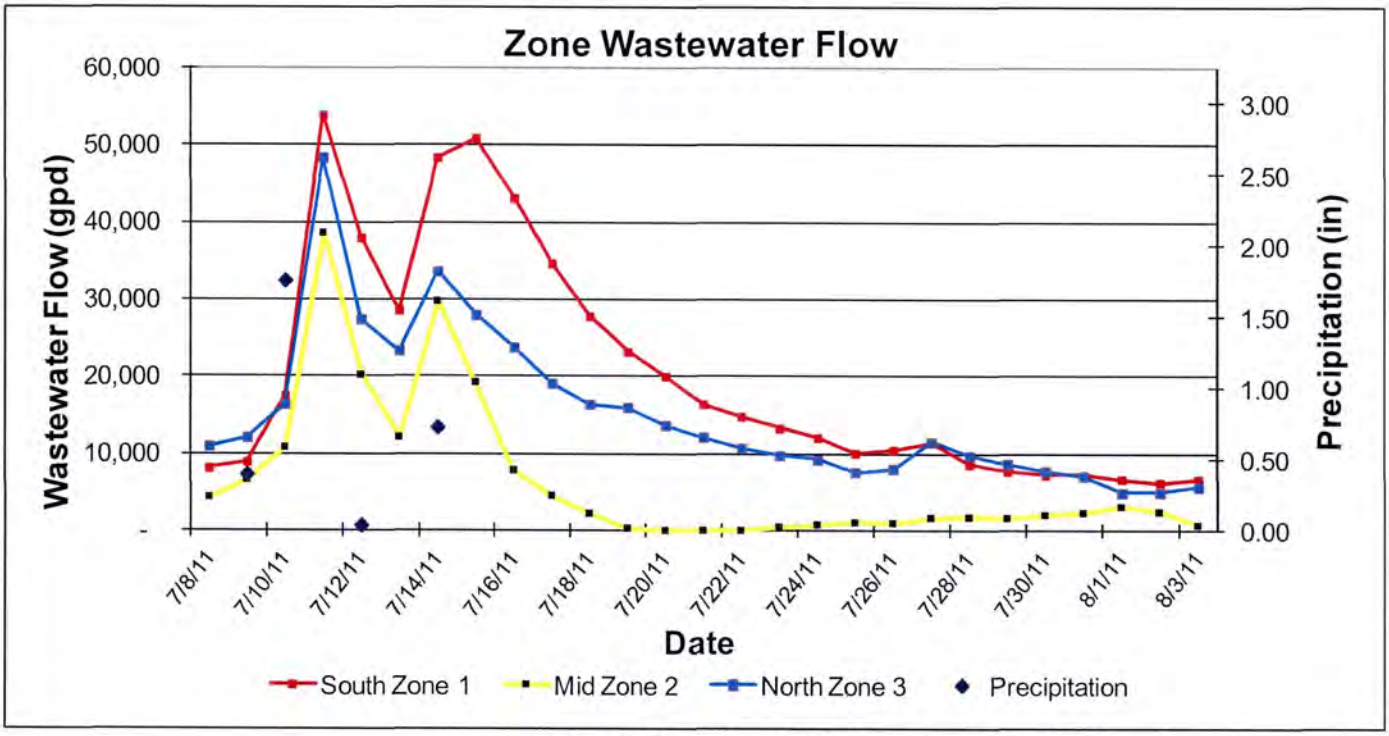


Figure 3.4.3-1: Flow Monitoring Zones

Figure 3.4.3-2 shows the results of the additional flow monitoring throughout town. All three zones indicated sharp increases in flow when a significant precipitation event occurred as illustrated on July 11 and 15. Zone 1 contributed the most flow out of the three flows. Zone 1 is an older part of town and is believed to have portions of the old storm sewer still connected.



	South Zone 1	Mid Zone 2	North Zone 3
Service Connections	30	24	32
Gallons Per Connection	18,077	7,305	12,734

Figure 3.4.3-2: Zone Monitoring Results

Zone 2 includes the main street business area in which several buildings do not have basements which should reduce the potential of sump pumps and foundation drains. Zone 2 has a low baseline flow several days after a significant rain event has passed; However, there is still indication that significant inflow is being collected in this zone. Zone 3 is the north area of town and does include the outfall line. This area is also believed to be collecting significant I&I. The additional monitoring indicated that I&I is occurring all over town and isn't in an isolated area or from an isolated source.

As would be expected, both flow monitoring graphs show a reduction in wastewater flows during periods of low precipitation. The periods of low precipitation generally give an indication of what can be expected for flow rates when inflow is excluded. The flows recorded from June 8 to June 20 and July 20 to the end of monitoring indicates a fairly stable baseline flow rate. This baseline flow rate is generally interpreted as the collection system's average domestic and infiltration flow rate. If the flow rates during these low precipitation time periods is evaluated, an average daily flow rate of 22,600 gallons is determined. Therefore, the amount of I & I experienced during this time period can be assumed to be 13,900 gpd (22,600 - 8,700).

The SD DENR requires that discharging treatment facilities like Astoria's have enough area to provide treatment and storage for 180 days of flow during the non-discharging winter storage period. The winter storage period generally has less potential for high-precipitation, high-inflow events. It is SPN's opinion that the periods during monitoring that received low precipitation resemble what can be anticipated for winter flow periods. For the purpose of this report, 13,900 gpd will be used as the average daily I & I for the winter storage period.

3.5 WASTEWATER TREATMENT

Astoria's wastewater treatment ponds are located approximately one-half mile north of the Town. The treatment system is shown in Figure 3.5-1. The treatment system consists of three storage/treatment cells. The wastewater treatment facility (WWTF) operates under Surface Water Discharge (SWD) Permit Number SD0025194. A copy of the permit, current standards and the most recent inspection report is contained in the appendix. Currently, Cell One has an approximate water surface area of 0.90 acres, and Cell Two and Cell Three have an approximate surface area of 0.45 acres.

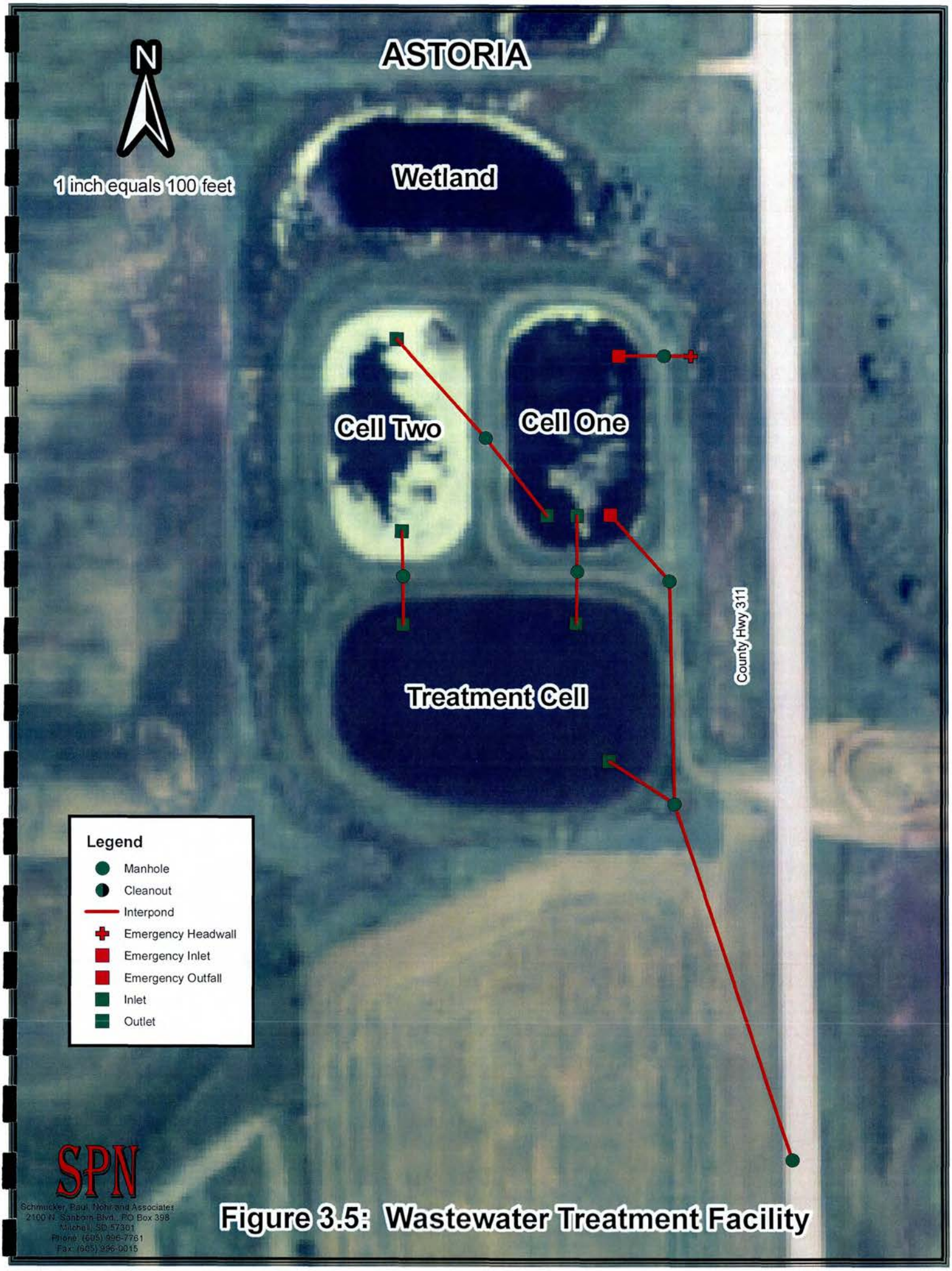


Figure 3.5: Wastewater Treatment Facility

On April 13, 2010, the South Dakota DENR conducted a surface water discharge compliance inspection. The following actions were recommended by the DENR:

- The dikes are showing signs of erosion. The ponds should be riprapped to stop the erosion caused by high water and wind/wave action.
- The operator does not have a way to measure incoming flow to the system. A flow monitoring device should be installed on the influent line and records compiled to help the city identify and correct I & I.
- There are no pond depth indicators in Cells One and Two. Pond depth indicators should be installed.

3.5.1 **Pond Organic Loading**

Section B.1a of Chapter IV of the DENR Design Criteria Manual states that the maximum design loading on the primary cell shall be 30 pounds of Biochemical Oxygen Demand (BOD_5) per acre per day. Based on this criteria, the total organic loading on Astoria's primary cell should not exceed 27 pounds. The manual also states that the total organic loading for the total surface area shall not exceed 20 pounds of BOD_5 per acre per day which would allow a total loading of 36 pounds per day for all three cells.

A typical BOD_5 rate that is collected by a community ranges from 0.17 to 0.22 pounds of BOD_5 per person per day. The available discharge data indicates the wastewater discharges from Astoria's wastewater treatment facility have not had excessive levels of BOD_5. Town officials have not reported periods of unusual odors which would be an indication of excessive organic loading. Assuming a maximum organic loading of 27 lbs of BOD_5 per acre per day on the existing 0.90 acre treatment cell one can conclude that the domestic organic loading is 0.186 lb BOD_5 per person per day which is well within the generally accepted range of values. Therefore, for purposes of evaluation in this report a per capita organic loading of 0.19 lb BOD_5 per person per day will be used. Table 3.5.1 shows that the primary cell is only slightly undersized for the estimated BOD_5 loading. When all three cells are considered for organic loading, the surface area

of the system exceeds the minimum recommended design size of 1.38 acres. The system appears to be adequately sized and treating the organic loading received.

Table 3.5.1: Pond Organic Loading

	Current
Equivalent System Population	145
BOD_5 per Capita (lbs / day)	0.19
Total BOD_5 (lbs / day)	27.55
Maximum BOD_5 per Acre (lbs / day)	30
Area Required for Primary Cell (ac)	0.92
Area Available (ac)	**0.90**
Maximum BOD_5 per Acre for Total System (lbs / day)	20
Area Required for Total System (ac)	1.38
Area Available (ac)	**1.80**

3.5.2 Pond Hydraulic Capacity

Section B.1 of Chapter IV of the DENR Design Criteria Manual states that a discharging facility shall provide a minimum storage capacity of 180 days in the entire facility. As discussed in Section 3.4.3, Astoria's estimated average daily wastewater flow during the winter storage period including I & I is 22,600 gpd. Table 3.5.2 shows the 180-day hydraulic loading of the treatment system including the 1975 design flow rates. The calculations show that the system is undersized for the current domestic and I & I flows encountered and is exceeding the original design capacity of the facility.

During the 81 days of flow monitoring conducted during the summer of 2011, the treatment facility received over three times the amount of influent as originally designed for in 1975. The town is planning an effort to reduce the amount of sump pumps discharging into the collection system. The level of I & I reduction that will result from this effort cannot be quantified at this time. The town should consider expanding the treatment facility or further efforts to reduce I & I from entering the collection system.

Flow monitoring would need to be conducted during the winter storage period after the implementation of the sump pump removal program is completed to further evaluate the results of efforts to reduce I & I and to further evaluate the wastewater flow rates experienced during this time period.

Table 3.5.2: 180-Day Hydraulic Loading

Estimated Influent	**Original Design 1975**	**Current 2011**
Effective System Population	163	145
Wastewater Flow (gpcpd)	30	60
Domestic Wastewater Flow (gpd)	4,890	8,700
I & I (gpd)	1,500	13,900
Design Storage Time (days)	180	180
180-Day Pond Influent (gal)	1,150,200	4,068,000
Pond One Storage Capacity (gal)	981,641	981,641
Pond Two Storage Capacity (gal)	490,820	490,820
Pond Three Storage Capacity (gal)	490,820	490,820
Total Storage Available (gal)	1,963,281	1,963,281
Excess Storage Capacity (gal)	813,081	-2,104,719
Additional Pond Area Required (ac)	**0**	**1.93**

Note: The storage capacity of each cell includes an allowable seepage rate of 1/16 inch per day and a reduction of the average precipitation received during the design storage time (7.11 inches).

3.5.3 Clean Water Diversion

A drainage ditch is constructed around the west side of the wastewater treatment system. During the spring 2011 the facility experience clean water from the drainage overtopping the dike on the southwest side of Cell One. Figure 3.5.3 shows two pictures from the flooding.

The channel around the pond collects approximately 250 acres of agricultural and town use drainage. The existing channel appears to have collected large amounts of silt and cattail growth greatly reducing the flow-through capacity of the channel. The channel should be cleaned and enlarged to adequately increase the flow-through capacity to reduce the potential of flooding the treatment facility.

Figure 3.5.3: Diversion Flooding Next to Cell One

3.6 FUTURE CONDITIONS

Information related to the project need and planning area is found in Section 2 of this report. Specific information on system population projections is found in Section 2.3. Essentially, the population of Astoria is anticipated to remain steady or slightly decrease in the next 20 years. Land use is not expected to change significantly in the immediate vicinity of the Town.

Due to the importance of conserving water, money and energy, various means for reducing wastewater flows and water usage are recommended. First, by using faucet aerators, reduced flush toilets and limited flow showerheads, wastewater flow and water use can be reduced. Second, sump pumps and drain tile that empty into the sanitary sewer system should be modified to discharge outside the sanitary sewer system.

4 DEVELOPMENT AND EVALUATION OF WASTEWATER ALTERNATIVES

The alternatives developed for the Town of Astoria were composed to demonstrate some options available to fix the identified deficiencies in the system. No alternative collection systems were considered in this report. The Town of Astoria has no known industries that require special treatment considerations.

4.1 CAUTIONARY NOTES CONCERNING COST ESTIMATES

The opinions of probable cost provided with the following alternatives reflect the anticipated costs for administration, engineering design, construction, contingencies, construction observation, and other costs related to completion of the project. The costs as presented are based on an analysis and comparison of projects of similar size and scope. The actual construction and project costs will vary on an individual project basis. The actual bid cost will reflect the bidder's evaluation of construction problems, weather, soils and difficulty of work. Thus, the engineer cannot be held responsible for the accuracy of the estimates made in this report, as the engineer has no control over the contractors' bid costs.

Changes in materials, equipment and energy costs, as well as availability of other construction work at the time of the bid opening, could substantially influence actual project cost. Construction costs will also vary somewhat based on the quantity of items necessary to construct the project. The quantities and costs contained in this report are preliminary estimates based on our best judgment without field measurements. Final quantities and opinions of probable cost and final construction costs must be based upon final design.

Different funding sources have different requirements for some non-construction items. Therefore, actual costs of non-construction items should be considered tentative at this time and subject to later modifications and adjustments as current situations and funding sources dictate. Further, inasmuch as the period of construction cannot be accurately

predicted, the costs as presented in this report have not been adjusted to reflect projected inflation factors. Therefore, it is important that the estimate of costs as presented be reviewed and updated periodically to reflect construction cost trends.

4.2 EQUIVALENT UNIFORM ANNUAL COST

The alternatives relating to Astoria's wastewater system that were evaluated are described in the following sections. In addition to an opinion of cost for each alternative discussed in this section, a breakdown of the estimated equivalent uniform annual cost (EUAC) is also given. The EUAC not only takes the capital costs into account when evaluating the options but also looks at the salvage value of the components and the expected annual operation and maintenance costs. The result is a comparison of the alternatives on an overall basis throughout a design life of 20 years. As a result, the EUAC may show that the lowest capital cost alternative is not the lowest cost alternative. This situation would occur when options have a low capital cost but high operation and maintenance costs. The terms and values utilized in performing the EUAC are given in Table 4.2.

Table 4.2: Equivalent Uniform Annual Cost Terminology and Values Used

Term	Definition	Value Used
Interest = I	Annual interest rate	4.50%
Salvage Value = SV	Value of component at end of 20-year design life	0% or 60%
Present Worth = PW	Present worth (equal to opinion of cost for that item)	Variable
Net Present Worth of Salvage Value = PWSV	Present worth of salvage value	41.5%
Net Present Worth of Capital Costs = NPW	Present worth less the present worth of the salvage value	Variable
Net Present Worth of Annual Costs	Present worth of annual costs over the 20-year design life	1300%
Equivalent Uniform Annual Costs = EUAC	Annual cost of total present worth of capital and annual costs	7.69%
Design Life	Length of time facilities are projected to operate and/or meet design parameters	20 years

4.3 PROPOSED WASTEWATER COLLECTION SYSTEM IMPROVEMENTS

The operating characteristics and deficiencies of the wastewater collection system are discussed in detail in Section 3 of this report. The following is a summary of the deficiencies of Astoria's wastewater collection system.

- The collection system is subjected to significant amounts of I & I.
- The town is unable to determine the location and significance of deficiencies contributing I & I and the overall condition of the collection system. No televising records of the collection system are available.

The alternatives relating to the sanitary sewer collection system that were evaluated are described in the following sections.

4.3.1 Collection System Alternative 1: Do Nothing

The first wastewater collection system alternative that was considered is the "do nothing" alternative. Because Collection System Alternative 1 will not address any of the problems with the system, it is not considered as an acceptable alternative.

4.3.2 Collection System Alternative 2: Clean and Televise Existing System

Collection System Alternative 2 considers the cleaning and televising of the entire wastewater collection system mainline. Based on the information presented in Section 3, it has been concluded that the Town is experiencing large amounts of I & I. Televising the system will help determine which portions of the system may be collecting I & I. Televising will further identify if there are structural deficiencies in the collection system and allow the Town to prioritize portions of the system to be repaired, but also allow the Town to determine if trenchless repairs to the sewer would be a viable alternative to total replacement. The estimated cost to clean and televise the collection system is shown in Table 4.3.2.

Table 4.3.2: Cost Estimate for Collection System Alternative 2

Sanitary Sewer Diameter (in)	Total Length of Sanitary Sewer (ft)	Cleaning and Televising Price (per ft)	Cost
8	10,670	$1.95	$20,900
		Cost for Selected Sizes	$20,900
		Incidental Construction	$3,000
		Estimated Project Cost	$23,900

4.4 PROPOSED WASTEWATER TREATMENT FACILITY IMPROVEMENTS

The operating characteristics and deficiencies of the wastewater treatment system are discussed in detail in Section 3.5 of this report. The following is a summary of the deficiencies of Astoria's wastewater treatment facility.

- The South Dakota DENR has recommended adding riprap to the treatment facility to avoid additional erosion.
- The treatment system is receiving over four times the amount of influent it was originally designed for in 1975.
- The diversion channel on the west side of the facility is undersized and floods the treatment facility.

As a result of these deficiencies, the following alternatives were developed.

4.4.1 Treatment System Alternative 1: Do Nothing

The first wastewater treatment system alternative that was considered is the "do nothing" alternative. Because Treatment System Alternative 1 will not address any of the problems with the system, it is not considered as an acceptable alternative.

4.4.2 Treatment System Alternative 2: Expand Wastewater Treatment Facility

Treatment System Alternative 2 considers expanding the wastewater treatment facility by adding a 1.93-acre cell. The additional storage would allow the facility to adequately store and treat the increased wastewater flow. This alternative considers constructing the additional cell adjacent to the outfall line on the south side of the existing treatment

facility as indicated in Figure 4.4.2. Additional flow monitoring will need to be conducted during the winter storage period (prior to final design and after the completion of the Town's sump pump disconnection program) to verify the wastewater flows for proper sizing of the proposed pond and determine the effectiveness of the town's sump pump removal efforts. The cost estimate and equivalent uniform annual cost for Treatment System Alternative 2 are shown in the following tables.

Table 4.4.2-1: Cost Estimate for Treatment System Alternative 2

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$18,275.00	$18,275.00
2	Remove and Stockpile Topsoil	2,200	CY	$2.00	$4,400.00
3	Unclassified Excavation & Embankment	40,000	CY	$2.50	$100,000.00
4	Pond Clay Liner	4,400	CY	$4.00	$17,600.00
5	Place Topsoil	2,200	CY	$3.00	$6,600.00
6	Inlet/Outlet Structure	2	EA	$3,000.00	$6,000.00
7	Pond Depth Indicator	1	EA	$2,000.00	$2,000.00
8	Siphon Breaker	1	EA	$5,500.00	$5,500.00
9	Seepage Collars	2	EA	$500.00	$1,000.00
10	8" Gate Valve	2	EA	$2,500.00	$5,000.00
11	Inter-Pond Piping (8" DIP)	275	LF	$60.00	$16,500.00
12	Bypass Pumping	1	LS	$5,000.00	$5,000.00
13	Sanitary Sewer Manhole	2	EA	$3,200.00	$6,400.00
14	Seed, Fertilize & Mulch	6	AC	$2,000.00	$12,000.00
15	Fence Removal	650	LF	$1.50	$975.00
16	Fence	1,100	LF	$2.50	$2,750.00
17	Erosion Control	1	LS	$8,000.00	$8,000.00
18	Incidental Construction	1	LS	$20,000.00	$20,000.00
				Subtotal	$238,000.00
				Contingencies (10%)	$24,000.00
				Construction Total	$262,000.00
				Design Engineering	$35,000.00
				Bidding and Contract Documents	$5,000.00
				Construction Engineering	$45,000.00
				Administration & Legal	$8,000.00
				Total Project Cost	$355,000.00

Table 4.4.2-2: EUAC for Treatment System Alternative 2

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$18,275.00	$0.00	$0.00	$18,275.00
Remove and Stockpile Topsoil	$4,400.00	$0.00	$0.00	$4,400.00
Unclassified Excavation & Embankment	$100,000.00	$0.00	$0.00	$100,000.00
Pond Clay Liner	$17,600.00	$0.00	$0.00	$17,600.00
Place Topsoil	$6,600.00	$0.00	$0.00	$6,600.00
Inlet/Outlet Structure	$6,000.00	$3,600.00	$1,492.71	$4,507.29
Pond Depth Indicator	$2,000.00	$0.00	$0.00	$2,000.00
Siphon Breaker	$5,500.00	$0.00	$0.00	$5,500.00
Seepage Collars	$1,000.00	$0.00	$0.00	$1,000.00
8" Gate Valve	$5,000.00	$3,000.00	$1,243.93	$3,756.07
Inter-Pond Piping (8" DIP)	$16,500.00	$9,900.00	$4,104.96	$12,395.04
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Sanitary Sewer Manhole	$6,400.00	$3,840.00	$1,592.23	$4,807.77
Seed, Fertilize & Mulch	$12,000.00	$0.00	$0.00	$12,000.00
Fence Removal	$975.00	$0.00	$0.00	$975.00
Fence	$2,750.00	$35,771.83	$14,832.53	-$12,082.53
Erosion Control	$8,000.00	$0.00	$0.00	$8,000.00
Incidental Construction	$20,000.00	$0.00	$0.00	$20,000.00
Capital Costs	$117,000.00	$0.00	$0.00	$117,000.00
Total Construction Cost	$355,000.00	$56,110.00	$23,270.00	$331,730.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$400.00	$5,203.17
Materials	$300.00	$3,902.38
Miscellaneous	$200.00	$2,601.59
Subtotal	$900.00	$11,707.14

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$331,730.00
NPW of O & M Costs	$11,707.14
Total Net Present Worth	$343,437.14
Equivalent Uniform Annual Cost	$26,402.12

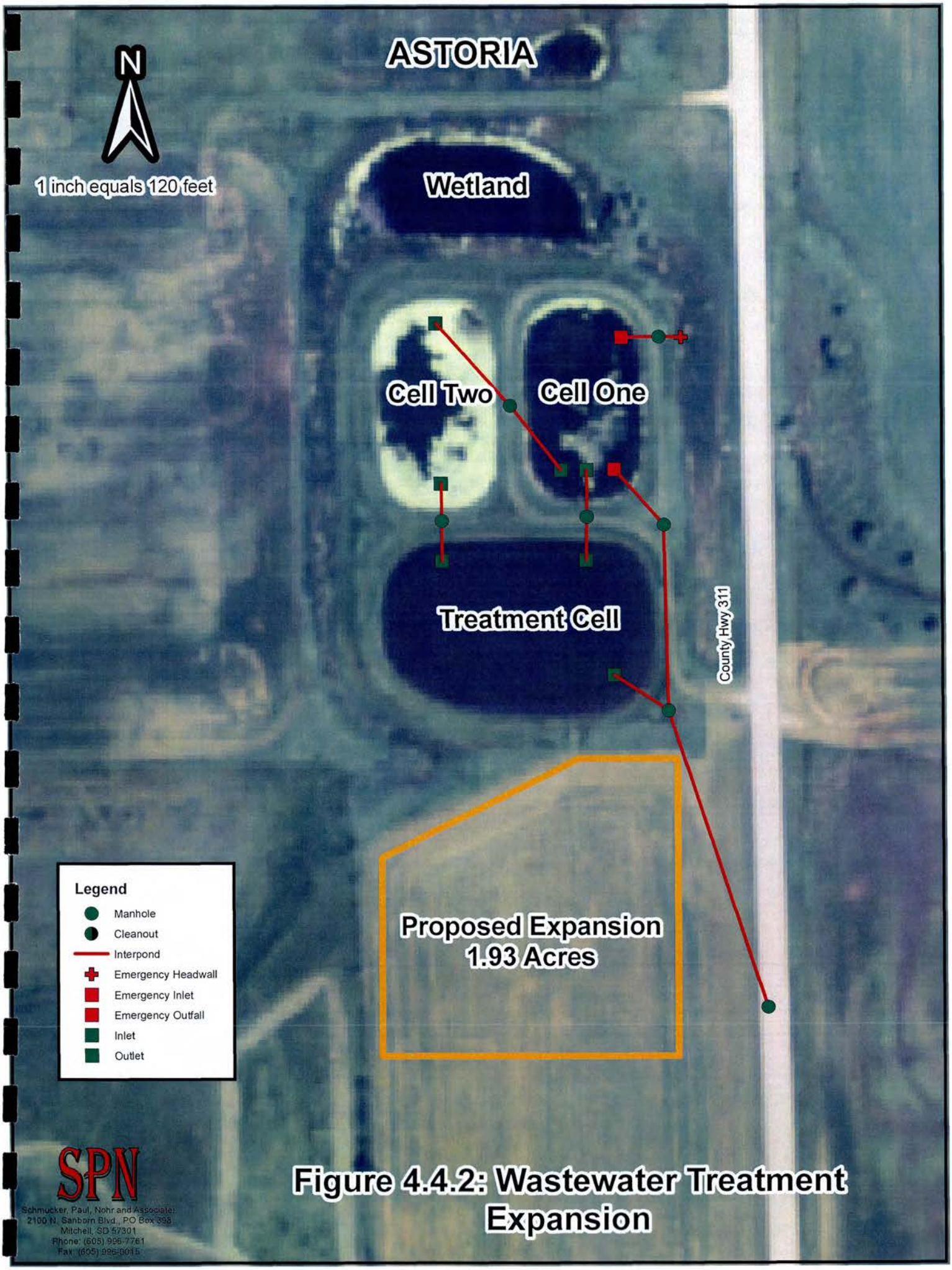


Figure 4.4.2: Wastewater Treatment Expansion

4.4.3 Treatment System Alternative 3: Diversion Channel Rehabilitation

Treatment System Alternative 3 considers rehabilitating the diversion channel on the west side of the WWTF. Reshaping the channel and raising the storage cell embankments would increase the flow-through capacity of the diversion channel. Figure 4.4.3 shows the location of the rehabilitation.

Based on data collected relative to existing elevations, cross sections and slope, it has been determined that the existing channel is capable of carrying a flow of approximately 120 cubic feet per second (CFS). Based on the land use, elevation differentials and distances within the 250-acre drainage, this is equivalent to a rainfall intensity of approximately 1.50 inches per hour. According to precipitation intensity data for the Astoria area, this is equivalent to a rainfall event that can reasonably be expected once every year. The alternative being considered at this time is the reconstruction of the channel to a condition, slope and cross section that would allow it to carry a flow of approximately 350 cfs. Based on the topography and land use within the drainage basin, this would be equivalent to a rainfall event that can be reasonably expected to occur once every 25 years. This alterative also includes the placement of riprap to the channel walls to protect the channel from erosion during periods of high rates of flow. The cost estimate and equivalent uniform annual cost for Treatment System Alternative 3 are shown in the following tables.

Table 4.4.3-1: Cost Estimate for Treatment System Alternative 3

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$3,500.00	$3,500.00
2	Remove and Stockpile Topsoil	400	CY	$2.00	$800.00
3	Unclassified Excavation & Embankment	400	CY	$2.50	$1,000.00
4	Borrowed Embankment	100	CY	$7.00	$700.00
5	Riprap	610	TN	$30.00	$18,300.00
6	Place Topsoil	400	CY	$3.00	$1,200.00
7	Seed, Fertilize & Mulch	1	AC	$2,000.00	$2,000.00
8	Fence Removal	700	LF	$1.50	$1,050.00
9	Fence	700	LF	$2.50	$1,750.00
10	Erosion Control	1	LS	$5,000.00	$5,000.00
11	Incidental Construction	1	LS	$3,000.00	$3,000.00
				Subtotal	$38,300.00
				Contingencies (10%)	$4,000.00
				Construction Total	$42,300.00
				Design Engineering	$8,000.00
				Permitting	$5,000.00
				Bidding and Contract Documents	$4,000.00
				Construction Engineering	$9,000.00
				Administration & Legal	$1,500.00
				Total Project Cost	$69,800.00

Table 4.4.3-2: EUAC for Treatment System Alternative 3

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$3,500.00	$0.00	$0.00	$3,500.00
Remove and Stockpile Topsoil	$800.00	$0.00	$0.00	$800.00
Unclassified Excavation & Embankment	$1,000.00	$0.00	$0.00	$1,000.00
Borrowed Embankment	$700.00	$0.00	$0.00	$700.00
Riprap	$18,300.00	$0.00	$0.00	$18,300.00
Place Topsoil	$1,200.00	$0.00	$0.00	$1,200.00
Seed, Fertilize & Mulch	$2,000.00	$0.00	$0.00	$2,000.00
Fence Removal	$1,050.00	$0.00	$0.00	$1,050.00
Fence	$1,750.00	$725.63	$300.88	$1,449.12
Erosion Control	$5,000.00	$0.00	$0.00	$5,000.00
Incidental Construction	$3,000.00	$0.00	$0.00	$3,000.00
Capital Costs	$31,500.00	$0.00	$0.00	$31,500.00
Total Construction Cost	$69,800.00	$730.00	$300.00	$69,500.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$300.00	$3,902.38
Materials	$250.00	$3,251.98
Subtotal	$550.00	$7,154.37

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$69,500.00
NPW of O & M Costs	$7,154.37
Total Net Present Worth	$76,654.37
Equivalent Uniform Annual Cost	$5,892.89

Figure 4.4.3: Diversion Channel Rehabilitation

5 SELECTION OF WASTEWATER ALTERNATIVES

5.1 WASTEWATER COLLECTION SYSTEM

Collection System Alternative 1 (Do Nothing) is not recommended because it would not address any of the concerns with the existing wastewater collection system.

Collection System Alternative 2 (Clean and Televise Existing System) with a total project cost of $23,900 is recommended. This alternative will allow the Town to evaluate the condition of the entire collection system. With this information, the Town can identify sources of inflow and infiltration.

5.2 WASTEWATER TREATMENT SYSTEM

Treatment System Alternative 1 (Do Nothing) is not recommended because it would not address any of the identified deficiencies the treatment system appears to be experiencing.

Treatment System Alternative 2 (Expand Wastewater Treatment Facility) with a total project cost of $345,000 is recommended. This alternative would expand the existing facility to provide adequate treatment and storage of the wastewater flow that Astoria is experiencing. Additional flow monitoring will need to be conducted to verify the size of the proposed pond and determine the effectiveness of the town's sump pump removal efforts prior to final design.

Treatment System Alternative 3 (Diversion Channel Rehabilitation) with a total project cost of $69,800 is recommended. This alternative would prevent the treatment facility from being flooded during high intensity rain events.

5.3 IMPACT ON USER FEES

A summary of the costs associated with the alternatives that were chosen is given in Table 5.3-1.

Table 5.3-1: Summary of Costs

Wastewater Collection	
Alternative 2: Clean and Televise Existing System	$23,900
Wastewater Treatment	
Alternative 2: Diversion Channel Rehabilitation	$69,800
Alternative 3: Expand Treatment Facility	$355,000
	$448,700

As part of the cost analysis of the recommended improvements, the estimated impact on the monthly user fees has been calculated. Financial data supplied by the Town of Astoria was used to determine the current operational status of the funds. The current sewer rates are $22 per month and are at the necessary rate to be eligible for grant dollars.

Table 5.3-2 summarizes the financial data that is used to determine the current and proposed operational status of the wastewater fund with the recommended improvements. The wastewater fund is shown to require additional revenue. These calculations were based on a 100% loan. The payments are based on an interest rate of 3.25% for 30 years and a capital recovery factor of 5.27%.

The short-lived asset replacement value shown in Table 5.3-2 considers costs the town should budget for in order to maintain its current system. This table indicates that the Town needs to budget $500 annually in order to conduct periodic cleaning and televising on portions of the collection system.

The actual rates will be dependent upon the funding that would be obtained.

Table 5.3-2: Wastewater Operation Fund

Gross Revenue	$18,400.00
Proposed O & M Cost	-$7,500.00
Retirement of Current Debt	$0.00
Short-Lived Asset Replacement	-$500.00
Net Income	**$10,400.00**
Retirement of Debt Incurred with This Project	-$23,638.29
Amount to Be Set Aside for Debt Reserves	-$2,363.83
Remaining Surplus After Project	**-$15,602.12**
Increase of Sewer Charge	$19.41
Number of Accounts	67
Added Revenue	$15,602.12
Surplus After Increase in Sewer Charge	**$0.00**

Note: The gross revenue amount is the estimated 2012 total using the new sewer service fee of $22 per month, not the projected 2011 budget.

An increase of $19.41 per month is needed in order to balance the sewer fund if the Town is unable to secure grant funding. Since the town is eligible for grant funding, a grant of 60% or $270,000 would be needed to fund the recommended alternatives without increasing the monthly service charges to the residences. Table 5.3-3 reflects different grant/loan combinations and shows how the sewer rates will be affected in Astoria. The actual rates will be dependent upon the funding that would be obtained and the current interest rates available at that time.

5.4 CAPITAL FINANCING PLAN

The Town of Astoria should make applications to state and federal resources for loan and grant assistance to begin construction during the 2012 season.

Table 5.3-3: Sewer Rate Analysis

Funding Percentages	0/100	10/90	20/80	30/70	40/60	50/50	60/40	70/30	80/20	90/10	100/0
	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan	grant/loan
Annual O & M	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500	$7,500
Grant Amount	$0	$44,870	$89,740	$134,610	$179,480	$224,350	$269,220	$314,090	$358,960	$403,830	$448,700
Loan Amount	$448,700	$403,830	$358,960	$314,090	$269,220	$224,350	$179,480	$134,610	$89,740	$44,870	$0
Annual Loan Payment	$23,638	$21,274	$18,911	$16,547	$14,183	$11,819	$9,455	$7,091	$4,728	$2,364	$0
Debt Reserves	$2,364	$2,127	$1,891	$1,655	$1,418	$1,182	$946	$709	$473	$236	$0
Current Debt/Asset	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Total Annual Costs	$34,002	$31,402	$28,802	$26,201	$23,601	$21,001	$18,401	$15,801	$13,200	$10,600	$8,000
Annual Revenue	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400
Surplus/Deficit After Project	-$15,602	-$13,002	-$10,402	-$7,801	-$5,201	-$2,601	-$1	$2,599	$5,200	$7,800	$10,400
Minimum Sewer Rate Increase	$19.41	$16.17	$12.94	$9.70	$6.47	$3.24	$0.00	$0.00	$0.00	$0.00	$0.00
Current Sewer Rate	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00	$22.00
Proposed Sewer Rate (5,000 gal)	$41.41	$38.17	$34.94	$31.70	$28.47	$25.24	$22.00	$22.00	$22.00	$22.00	$22.00

* Interest Rate = 3.25%
Repayment Term 30 years

5.5 VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The Town of Astoria is planning to conduct a public hearing on the proposed project. Information related to the hearing will be submitted after it is conducted.

6 SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS FOR WASTEWATER IMPROVEMENTS

6.1 JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

The alternatives chosen for the wastewater system are intended to repair the deficiencies that the system is experiencing and begin the process of further evaluating the collection system.

6.2 DESIGN OF SELECTED PLAN

The improvements to the system will provide enhanced flexibility in operation and will be designed in accordance with the SD DENR Criteria and other accepted principles and standards.

6.3 ARRANGEMENT FOR IMPLEMENTATION

This report provides information to describe the proposed project and to support the Town Board's decision to proceed with the selected alternatives as quickly as possible. Final design will be completed by the Town of Astoria's consultant and approved by the Department of Environment and Natural Resources, as it is definitely a "work of sanitary significance". Cost estimates have been prepared and are referenced elsewhere in this document.

The project will be bid in accordance with state statutes that govern municipal corporations and will be constructed by the lowest responsible bidder.

Table 6.3: Proposed Schedule

Facility Plan Submitted to Funding Agencies	October 1, 2011
Environmental Review Completed	October 31, 2011
Funding Agency Approval of Facility Plan	October 31, 2011
Final Funding Package Complete	March 31, 2012
Begin Design	March 31, 2012
Plans & Specifications Submitted to DENR	May 1, 2012
Plans & Specifications Approved by DENR	June 1, 2012
Advertisement for Bids	June 2, 2012
Open Bids	July 2, 2012
Award Bids	July 11, 2012
Begin Construction	August 3, 2012
Construction Complete	October 2, 2012
Project Close-out	November 1, 2012

6.4 LAND ACQUISITION

Land acquisition is not anticipated for the proposed improvements.

6.5 INTERAGENCY AGREEMENTS

No operating agreements with other agencies are needed as the Town of Astoria owns, operates and maintains its municipal wastewater system. Loan documents will have to be executed with the appropriate lender but as Astoria is a municipal corporation, it has the legal authority to enter into such agreements. Astoria's attorney will advise the Town Board on any legal matters related to this issue.

7 FINANCING OPTIONS

7.1 GENERAL

Financing any major construction project is difficult for a community that has limited resources. "Routine" community needs such as the improvements to streets, equipment replacement, correction of drainage problems, and solid waste issues cannot be neglected. These needs must be met and projects relating to addressing them must continue to be financed.

These "routine" types of projects frequently consume all or nearly all available community financial resources just to maintain an acceptable level of service. Consequently, to finance major capital improvement projects, other methods of obtaining capital must be investigated.

7.2 PAY-AS-YOU-GO

For small communities, the most common method of financing needed improvements is the "pay-as-you-go" method. This method obtains revenue from general taxation, fees, service charges, special funds and/or special assessments. The advantages of this method are:

1) No interest payments; and
2) Greater budget flexibility.

Disadvantages of this method are:

1) Inequities between age groups (older citizens pay for a share of the project and younger citizens who may not have paid any of the costs realize greater benefits simply because of greater life spans);

2) Difficulty in generating large amounts of capital that is often required for large scale capital improvements; and

3) Large scale capital improvements often cannot be constructed efficiently by phased construction.

7.3 RESERVE FUNDS

A variation of the "pay-as-you-go" method is using reserve fund financing. Communities using this method accumulate funds in advance for construction of needed capital improvements. This accumulation may be the result of surplus operating funds that are allowed to remain in the operating budget from year to year. These funds are often "earmarked" for a specific purpose. It may also be revenues from a certain percentage of the water or sewer rate that are specifically placed in a depreciation account. Financing projects in this manner is often attractive to communities.

This method can have its drawbacks. The most obvious drawback is that the fund has to have been established for some time to allow it to generate sufficient capital for a project that is needed today. Also, good management is required to ensure that the investment pays an adequate return. If the interest generated on the investment is not greater than the inflation rate, then gains in the accumulation of the fund may be lost to inflation.

7.4 SALES TAXES

Sales taxes can also be used to finance capital improvements. State statutes allow a Town to dedicate sales tax revenues to capital improvement construction. A long-range plan can be developed to allow capital improvements to be constructed in phases. As revenue is generated each year, a segment of the overall plan is constructed. This method of constructing capital improvement projects is being used successfully by many communities.

7.5 BONDS

Another method of generating revenue for capital improvements is through the sale of bonds on the private bond market. Three different types of bonds are frequently used to finance capital improvement projects. Each has different requirements and will need the involvement of the Town Attorney. The three types are General Obligation (GO), revenue and special assessment.

7.6 GENERAL OBLIGATION BONDS

General Obligation bonds always require a bond election with a 60% majority because General Obligation bonds pledge the taxing authority of the Town to repay the bond. As they are backed by the taxing authority of the Town, General Obligation bonds frequently offer a lower interest rate than revenue bonds.

7.7 REVENUE BONDS

Revenue bonds, which pledge revenues (that is, user fees) generated from the project, are often sold to finance capital improvement projects. They, like special assessment bonds, do not require a bond election but with any action of a governmental body, the enabling ordinance that must be approved by the board can be referred. Sales tax revenues can be and are frequently used to repay both revenue and general obligation bonds.

7.8 SPECIAL ASSESSMENT BONDS

Special assessment bonds have a limited payback period. Assessment for principal and interest repayment are levied against and collected from adjacent property owners over a given period of years. The special assessments are collected with property tax payments. Street improvements are frequently financed through the use of special assessment bonds.

7.9 LEASE-PURCHASE

Local financial institutions are becoming interested in financing community improvements through lease-purchase programs. This interest appears to be the result of recently passed federal legislation that provides tax advantages to financial institutions that participate in community improvement efforts. Lease-purchase plans can also use sales tax revenues to provide the vehicle for repayment.

7.10 OTHER SOURCES OF FINANCING

All of the previously discussed methods of financing rely on 100% local funding. Often it is difficult, if not impossible, for a community to finance projects with 100% local funding. Fortunately, there are other resources and programs available that can be used

in conjunction with local funding to assist communities in financing projects such as the one being considered by the Town.

7.11 FEDERALLY FUNDED LOANS / GRANTS

Federal agencies such as the US Department of Agriculture's Rural Development / Rural Utility Service (RD / RUS) has both grant and loan funds available for financing community improvements. RD / RUS requires a preliminary engineering report and pre-application, along with certain other information, before it can invite a community to submit a full application for project funding.

While the RD / RUS is the primary federal agency that funds local projects, there are other federal agencies that do assist local communities under "special" circumstances. These agencies include, but are not limited to, the Federal Emergency Management Agency (FEMA), the Economic Development Administration (EDA) and the US Department of Housing and Urban Development (HUD). However, these federal agencies normally do not become involved in funding local projects unless there has been a declared disaster or a major economic development activity is imminent.

7.12 STATE FINANCED LOANS / GRANTS

The State of South Dakota has several programs that can provide financial assistance for community facility improvements. The programs are operated through various departments of state government. Some are financed with 100% state resources, some use a combination of state and federal funds and some are federal "pass-through" funds.

7.13 DENR PROGRAMS

The Department of Environment and Natural Resources (DENR) has a low interest loan and grant program known as the Consolidated Water Facilities Construction Program (CWFCP). This program was established in 1986 by combining several existing grant and loan programs. It is funded entirely with state financing and is designed to provide financial assistance through grants and loans for water and wastewater projects throughout the state.

DENR also operates the State Revolving Fund (SRF) loan program. It began in 1987 as a result of amendments to the Federal Clean Water Act. This program was designed to replace the EPA, the federal construction grants program. EPA had, for a number of years, provided grants directly to communities to construct and/or rehabilitate wastewater treatment and collection systems. The funding from the construction grants program has been made available to the state. The federal funds are to be used in combination with state funds to create a revolving loan program that will be self-perpetuating. SRF funds are targeted specifically to wastewater treatment and collection systems, storm drain systems and other construction activities that will improve surface and groundwater quality.

7.14 GOED PROGRAM

The Governor's Office of Economic Development (GOED) administers the Community Development Block Grant (CDBG) program. This program utilizes the US Department of Housing and Urban Development (HUD) small cities program funding. CDBG funds may be used for a variety of community development activities, including water and sewer system renovations and rehabilitation. The emphasis of this program is to provide benefits for low and moderate income people. Information supplied by GOED indicates that most communities can probably qualify for funds from this program; however, an income survey may be necessary.

7.15 SUMMARY OF FUNDING OPTIONS

No existing program will provide a 100% grant to finance a project. Most of the programs (both state and federal) require or strongly recommend that the applicant provide some local funding. Low interest loans and grant offers are frequently "packaged" with available local funds to completely finance capital improvement project activities. DENR also has minimum rate requirements that must be met by a community for it to be eligible for grant funding under the CWFCP. The department is recommending that the minimum rate for municipal wastewater is $22.00 per month for 5,000 gallons of water used. If a community does not have its rates at or above this level, it will not be eligible for grant assistance from the consolidated program.

7.16 FUNDING RECOMMENDATIONS

Given the cost of construction of a project of this scope and the limited amount of local finances available, it is recommended that the community should:

1. Make application to place this project on the State Water Facilities Plan.

2. Evaluate its own financial resources, rate structure and various funding sources available to construct capital improvement projects to see if rate increases or other funding options may be used to finance all or part of the proposed project.

3. Complete applications for financial assistance to programs such as the CWFCP, CDBG Program, and/or USDA's Rural Development / Rural Utility Service Water and Sewer Program when the project is approved for the State Water Facilities Plan.

The process of completing applications for financial assistance could begin when an application to the State Water Facilities Plan is submitted. Early application for financial assistance could speed the process of obtaining financing for project construction as obtaining financing can be a lengthy process.

8 REFERENCES

Environmental Protection Agency, (1975). Handbook for Sewer System Evaluation and Rehabilitation (Washington, D.C.: Office of Water Program Operations), pp.

National Environmental Satellite, Data, and Information Service, *Climatological Data, Monthly Summary for South Dakota*
http://nndc.noaa.gov/?http://ols.ncdc.noaa.gov/cgi-bin/nndc/gensub.cgi.

United States Census Bureau, *American Fact Finder for Astoria South Dakota.* http://factfinder.census.gov/home/saff/main.html?_lang=en.

Soil Conservation Service, South Dakota Agricultural Experiment Station. Soil Survey of Deuel County, South Dakota. South Dakota: National Cooperative Soil Survey, 1997.

South Dakota Department of Environment and Natural Resources, (May 1990). *Recommended Design Criteria Manual, Wastewater Collection and Treatment Facilities,* Pierre, SD: Division of Environmental Regulation.

Appendix A

Wastewater Treatment Facility Inspection Report

October 07, 2010

The Honorable Terry Lovre
Mayor, City of Astoria
PO Box 8
Astoria, SD 57213

RE: Surface Water Discharge Compliance Inspection (SWD Permit Number: SD0025194)

Dear Mayor Lovre:

The South Dakota Department of Environment and Natural Resources conducted a Surface Water Discharge Compliance Inspection at the town's wastewater treatment facility on April 13, 2010. I appreciate Keith Olson's time and cooperation in supplying the requested information.

I have attached an inspection summary and a copy of the inspection report. Please pay special attention to the Inspection Summary tables and implement the required corrective actions as soon as possible. All corrective actions taken will be reviewed during our next inspection at your facility. **Within 30 days of receipt of this report, please submit a summary of the corrective actions taken to the department at the address listed in the letterhead.**

Thank you for your continued efforts to protect the environment and natural resources of South Dakota. If you have any questions concerning the attached report, please contact me at (605) 773-3351.

Sincerely,

Bret Graves

Bret C. Graves
Natural Resources Project Scientist
Surface Water Quality Program
Enclosures

cc: Mr. Seth Draper, EPA Region 8
SWD File - Pierre

INSPECTION SUMMARY

Facility: City of Astoria

SWD Permit: SD0025194

Inspection Date: April 13, 2010

The following comments and corrective actions are ***required*** in order to come into compliance with the town's Surface Water Discharge permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The City of Astoria has been late submitting some of its Discharge Monitoring Reports (DMRs).	Page 9 of your SWD Permit states under Reporting: *Monitoring results obtained during the previous three months shall be summarized and reported on a Discharge Monitoring Report form. These must be postmarked no later than the 28th day of the month following the completed reporting period.* Failure to submit the DMRs is a violation of your permit. DMRs shall be submitted in accordance with the following schedule: • January – March: Due April 28th • April – June: Due July 28th • July – September: Due October 28th • October – December: Due January 28th
An effluent limit of pH was violated during the June 2010 discharge.	These violations are not acceptable and can result in enforcement action including penalties of up to $10,000 per day. The operator should schedule discharges so that the wastewater is treated adequately.
Missing wastewater expenses and revenue along with residential and commercial sewer use fee.	Please submit the wastewater expenses and revenue, along with the residential and commercial sewer use fee for the 2009 fiscal year.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The operator stated he is inspecting the pond site monthly as required by the permit. However, he is not keeping an inspection notebook documenting these inspections of the wastewater treatment facility as required by the permit.	All pond site inspections conducted by town personnel must be documented in a notebook to be reviewed by SDDENR personnel when an inspection occurs. At a minimum, the notebook shall include the following: 1. The measured water depth in all cells and the artificial wetlands; 2. Identification of operational problems and/or maintenance problems; 3. Recommendations, as appropriate, to remedy identified problems; 4. A brief description of any actions taken with regard to problems identified; and 5. Other information, as appropriate. The inspection notebook is a condition of the SWD permit.

The following comments and corrective actions are ***recommended*** and are items that will improve the operation of your facility.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
We would like to encourage you to give Mr. Olson or another representative of Astoria the opportunity to attend the wastewater training courses sponsored by the state to upgrade skills and share knowledge concerning the operation and maintenance of municipal wastewater systems.	For more information as to dates and locations of upcoming courses in your area, contact South Dakota Association of Rural Water Systems, under contract with DENR, at 5009 W. 12th Street, Suite 5, Sioux Falls, SD 57106. Phone: (605) 336-7219. Website: http://www.sdarws.com.
Emergency procedures have not been established in the case of a major storm event, a sewer main break, or a chemical release into the sewer system.	The city may wish to consider establishing written emergency procedures to ensure city staff is prepared to address emergencies that may arise during the operation of the wastewater collection and treatment system.

COMMENTS	RECOMMENDED CORRECTIVE ACTIONS
The dikes are showing signs of erosion.	The pond(s) should be riprapped to stop the erosion caused by high water and wind/wave action. If not corrected, this erosion may cause operation and maintenance problems and result in major repair expenses. Please see enclosed sheet on riprapping.
At the time of inspection the cells had some vegetation growing in them	In order for your treatment pond(s) to operate properly, the rush and cattail growth in the ponds should be eliminated by spraying and/or cutting to prevent erosion/seepage damage to the dikes and attracting rodents.
The operator does not have a way to measure incoming flow to the system.	We recommend that a flow measuring device be installed on the influent line and records compiled of the readings. Influent records can help the city identify and correct I/I (inflow/infiltration) problems in the collection system.
There are no pond depth indicators in Cells #1 and #2.	A pond depth indicator should be installed in each pond. The operator should record the ponds during each inspection. These records will be helpful in determining flows to and from the pond(s) and aid in maintaining the proper operating depths in the pond(s) at all times. The pond depth indicator(s) can also be used as the effluent flow measurement device. Please, note, discharge flow measurement is a requirement of the SWD permit.

NON-MECHANICAL FACILITY INSPECTION CHECKLIST

SOUTH DAKOTA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

I. General Facility Information

Name	City of Astoria		
Location	½ mile north of town in the southeast ¼ of the northeast ¼ of Section 26, Township 113 North, Range 48 West in Deuel County		
SWD Permit No.	SD0025194		
Contact Person / Title	Keith Olson/Maintenance	Phone Number (Office, Cell, Home, Etc)	(605) 832-2121
Responsible Party/Title	Vicki Ovall/Finance Officer	Phone Number (Office, Cell, Home, Etc)	(605) 832-2451
Mailing Address	PO Box 8, Astoria, SD 57213		
Street Address	342 Main St., Astoria, SD 57213		
Inspection Date	April 13, 2010	Last Inspection Date	March 31, 2006
Entrance Time	15:10	Exit Time	16:15
Permit Effective Date	January 01, 2009	Permit Expiration Date	December 31, 2013
Avg. Reported Flow Rate	Unknown	Avg. Design Flow Rate	0.009
Population Served	150	Design Population Equivalent (if known)	Unknown
Date Facility Began Operation	1976	Dates of Facility Upgrades	None
Receiving Water:	Unnamed tributary to an unnamed wetland		
Classification:	9 10		

Facility Description from Statement of Basis and Flow Diagram

The wastewater treatment facility consists of a three-cell stabilization pond system. This system is operated in series and has an average design flow of 0.009 million gallons per day (MGD). The first pond is 0.9 acres, followed by two 0.45 acre ponds. The system was designed for a controlled seasonal discharge and was constructed in 1976.

Does the facility match the above description? **Yes**

Is a permit modification needed? **No**

For office use only:	*OMA* Yes ☐ No ☒	*OME* Yes ☐ No ☒	*SEV* Yes ☐ No ☒	*ENF* Yes ☐ No ☒

II. Personnel Inventory and Budget

Number of personnel: **1**

Certification	Class I	Class II	Class III	Class IV
Wastewater Treatment				
Wastewater Collection				

Is a certified operator required? If yes, what classification is required? **None**

Budget: **Fiscal Year 2009**

Annual wastewater expenses $ _____ Residential Sewer Use Fee $ _____

Annual wastewater revenue $ _____ Commercial Sewer Use Fee $ _____

Describe any wastewater projects planned during the next three years. **The bank is eroding and plan to fix that, also re-line the ponds with clay**

Describe measures taken to raise funds for the project(s). **None**

Personnel and budget comments: **Please submit the wastewater expenses and revenue, along with the residential and commercial sewer use fee for the 2009 fiscal year.**

III. Required Recordkeeping and Reporting

Permit Verification

	Yes	No	N/A
1. Is a current copy of the permit and other related materials readily available? **The finance officer has the permit.**		X	
2. Are the number and location of discharge points as described in the permit? If no, explain.	X		
3. Is the facility information correct in the database? If not, list corrected information below.	X		
4. Is the facility information correct in ICIS ? If not, list corrected information below.	X		
5. Has there been any new, different, or increased loading to the WWTF? If yes, describe changes.		X	
6. Are influent flows increasing or decreasing? **Decreasing**			
7. List any industries/non-domestic contributors.			X

Permit verification comments: **I did not speak to Keith prior to meeting him for the inspection. I spoke with the finance officer who told him when I was coming. He was busy at the time and may not have had enough time to get all of the requested information for the inspection. He did not have the permit with him but said the finance officer would have all of that.**

Inspection Records

	Yes	No	N/A
1. The following necessary information is current, complete, and reasonably available:			
a. Inspection notebooks for the WWTF with the following information:	X		
i. Date and time of the inspection	X		
Ii Name or initials of inspector	X		
iii. Facility's discharge status	X		
iv. Measured depth of the ponds or measured freeboard		X	
v. Identification of operational/maintenance problems		X	
vi. Recommendations to remedy problems		X	
vii. Steps taken to remedy problems		X	
b. Lab results		X	
c. pH testing		X	
d. Discharge Monitoring Reports (DMRs)	X		
e. Emergency discharge forms	X		
2. Is information is maintained for the required 3-year period?	X		

Inspection records comments: **Notebook is not complete.**

Sampling and Laboratory Information

	Yes	No	N/A
1. The following sampling and analysis requirements are met:			
a. Dates, times, locations of sampling are recorded.	X		
b. Initials of person performing sampling are recorded.	X		
c. The pH meter meets the following specifications:	X		
i. Capable of simultaneous two-point calibration	X		
ii. Reads to two decimal places	X		
iii. Temperature compensation adjustment	X		
d. pH meter is calibrated properly before use.	X		
e. pH calibration logbook is maintained with the following information:			
i. Date	X		
ii. Time	X		
iii. Initials of person performing calibration	X		
iv. 7 buffer reading	X		
v. 10 buffer reading	X		
vi. Temperature of buffer	X		
vii. Buffer expiration date	X		
f. Is the permittee performing any other tests?		X	
2. Are samples taken at sampling location specified by permit? **Discharge point**	X		
3. Is the permittee using the method of sample collection required by the permit?	X		
Required method: **Grab**			
If not, explain:			
4. Sample collection procedures adequate and include:			
a. Sample refrigeration during compositing.		X	
b. Proper preservation techniques.	X		
c. Containers in conformance with 40 CFR 136.3.			X
Specify any problems:			

5. Laboratory Information (from lab result sheets)

Name:	**State Health Laboratory**
Address:	**615 East 4th Street**
Phone:	**(605) 773-3368**
Parameters tested:	**BOD, TSS, pH**

Sampling and laboratory comments: **Keith did not have any of his sampling results with him. He said he does have them however. pH must be taken instantaneous within 15 minutes of taking samples.**

Flow Measurement:

Type of effluent flow measurement device: **None**

	Yes	No	N/A
1. Is flow measured at each outfall? Number of outfalls:		X	
2. Are facility personnel calculating flows properly?			X
3. Are the proper flow tables used by facility personnel?			X
4. If flow measurement equipment adequate to handle expected ranges of flow rate?			X

Comments on effluent flow measurement: **Keith does not calculate flow.**

Self-Monitoring Reporting Information

	Yes	No	N/A
1. Is the facility required to obtain permission from the department before discharging?		X	
a. If yes, has the facility requested permission for discharges?			X
b. If yes, has the facility received permission for discharges?			X
2. Are DMRs being submitted to DENR as required by the permit?	X		
a. Are they submitted on time?		X	
Use the attached DMR Calculations Form to help answer 5 – 8 for most recent discharges.			
3. Is monitoring for required parameters performed at least as frequently as required by the permit?	X		
a. Are they sampling more frequently?		X	
4. If the geometric mean properly calculated and recorded for fecal/total coliform data?	X		
5. Are weekly and monthly averages calculated properly and reported on the DMR?	X		
6. Are the maximum and minimum values of all data points reported properly?	X		
7. Is the number of exceedances column (NO. EX) completed properly?	X		
8. Is the permit signatory or authorized representative signing the DMRs?	X		
9. Are sample types reported properly?	X		

Self-monitoring or DMR comments: **Has had 6 late DMR's since last inspection. No pH on first sample of week one.** `

DMR Calculations Form

Month of **June 2010**

Week 1							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (°C)	Ammonia (mg/L)	Fecal (#/100 ml)
06/15/2010	**2**	**3**	**NS**	**NS**	**9**	----------	----------
06/17/2010	**3**	**3**	**9.05**	**NS**	**8**	----------	----------
06/21/2010	**3**	**61**	**8.61**	**NS**	**8**	----------	----------
Week Total	**8**	**67**	----------	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------	----------
=7-Day Avg.	**2.67**	**22.33**	----------	----------	----------	----------	----------

Week 2							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (°C)	Ammonia (mg/L)	Fecal (#/100 ml)
						----------	----------
Week Total			----------	----------	----------	----------	----------
÷ # of Samples			----------	----------	----------	----------	----------
=7-Day Avg.			----------	----------	----------	----------	----------

Week 3							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (°C)	Ammonia (mg/L)	Fecal (#/100 ml)
						----------	----------
Week Total			----------	----------	----------	----------	----------
÷ # of Samples			----------	----------	----------	----------	----------
=7-Day Avg.			----------	----------	----------	----------	----------

Week 4 (if applicable)							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (°C)	Ammonia (mg/L)	Fecal (#/100 ml)
						----------	----------
Week Total			----------	----------	----------	----------	----------
÷ # of Samples			----------	----------	----------	----------	----------
=7-Day Avg.			----------	----------	----------	----------	----------

Monthly Summary							
Date	BOD (mg/L)	TSS (mg/L)	pH	Flow (MGD)	Temp (°C)	Ammonia (mg/L)	Fecal (#/100 ml)
Daily Max.	----------	----------	**9.05**	**Unknown**	**9**	----------	----------
Daily Min.	----------	----------	**8.61**	----------	---------	----------	----------
Max. 7-day Avg.	**2.67**	**22.33**	----------	----------	---------	----------	----------
Month Total	**8**	**67**	**17.66**	----------	**25**	----------	----------
÷ # of Samples	**3**	**3**	**2**	----------	**3**	----------	----------
=30-Day Avg.	**2.67**	**22.33**	**8.83**	----------	**8.33**	----------	----------

IV. Facility Compliance Review

Effluent Violations

		Yes	No	N/A
1.	Has the facility discharged since the last inspection. If yes, list how many. 2	X		
2.	Is the facility in compliance with all effluent limits since the last inspection?		X	
a.	Effluent BOD5 violations. If yes, how many?		X	
b.	Effluent TSS violations. If yes, how many?		X	
c.	Effluent pH violations. If yes, how many? 1	X		
d.	Effluent ammonia violations. If yes, how many?			X
e.	Effluent fecal coliform violations. If yes, how many?			X
f.	Effluent total coliform violations. If yes, how many?			X
h.	Effluent temperature violations. If yes, how many?			X
i.	Effluent TRC violations. If yes, how many?			X
j.	Other violations. If yes, list parameter and number of occurrences .		X	

Effluent violations comments: **Was over on Maximum pH for 06/01/2010. Does not calculate flow which is required.**

Compliance Schedule

		Yes	No	N/A
1.	Is the facility subject to a compliance schedule either in its permit or in an enforcement action? If yes, note date and type of enforcement action.		X	
2.	List milestones that remain in the schedule:			
3.	Has facility has missed milestone dates? If yes explain:			X
4.	Will the facility meet or do they plan to meet final compliance schedule date?			X

Compliance schedule comments: **Astoria is not on a compliance schedule**

Facility Review

		Yes	No	N/A
1.	Are written emergency procedures established (in the event of a major storm event, a chemical release into the sewer system, a sewer main break, etc.)?		X	
2.	Can the facility be bypassed (internal, collection system, total)? Describe bypass procedures:		X	
3.	Does the facility accept hauled (septage) wastes? If yes, list amount and hauler contact information.		X	
4.	Does the facility accept industrial or nondomestic wastes? If yes, list amount and sources.		X	
5.	Has the facility experienced problems with industrial or hauled wastes? If yes, explain:			X
6.	Are the non-domestic users regulated by sewer ordinance? If yes, attach relevant ordinance.			X

Facility review comments: **An emergency procedure plan needs to be established incase an emergency occurs and Keith is not in town, the city officials will know what to do.**

V. Collection System

Piping and Manholes

Type of Collection System

☒ Separate ☐ Combined (San + Storm)
☐ Both ☐ Other

		Yes	No	N/A
1.	Is a routine sewer-cleaning schedule maintained? If yes, what is the schedule and what type of equipment is used?		X	
2.	Have sewer backups occurred into basements during high flows since the last inspection? If yes, explain:		X	

If overflows occurred at this facility, the information from question 3 should be entered in the SSO database.

		Yes	No	N/A
3.	Have manholes overflowed during high flows? If yes, give dates, volumes, receiving waters, etc.		X	
4.	Was DENR notified of any overflows or unauthorized releases? If no, why not?			X
5.	Were samples taken of the overflow/unauthorized release? If yes, list the sample results in the comment section below. If no, explain.			X
6.	Have bypasses occurred from the collection system (including lift stations) since the last inspection? If yes, explain (date, volumes, receiving water, etc.)			X
7.	Does the community have a sump pump ordinance? If yes, how is it enforced?	X		
8.	Has testing for inflow/infiltration sources been conducted since the last inspection? If yes, describe testing.		X	
9.	Have sources of inflow/infiltration been identified?		X	
10.	Have measures been taken to correct inflow/infiltration problems?			X
11.	Has the collection system been upgraded since the last inspection? If yes, describe:		X	

Piping and manhole comments: **Keith says the system is fairly simple which keeps maintenance and problems to a minimum.**

VI. Treatment Processes

Stabilization Ponds

Item	Comments
Inspection frequency	**Multiple times a month**
Weeds and/or trees growing on the dikes	**No**
Vegetation growing in the ponds	**Yes**
Pond dikes protected from erosion with riprap	**No**
Dike structure failure (sloughing and/or sagging)	**No**
Evidence of erosion	**Yes**
Pond seepage surfacing reported	**No**
Sludge: Past disposal practices	**None**
Future Plans	**None**
Observation of sludge accumulation	**None**
Fencing in good condition	**Yes**
All access gates are kept locked	**Yes**
Signs legible and properly located	**Yes**
Facility accessible in all weather conditions	**Yes**
Evidence of burrowing animals	**No**
Evidence of grazing animals	**No**
Odor problem (except seasonal turnover)	**None**
Inter-pond piping valves are working and used	**Yes**
Depth indicator(s)	**None**
Discharge structure (valve control, overflow, etc.)	**Yes**
Which ponds are drawn down during a discharge?	**3**
Cells operated in series or parallel	**Series**
Are chemicals added for algae, insects, etc?	**No**

Cell information (stabilization pond)

	Cell #1	Cell #2	Cell #3	Cell #4	Cell #5
Maximum operation depth	**5'**	**5'**	**5'**		
Current operating depth	**Unknown**	**Unknown**	**Unknown**		
Minimum operating depth	**2'**	**2'**	**2'**		
Surface area at maximum depth	**0.9 Acres**	**0.45 Acres**	**0.45 Acres**		

Comments concerning stabilization ponds: **The ponds had a little vegetation growth in them. Keith also knew of a spot where the dike was eroding but has plans of fixing that.**

Artificial Wetlands

Item	Comments
Inspection frequency	**Multiple times a month**
Weeds and/or trees growing on the dikes	**No**
Proper vegetation growing in the wetlands	**Yes**
List types of vegetation	**Cattail**
Percent vegetative cover	**80%**
Application procedure and schedule	**No Schedule**
Frequency of discharge	**Normally during the spring if needed**
Erosion noted	**None**
Dike structure failure (sloughing and/or sagging)	**No**
Normal operation depth (optimum 6-12 inches)	**Yes, Keith tries to keep it between 6 & 12 inches.**
Evidence of burrowing animals	**No**
Evidence of grazing animals	**No**
Chemicals used/needed	**No**
Short circuiting	**No**
Fencing, gates, signage	**Yes**
Problems with mosquitos	**No**

Cell information (wetland)

	Cell #1	Cell #2	Cell #3	Cell #4	Cell #5
Maximum operation depth	**3'**				
Current operating depth	**unknown**				
Minimum operating depth	**6"**				
Surface area at maximum depth	**0.45 Acres**				

Comments concerning artificial wetlands: None

Surface Water Discharge Compliance Inspection Report

Section A: National Data System Coding

Transaction Code	Permit No.	mm/dd/yy	Insp. Type	Inspector	Fac. Type
N 5	SD0025194	04/13/10	C	S	Municipal

Remarks:

Inspection Work Days	Facility Evaluation Rating	BI	QA	Reserved	Reserved
1	2	N	N		

Section B: Facility Data

Name and Location of Facility (*For Industrial Users include POTW name and SWD permit number*)	Entry Time:	Permit Eff. Date:
City of Astoria SD0025194	3:10 PM	January 01, 2009
Name of On-Site Representative(s)/ Title/ Phone and Fax Number Keith Olson / Operator / (605) 832-2121	**Exit Time:** 4:15 PM	**Permit Exp. Date:** December 31, 2013
Name and Address of Responsible Official/Title/Phone and Fax Number Terry Lovre / Mayor / (605) 832-2121 **Contacted?** No	**Other Facility Data**	

Section C: Areas Evaluated During Inspection
(S=Satisfactory, M=Marginal, U=Unsatisfactory, N=Not Evaluated)

S	Permit	N	Flow Measurement	S	O & M	S	CSO/SSO
S	Records/Reports	S	Self-Monitoring	N	Sludge Disposal	N	PP
S	Facility Site Review	N	Compliance Schedule	N	Industrial Users	N	Multimedia
S	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other

Section D: Summary of Findings/Comments (*Attach additional sheets if necessary*)

I gave the City of Astoria a Facility Evaluation Rating of 2 out of 5 for the certain reasons: has had late DMR's; is no depth measuring device, a pH limit was violated in June 2010 sample; inspection records do not satisfy the full requirements; an emergency procedure plan has not been established; the dike is showing signs of erosion; and the cells had vegetation growing in them.

Name of Inspector(s)	Signature	Affiliation / Phone	Date
Bret C. Graves		*SDDENR / (605) 773-3351*	

Name of Reviewer	Signature	Affiliation / Phone	Date
Kelli D. Buscher, P.E.		*SDDENR / (605) 773-3351*	

INSTRUCTIONS FOR SURFACE WATER DISCHARGE COMPLIANCE INSPECTION REPORT

SECTION A: NATIONAL DATA SYSTEM CODING

Transaction Code: Use N, C or D for New, Change or Delete. All inspections will be New (N) unless there is an error in the data entered.

Permit No.: SWD Permit Number.

Inspection Date: Use month/day/year format.

Inspection Type: Uses the following codes to describe the type of inspection:

A-Performance Audit
B-Biomonitoring
C-Compliance Evaluation
D-Diagnostic
E-Corps of Engrs Inspection
F-Pretreatment Follow-up
G-Pretreatment Audit
I-Industrial User (IU)
L-Enforcement Case Support
M-Multimedia
P-Pretreatment Compliance Inspection
R-Reconnaissance Inspection
S-Compliance Sampling
U-IU Inspection with Pretreatment Audit
X-Toxics Inspection
Z-Sludge
2 IU Sampling Inspection
3 IU Non-Sampling Insp
4 IU Toxics Inspection
5 IU Sampling Insp w/Prt
6 IU Non-Samp Insp w/Prt
7 IU Toxics w/Prt

Inspector Code: Use following codes to describe the lead agency:

C-Contractor or Other (specify)
E-Corps of Engineers
J-Joint EPA/State - EPA Lead
N-NEIC Inspectors
R-EPA Regional inspector
S-State Inspector
T-Joint State/EPA - State Lead

Facility Type: Use following codes to describe the facility:

1-Municipal - Publicly Owned Treatment Works (POTW) with SIC code 4952.
2-Industrial - Other than municipal, agricultural and Federal facilities.
3-Agricultural - Facilities with SIC 0111 to 0971.
4-Federal - Facilities identified as Federal by the EPA Regional Office.

Remarks: Columns for remarks at discretion of the Inspector.

Inspection Work Days: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection and submit a QA reviewed report of findings. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

Facility Evaluation Rating: Evaluate the quality of the facility self monitoring program using scale of 1 to 5, with a 5 being a very reliable program, a 3 being satisfactory and a 1 being a very unreliable program.

Biomonitoring Information: Enter D for static testing; F for flow through testing; or N for no biomonitoring.

Quality Assurance Data Inspection: Enter Q if inspection was a follow-up on QA sample results. Enter N otherwise.

SECTION B: FACILITY DATA

This section is self-explanatory, except for *Other Facility Data*, which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record).

SECTION C: AREAS EVALUATED DURING INSPECTION

Indicate findings (S, M, U or N) in the appropriate line. Use section D and additional sheets as need to explain findings in a brief narrative when appropriate. The heading marked *Multimedia* may indicate medias such as CAA, RCRA, and TSCA. The heading marked "Other" may be used to note any additional concerns, such as SPCC, BMPs, and concerns that are not covered elsewhere.

SECTION D: SUMMARY OF FINDINGS/COMMENTS

Briefly summarize the inspection findings along with referencing any attachments such as checklists from NPDES inspection manuals, pretreatment guidance documents and monitoring results.

Operation and Maintenance Award Summary Form

Facility: **City of Astoria** Inspection Date: **April 13, 2010**
Nominate facility for award: ☐ Yes ☒ No

Explain why you feel the facility should or should not be nominated for an Excellent Operation and Maintenance award. In your explanation please consider the following criteria:

1. Effluent violations: **1**
2. Process control (for mechanical facilities): **No**
3. Report submittal (for DMRs or any other reports that are required): **Some late**
4. Unauthorized discharges or SSOs occurrences: **None**
5. General appearance of equipment: **Not really any equipment**
6. Biosolids/screenings handling: **None**
7. Steps taken to reduce I/I: **None**
8. Condition of facility (buildings/grounds, dikes, lift stations, vegetation in ponds or wetlands etc.): **Good**
9. Inspection notebook (and other recordkeeping): **Good**
10. Scheduled discharges: **None**
11. Pre-discharge samples: **Good**
12. Extra or additional sampling not required by the permit: **None**
13. Facility/lift station inspection frequency: **Couple times a month**
14. Uncharacteristic odors: **None**
15. Spare parts or back-up generators available: **Not needed**
16. Operator certification (if required): **None**

Awards from SD Water & Wastewater Association – we can nominate facilities/ operators for the following awards
*Ewing Award (for improved O&M at a WWTF that results in a better plant effluent).
*Rookie-of-the-Year Award (should be a new operator that does the best with what they have and have made improvements to water quality and/or plant operation).

Appendix B

Wastewater Treatment Discharge Permit

STATEMENT OF BASIS

Applicant:	City of Astoria
Permit Number:	SD0025194
Contact Person:	Vicki Ovall, Finance Officer Keith Olson, Maintenance 342 Main St, PO Box 8 Astoria, SD 57213
Phone:	(605) 832-2451 (605) 832-3611
Permit Type:	Minor Municipal - Renewal

DESCRIPTION

The city of Astoria operates a wastewater treatment facility located ½ mile north of the town in the southeast ¼ of the northeast ¼ of Section 26, Township 113 North, Range 48 West, in Deuel County, South Dakota (Latitude 44° 33' 58.3", Longitude 96° 32' 31.1", Navigational Quality GPS).

The wastewater treatment facility consists of a gravity flow collection system that directs wastewater to a three-cell stabilization pond system. This system is operated in series and has an average design flow of 0.009 million gallons per day (MGD) (permit application). The first pond is 0.9 acres, followed by two 0.45 acre ponds. The system was designed for a controlled seasonal discharge and was constructed in 1976.

This wastewater treatment facility serves a population of 150 persons (permit application), with no known industrial users contributing flow to the system.

RECEIVING WATERS

Any discharge from this facility will enter an unnamed tributary and flow about a ½ mile to an unnamed wetland. The unnamed tributary is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Section 74:51:03:01 for the following beneficial uses:

(9) Fish and wildlife propagation, recreation, and stock watering waters; and
(10) Irrigation waters.

The unnamed wetland is classified by the SDSWQS, ARSD, Sections 74:51:01:11 and 74:51:02:01 for the following beneficial use:

(9) Fish and wildlife propagation, recreation, and stock watering waters.

Since the receiving waterbody has a minimum beneficial use classification of (9), the SDSWQS (ARSD Section 74:51:01:02.01) require that an analysis of the receiving stream be conducted to determine whether the waterbody deserves a higher beneficial use

designation. The South Dakota Department of Environment and Natural Resources (SDDENR) has conducted an analysis for the unnamed tributary and the unnamed wetland near the discharge location. SDDENR personnel have determined that the beneficial use classifications for the unnamed tributary and the unnamed wetland are appropriate and will remain unchanged.

ANTIDEGRADATION

The South Dakota Department of Environment and Natural Resources (SDDENR) has fulfilled the antidegradation review requirements for this permit. In accordance with South Dakota's Antidegradation Implementation Procedure and the SDSWQS, no further review is required. The results of SDDENR's review are included in Attachment 1.

MONITORING DATA

The city of Astoria has been submitting Discharge Monitoring Reports (DMRs) as required under the current permit. As shown in Attachment 2, this facility has had one effluent violation of Total Suspended Solids (TSS). However, this violation seems to be an isolated incidence and does not reflect the overall treatment performance of this facility. No discharge was reported for the months not included in the table.

INSPECTIONS

Personnel from SDDENR conducted an *Operation and Maintenance* inspection of the city of Astoria's wastewater treatment facility on March 31, 2006. The following requirements and recommendations were made:

Requirements

1. There has been one effluent violation since the last inspection, which was conducted on September 24, 2003.

   In October 2005, the 30 day average for TSS was calculated to be 114 mg/L. The permit limit value for this parameter is 110 mg/L. The violation is believed to be due to Mr. Peterson not allowing sufficient time for the pipe to discharge any accumulated solids before sampling. Every effort must be made to ensure the discharged effluent is within permit limits in order to protect the environment and maintain compliance with permit conditions.

2. The last DMR was not submitted by the due date. Please ensure that these reports are submitted by the required due date. DMR due dates are as follows:

   January – March DMRs are due **no later than April 28th**;
   April – June DMRs are due **no later than July 28th**;
   July – September DMRs are due **no later than August 28th**; and
   October – December DMRs are due **no later than January 28th**.

Recommendations and Comments

1. In order to have an adequate source of funds for repairs and replacement of the city's wastewater collection and treatment system, it is recommended that the city review its wastewater rates and give serious consideration to raising them to the recommended level. Several communities are facing upgrades, rehabilitation, or new construction. Construction costs are typically very large and cannot be accomplished without community leaders having foresight to set appropriate wastewater rates to cover these costs as well as the cost of operation and maintenance. Many communities facing construction projects are finding that an appropriate rate is approximately $17 per household per month. The city may want to consider annual increases to the sewer use rates over a period of several years to reach a more appropriate level.

2. A vulnerability assessment and written emergency procedures have not been established for the Astoria wastewater system. A vulnerability assessment is a tool used to evaluate susceptibility of a system to security threats such as vandalism. It also identifies corrective actions, with which written emergency procedures can be developed to aid the city in the event of a major storm event, chemical release into the sewer system, sewer main break, etc. Training sessions to conduct a vulnerability assessment are available through South Dakota Rural Water Association. They can be contacted at 5009 W 12th Street, Suite 5, Sioux Falls, SD 57106. Phone: (605) 336-7219. Internet: www.sdarws.com.

3. It is recommended that regularly scheduled preventive maintenance programs be considered for implementation. Preventive maintenance programs include sewer cleaning, TV camera inspection, smoke testing, collection line replacement, etc. Preventive maintenance will extend the normal life of the facility and assure water quality benefits to the community and the state.

EFFLUENT LIMITS

The permittee shall comply with the effluent limits specified below. These limits are based on the Secondary Treatment Standards (ARSD Section 74:52:06:03), the SDSWQS, Best Professional Judgment (BPJ), and current permit limits.

Outfall 001 – Any discharge from the third cell into an unnamed tributary (Latitude 44° 33' 59.8", Longitude 96° 32' 28.7", Navigational Quality GPS).

1. The Five-Day Biochemical Oxygen Demand (BOD_5) concentration shall not exceed 30 mg/L (30-day average) or 45 mg/L (7-day average). These limits are based on the Secondary Treatment Standards.

2. The TSS concentration shall not exceed 110 mg/L (30-day average) or 165 mg/L (7-day average). These limits are based on current permit limits, SDDENR policy

for stabilization pond systems that discharge to streams classified for fish and wildlife propagation, recreation, and stock watering waters, and BPJ.

Note: The ARSD Section 74:52:06:04(2) allows TSS limits less stringent than Secondary Treatment Standards if it can be demonstrated that:

a) Waste stabilization ponds are the principal process used for secondary treatment;
b) Operation and maintenance data indicate that TSS values specified in subdivision 74:52:06:03(3) cannot be achieved;
c) The effluent quality for TSS does not exceed 110 mg/L for 30-day average and 165 mg/L for 7-day average; and
d) The POTW is achieving levels of effluent quality required for BOD_5 specified in Section 74:52:06:03.

Because the facility meets the above criteria, the TSS variance is allowed.

3. The pH shall not be less than 6.0 standard units or greater than 9.0 standard units in any single analysis and/or measurement. These limits are based on Secondary Treatment Standards.

   Note: SDDENR specifies that pH analyses are to be conducted within 15 minutes of sample collection with a pH meter. Therefore, the permittee must have the ability to conduct onsite pH analyses. The pH meter used must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

4. No chemicals, such as chlorine, shall be used without prior written permission. This limit is based on BPJ.

Effluent water temperature (°C), flow rate (MGD), total flow (million gallons), and duration of discharge (days) shall be monitored, but will not have a limit.

SELF MONITORING REQUIREMENTS

A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week. All samples collected during the 7-day or 30-day period shall be used in determining the averages. The permittee always has the option of collecting additional samples if appropriate.

Effluent monitoring results shall be summarized for each month and recorded on separate DMRs to be submitted to SDDENR on a **quarterly** basis. If no discharge occurs during a month, it shall be stated as such on the DMR.

Monitoring shall consist of **monthly** inspections of the facility to verify that proper operation and maintenance procedures are being practiced and whether or not there is a discharge occurring from this facility. **Daily** inspections are required during a discharge. Documentation of each of these visits shall be kept in a notebook to be reviewed by SDDENR or EPA personnel when an inspection occurs.

SLUDGE

Based on the city of Astoria's permit application, the SDDENR does not anticipate sludge will be removed or disposed of during the life of the permit. Therefore, the proposed Surface Water Discharge permit shall not contain sludge disposal requirements. However, if sludge disposal is necessary, the city of Astoria is required to submit to SDDENR a sludge disposal plan for review and approval **prior** to the removal and disposal of sludge.

DRAINAGE ISSUES

Deuel County has the authority to regulate drainage. The city of Astoria is responsible for getting any necessary drainage permits from the county **prior** to discharging.

ENDANGERED SPECIES

This is a renewal of an existing permit. No listed endangered species are expected to be impacted by activities related to this permit.

PERMIT EXPIRATION

A five-year permit is recommended.

PERMIT CONTACT

Any questions pertaining to this statement of basis can be directed to Jill Riedel, Natural Resources Engineer for the Surface Water Quality Program, at (605) 362-3543.

November 3, 2008

ATTACHMENT 1

Antidegradation Review

Permit Type:	**Minor Municipal - Renewal**	Applicant:	**City of Astoria**
Date Received:	**01/11/2008**	Permit #:	**SD0025194**
County:	**Duel**	Legal Description:	**SE ¼ of NE ¼ Sec 26, T113N, R48W**
Receiving Stream:	**Unnamed Tributary**	Classification:	**9, 10**

If the discharge affects a downstream waterbody with a higher use classification, list its name and uses:

APPLICABILITY

1. Is the permit or the stream segment exempt from the antidegradation review process under ARSD 74:51:01? Yes ☒ No ☐ If no, go to question #2. If yes, check those reasons why the review is not required:

- ☐ Existing facility covered under a surface water discharge permit is operating at or below design flows and pollutant loadings;
- ☐ *Existing effluent quality from a surface water discharge permitted facility is in compliance with all discharge permit limits;
- ☐ *Existing surface water discharge permittee was discharging to the current stream segment prior to March 27, 1973, and the quality and quantity of the discharge has not degraded the water quality of that segment as it existed on March 27, 1973;
- ☐ *The existing surface water discharge permittee, with DENR approval, has upgraded or built new wastewater treatment facilities between March 27, 1973, and July 1, 1988;
- ☒ The existing surface water discharge permittee discharges to a receiving water assigned only the beneficial uses of (9) and (10); the discharge is not expected to contain toxic pollutants in concentrations that may cause an impact to the receiving stream; and DENR has documented that the stream cannot attain a higher use classification. This exemption does not apply to discharges that may cause impacts to downstream segments that are of higher quality;
- ☐ Receiving water meets Tier 1 waters criteria. Any permitted discharge must meet water quality standards;
- ☐ The permitted discharge will be authorized by a Section 404 Corps of Engineers Permit, will undergo a similar review process in the issuance of that permit, and will be issued a 401 certification by the department, indicating compliance with the state's antidegradation provisions; or
- ☒ Other: This permit does not authorize an increase in effluent limits.

*An antidegradation review is not required where the proposal is to maintain or improve the existing effluent levels and conditions. Proposals for increased effluent levels, in these categories of activities are subject to review.

No further review required.

ANTIDEGRADATION REVIEW SUMMARY

2. The outcome of the review is:
   - ☒ A formal antidegradation review was not required for reasons stated in this worksheet. Any permitted discharge must ensure water quality standards will not be violated.
   - ☐ The review has determined that degradation of water quality should not be allowed. Any permitted discharge would have to meet effluent limits or conditions that would not result in any degradation estimated through appropriate modeling techniques based on ambient water quality in the receiving stream, or pursue an alternative to discharging to the waterbody.
   - ☐ The review has determined that the discharge will cause an insignificant change in water quality in the receiving stream. The appropriate agency may proceed with permit issuance with the appropriate conditions to ensure water quality standards are met.
   - ☐ The review has determined, with public input, that the permitted discharge is allowed to discharge effluent at concentrations determined through a total maximum daily load (TMDL). The TMDL will determine the appropriate effluent limits based on the upstream ambient water quality and the water quality standard(s) of the receiving stream.
   - ☐ The review has determined that the discharge is allowed. However, the full assimilative capacity of the receiving stream cannot be used in developing the permit effluent limits or conditions. In this case, a TMDL must be completed based on the upstream ambient water quality and the assimilative capacity allowed by the antidegradation review.
   - ☐ Other: _____

3. Describe any other requirements to implement antidegradation or any special conditions That are required as a result of this antidegradation review: _____

Jill M. Riedel, E.I.T	March 31, 2008
Reviewer	Date
Kelli D. Buscher, P.E.	March 31, 2008
Team Leader	Date

ATTACHMENT 2

Monitoring Data

DMR Date	BOD_5		Duration of Discharge	Flow Rate			pH		TSS		Temperature	
	30 Day Ave	Max 7 Day Ave	Monthly Total	30-Day Ave	Daily Max	Monthly Total	Daily Min	Daily Max	30-Day Ave	Max 7-Day Ave	30-Day Ave	Daily Max
Limit	30 mg/L	45 mg/L	Days/Mo	MGD	MGD/Day	MGD/Mo	6.0 su	9.0 su	110 mg/L	165 mg/L	deg C	deg C
10/31/2003	8.33	9.0	3	0.2736	0.3096	0.8208	7.67	8.17	19	19	16.2	17
10/31/2005	4.3	4.3	3	0.3096	0.3096	0.9288	6.2	8.3	***114***	114	8.1	8.6

Shaded cells indicate violations
No discharge was reported for the months not shown

Appendix C

Flow Monitoring Records

Wastewater Flow Monitoring Records

Date	Flow (gpd)	Precip (in)	Date	Flow (gpd)	Precip (in)
Wednesday, May 18, 2011	47,611		Tuesday, June 28, 2011	42,022	
Thursday, May 19, 2011	44,384		Wednesday, June 29, 2011	41,072	
Friday, May 20, 2011	47,865	0.97	Thursday, June 30, 2011	37,885	
Saturday, May 21, 2011	94,518	0.46	Friday, July 01, 2011	33,441	0.59
Sunday, May 22, 2011	123,241	0.21	Saturday, July 02, 2011	31,830	
Monday, May 23, 2011	109,607		Sunday, July 03, 2011	28,481	
Tuesday, May 24, 2011	90,379		Monday, July 04, 2011	26,523	
Wednesday, May 25, 2011	73,998		Tuesday, July 05, 2011	34,708	0.43
Thursday, May 26, 2011	58,835		Wednesday, July 06, 2011	29,541	
Friday, May 27, 2011	63,276	0.70	Thursday, July 07, 2011	25,739	
Saturday, May 28, 2011	91,623		Friday, July 08, 2011	23,440	
Sunday, May 29, 2011	77,940		Saturday, July 09, 2011	27,657	0.4
Monday, May 30, 2011	81,978	0.86	Sunday, July 10, 2011	44,726	1.76
Tuesday, May 31, 2011	112,367	0.10	Monday, July 11, 2011	140,849	
Wednesday, June 01, 2011	87,680		Tuesday, July 12, 2011	85,545	0.04
Thursday, June 02, 2011	73,195		Wednesday, July 13, 2011	64,155	
Friday, June 03, 2011	60,510		Thursday, July 14, 2011	111,763	0.73
Saturday, June 04, 2011	50,379		Friday, July 15, 2011	98,116	
Sunday, June 05, 2011	45,932		Saturday, July 16, 2011	74,755	
Monday, June 06, 2011	42,000		Sunday, July 17, 2011	58,258	
Tuesday, June 07, 2011	36,644		Monday, July 18, 2011	46,396	
Wednesday, June 08, 2011	31,979		Tuesday, July 19, 2011	39,509	
Thursday, June 09, 2011	29,216	0.06	Wednesday, July 20, 2011	33,683	
Friday, June 10, 2011	27,816	0.06	Thursday, July 21, 2011	28,575	
Saturday, June 11, 2011	27,739	0.04	Friday, July 22, 2011	25,564	
Sunday, June 12, 2011	26,969		Saturday, July 23, 2011	23,564	
Monday, June 13, 2011	25,885	0.28	Sunday, July 24, 2011	22,052	
Tuesday, June 14, 2011	25,904		Monday, July 25, 2011	18,733	
Wednesday, June 15, 2011	26,771		Tuesday, July 26, 2011	19,555	
Thursday, June 16, 2011	25,407		Wednesday, July 27, 2011	24,610	
Friday, June 17, 2011	24,928	0.08	Thursday, July 28, 2011	20,129	
Saturday, June 18, 2011	23,552		Friday, July 29, 2011	18,075	
Sunday, June 19, 2011	23,008		Saturday, July 30, 2011	17,046	
Monday, June 20, 2011	21,483	0.09	Sunday, July 31, 2011	16,683	
Tuesday, June 21, 2011	42,514	1.62	Monday, August 01, 2011	14,832	
Wednesday, June 22, 2011	108,171	0.49	Tuesday, August 02, 2011	13,716	
Thursday, June 23, 2011	104,642		Wednesday, August 03, 2011	13,129	
Friday, June 24, 2011	79,383	0.07	Thursday, August 04, 2011	12,107	
Saturday, June 25, 2011	61,136		Friday, August 05, 2011	11,858	
Sunday, June 26, 2011	55,078		Saturday, August 06, 2011	11,391	
Monday, June 27, 2011	47,973		Sunday, August 07, 2011	10,557	
			Average gpd	**47,100** gpd	
				325 gpcpd	
			Total Flow	3,855,787 gpd	
			Typical Domestic Wastewater Flow	8,700 gpd	
			Average I & I	38,400 gpd	

Date	Daily Gallons Zone 1 South Tog	Zone 2 Mid Blom	Zone 3 North Pond	Total	Precip
Friday, July 08, 2011	8,119	4,377	10,944	23,440	
Saturday, July 09, 2011	8,932	6,620	12,104	27,657	0.4
Sunday, July 10, 2011	17,509	10,813	16,404	44,726	1.76
Monday, July 11, 2011	53,896	38,570	48,382	140,849	
Tuesday, July 12, 2011	37,925	20,182	27,438	85,545	0.04
Wednesday, July 13, 2011	28,618	12,137	23,400	64,155	
Thursday, July 14, 2011	48,408	29,753	33,603	111,763	0.73
Friday, July 15, 2011	50,899	19,230	27,987	98,116	
Saturday, July 16, 2011	43,129	7,819	23,807	74,755	
Sunday, July 17, 2011	34,619	4,557	19,082	58,258	
Monday, July 18, 2011	27,806	2,196	16,393	46,396	
Tuesday, July 19, 2011	23,231	287	15,990	39,509	
Wednesday, July 20, 2011	19,994	-	13,689	33,683	
Thursday, July 21, 2011	16,416	-	12,159	28,575	
Friday, July 22, 2011	14,794	-	10,770	25,564	
Saturday, July 23, 2011	13,295	492	9,778	23,564	
Sunday, July 24, 2011	12,070	748	9,234	22,052	
Monday, July 25, 2011	10,061	1,039	7,633	18,733	
Tuesday, July 26, 2011	10,505	978	8,072	19,555	
Wednesday, July 27, 2011	11,418	1,659	11,533	24,610	
Thursday, July 28, 2011	8,652	1,703	9,774	20,129	
Friday, July 29, 2011	7,726	1,630	8,719	18,075	
Saturday, July 30, 2011	7,272	2,016	7,759	17,046	
Sunday, July 31, 2011	7,274	2,284	7,126	16,683	
Monday, August 01, 2011	6,737	3,120	4,975	14,832	
Tuesday, August 02, 2011	6,284	2,423	5,010	13,716	
Wednesday, August 03, 2011	6,710	698	5,721	13,129	

Schmucker, Paul, Nohr and Associates
2100 North Sanborn Blvd — PO Box 398
Mitchell SD 57301-0398
Phone (605) 996-7761
Wats (800) 952-3598
Fax (605) 996-0015
www.spn-assoc.com

December 20, 2013

RECEIVED
DEC 23 2013
Division of Financial
& Technical Assistance

James M. Anderson
Dept of Environment and Natural Resources
Foss Building
523 East Capitol
Pierre SD 57501

RE: Wastewater System
Astoria, South Dakota
SPN #13576

Dear Mr. Anderson:

Enclosed for your review and approval are two (2) copies of Addendum #2 to the Facility Plan for the above referenced project. The Addendum was assembled to summarize televising that was conducted on the wastewater collection system and to provide two storm sewer alternatives that were requested by the Town Board.

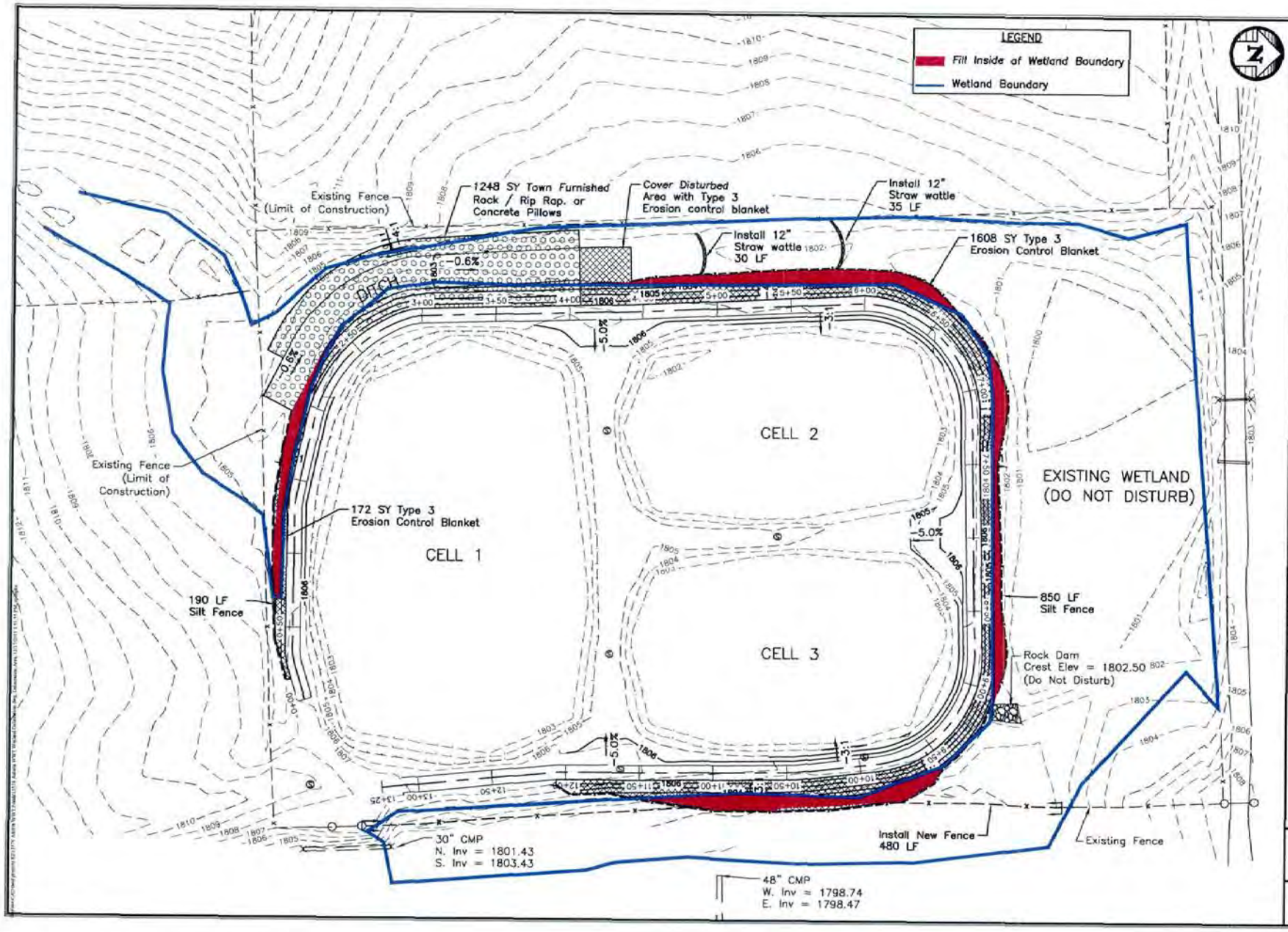
If you have any questions or need additional information, please call me.

Sincerely,

SCHMUCKER, PAUL, NOHR & ASSOCIATES

Chris Haines, P.E.
Project Engineer

Enclosures



SPN & Associates

Engineers • Planners • Surveyors

2100 North Sanborn Boulevard • P.O. Box 358
Mitchell, South Dakota • Zip 57301-0358
Phone: (605) 995-7761 • Fax: (605) 996-0015

Plan Horiz. Scale:	1" = 60'
Drawn By:	NAP
Checked By:	CHAINES
Date:	12/2013
Project No.:	13576
Computer Name:	G:\Land Proj\R2
File Name:	13576-Astoria WWT Ponds

Project Name:
Astoria WWT Diversion Channel Rehabilitation

Located in:
Astoria, South Dakota

Sheet Name:
Wetland Delineation

Sheet Number:	Total Sheets:
1	1

ADDENDUM #1
TO
FACILITY PLAN
FOR
WASTEWATER SYSTEM
IN
ASTORIA, SOUTH DAKOTA

SPN #13576

MAY 2013

D
OTA
NVIRONMENT
ESOURCES
November 25 13

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Harlan J. Quenzer

Registration Number SD #2726

Date May 16, 2013

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 2726
HARLAN JOHN QUENZER
SOUTH DAKOTA

SCHMUCKER, PAUL, NOHR & ASSOCIATES
CONSULTING ENGINEERS - SURVEYORS
2100 NORTH SANBORN BLVD, PO BOX 398
MITCHELL, SOUTH DAKOTA 57301

ADDENDUM NUMBER ONE

to the

FACILITY PLAN

for the

WASTEWATER SYSTEM

Astoria, SD

SPN #13576

May, 2013

1. Introduction

The modifications to the Facility Plan for the Wastewater System Improvements as set forth hereinafter are being offered in response to the SD DENR letter dated January 7, 2013, in an effort to clarify various aspects of the project as proposed, changes in available sites for potential expansion and to provide additional specific information as required by the SD DENR to complete their review and approval of the preliminary planning document.

4.4 Proposed Wastewater Treatment Facility Improvements

Changes in the availability of the site for potential expansion have created the need to modify the Wastewater Treatment Facility Improvements alternatives that are being considered. Whereas the property identified in Section 4.4.2 of the Facility Plan (Treatment System Alternative 2 – Expand Wastewater Treatment Facility) anticipated the utilization of a site located to the south of the existing wastewater treatment facility. Due to the reluctance of the landowner to cede ownership of the property, it has been deemed expedient to consider other parcels of property that can be used for the expansion of the wastewater treatment facility.

One such location that was considered is property that is currently owned by the Town of Astoria. This parcel is located immediately north of the existing wastewater treatment facility. The property has been designated as a wetland area under the jurisdiction of the US Army Corps of Engineers. Due to the wetland designation, the difficulty of acquiring additional property for the construction of mitigation measures and the potential difficulty of constructing an expansion of the wastewater treatment facility in this location made the utilization of this parcel infeasible.

A second site was identified to the west of the existing wastewater treatment facility. This site has no identified wetlands or other identifiable deficiencies which would preclude its utilization for the expansion of the wastewater treatment facility. The landowner has been approached and has indicated a willingness to cede ownership of the property for the construction of the wastewater treatment facility expansion. Therefore, the following shall be added to Section 4 – DEVELOPMENT AND EVALUATION OF WASTEWATER ALTERNATIVES as Section 4.4.4 Treatment System Alternative 4: Expansion of the Wastewater Treatment Facility to the West.

4.4.4 Treatment System Alternative 4: Expand Wastewater Treatment Facility to the West

Treatment System Alternative 4 considers expanding the wastewater treatment facility by adding a 1.93-acre cell to the west of the existing facility. This alternative was added to propose an additional location in the event that land acquisition or soil types made one of the other locations less feasible. This alternative would also require a lift station to pump wastewater from the existing facility to the proposed expansion cell. The additional cell is proposed to have approximately a 1.93-acre water surface area. The actual construction area needed is estimated to be approximately 3.50 acres. Figure 4.4.4-1 shows the proposed location of this alternative.

Pursuant to Chapter IV of the SD DENR Design Criteria, a wastewater treatment facility is not allowed within 1,000 feet of a well that is used to supply potable water. A search of the well completion database that is maintained by the SD DENR shows that there are no wells that have been constructed within Sections 25 or 26 of Township 113N, Range 48W for this purpose.

Chapter IV, Section C.2. of the SD DENR Design Criteria requires, so far as practical, that the wastewater treatment facility should be located such that the prevailing winds are toward uninhabited areas. The prevailing wind direction for the months of March, April, October, and November was reviewed for the proposed site. It was found that the prevailing wind directions during these months are northwest and southeast. Copies of the applicable Wind Rose charts are contained in Appendix D. The nearest residence in these directions is 0.75 miles to the northwest. Further, according to Chapter IV, Section C.2 of the SD DENR Design Criteria Manual the direction of prevailing winds towards inhabited areas does not apply for the third cell for ponds operated in series.

According to Chaper IV, Section C.1 of the SD DENR Design Criteria Manual the pond site should be a distance of at least one-half mile from the community and one-fourth mile from a farm home or residence whenever possible. Figure 4.4.4-2 shows both radius distances from the proposed location. The proposed facility is within approximately 0.45 mile of the Town of Astoria and 0.20 mile of a nearby farm home when measured from the northeast corner of the proposed pond. The proposed location is a feasible location since it adjoins the existing facility. Moving the proposed location northwest to satisfy the recommended separation criteria would significantly increase this alternative cost. The need to purchase what is considered as prime agricultural land, a larger lift station, additional force main and discharge piping and 1,200 feet of access road construction would add an estimated $140,000 cost to this alternative. The Town would therefore request a deviation from the separation criteria if the proposed alternative is chosen.

Additional flow monitoring will need to be conducted to verify the size of the proposed pond and determine the effectiveness of the Town's sump pump removal efforts prior to the final design of this alternative. The cost estimate and equivalent uniform annual cost for Treatment System Alternative 4 are shown in the following tables.

Astoria Wastewater Treatment Facility
N
1 inch equals 400 feet
PEMC
PEMCd
County Hwy 311
3.5 Acres
PEMC
PEMCd
PEMA
PEMA
PEMA
PEMAd
PEMAd
PEMAd
PEMAd
PEMA
SPN
Legend
Wetlands
Proposed Pond

Figure: 4.4.4-1

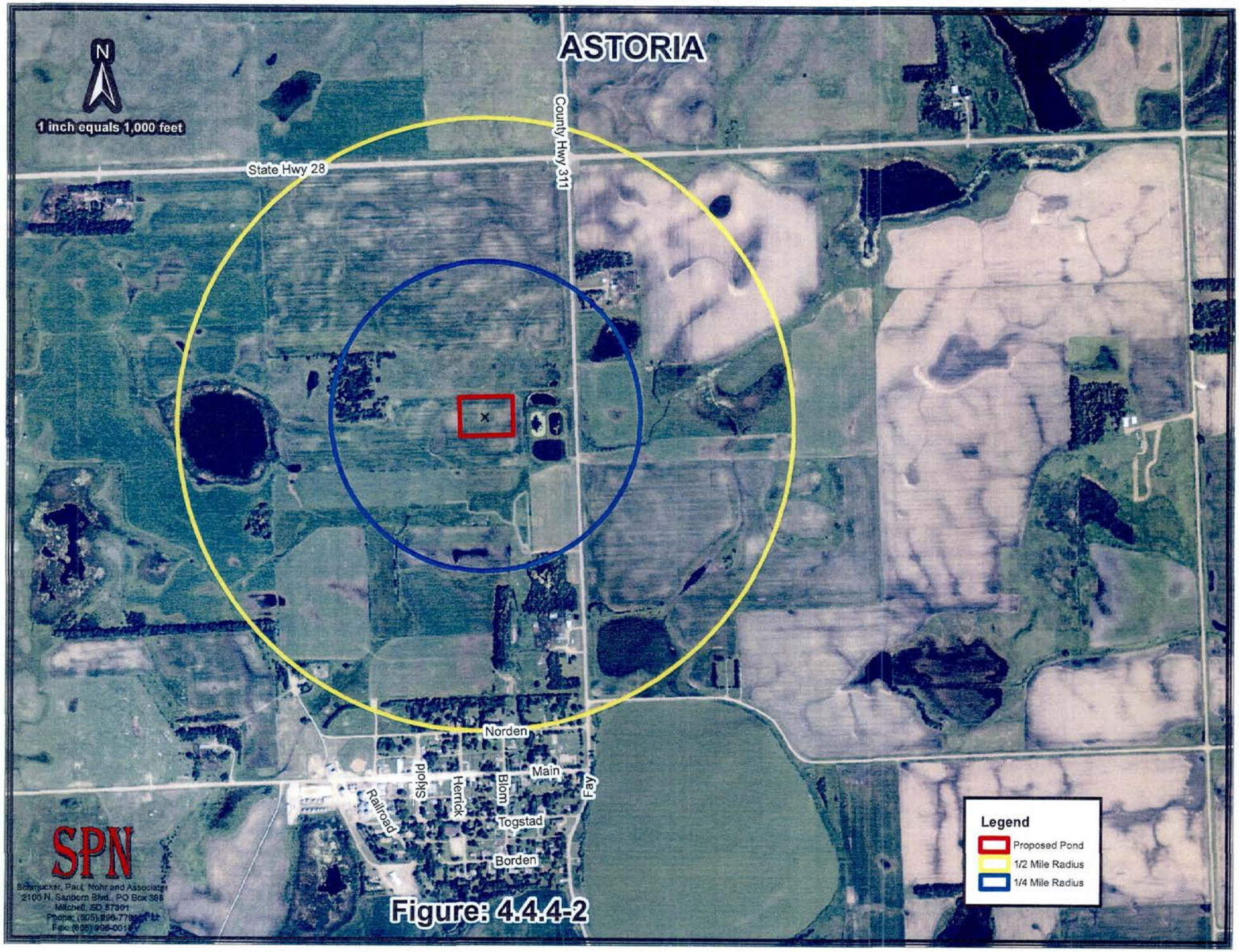

ASTORIA
N
1 inch equals 1,000 feet
State Hwy 28
County Hwy 311
Norden
Main
Skjold
Herrick
Blom
Fay
Railroad
Togstad
Borden
Legend
Proposed Pond
1/2 Mile Radius
1/4 Mile Radius
SPN
Schmucker, Paul, Nohr and Associates
2100 N. Sanborn Blvd., PO Box 365
Mitchell, SD 57301

Figure: 4.4.4-2

Table 4.4.4-1: Cost Estimate for Treatment System Alternative 4

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$24,800.00	$24,800.00
2	Remove and Stockpile Topsoil	2,900	CY	$2.00	$5,800.00
3	Unclassified Excavation & Embankment	30,000	CY	$2.50	$75,000.00
4	Pond Clay Liner	4,400	CY	$4.00	$17,600.00
5	Place Topsoil	2,900	CY	$3.00	$8,700.00
6	Transfer Lift Station and Controls	1	LS	$55,000.00	$55,000.00
7	4" PVC Force Main	1,150	LF	$28.00	$32,200.00
8	Inlet/Outlet Structure	3	EA	$3,500.00	$10,500.00
9	Flow Measurement / Discharge Structure	1	EA	$10,000.00	$10,000.00
10	Pond Depth Indicator	1	EA	$2,000.00	$2,000.00
11	Seepage Collars	2	EA	$500.00	$1,000.00
12	8" Gate Valve	2	EA	$2,500.00	$5,000.00
13	Inter-Pond Piping (8" DIP)	200	LF	$60.00	$12,000.00
14	Bypass Pumping	1	LS	$5,000.00	$5,000.00
15	Sanitary Sewer Manhole	1	EA	$3,200.00	$3,200.00
16	Seed, Fertilize & Mulch	6	AC	$2,000.00	$12,000.00
17	Fence Removal	800	LF	$1.50	$1,200.00
18	Fence	1,600	LF	$2.50	$4,000.00
19	Erosion Control	1	LS	$14,500.00	$14,500.00
20	Incidental Construction	1	LS	$27,500.00	$27,500.00
				Subtotal	$327,000.00
				Contingencies (10%)	$33,000.00
				Construction Total	$360,000.00
				Design Engineering	$40,000.00
				Soils Investigation	$5,000.00
				Bidding and Contract Documents	$5,000.00
				Construction Engineering	$50,000.00
				Land Purchase (4 Acres)	$24,000.00
				Administration & Legal	$11,000.00
				Total Project Cost	$495,000.00

Table 4.4.4-2: EUAC for Treatment System Alternative 4

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$24,800.00	$0.00	$0.00	$24,800.00
Remove and Stockpile Topsoil	$5,800.00	$0.00	$0.00	$5,800.00
Unclassified Excavation & Embankment	$75,000.00	$0.00	$0.00	$75,000.00
Pond Clay Liner	$17,600.00	$0.00	$0.00	$17,600.00
Place Topsoil	$8,700.00	$0.00	$0.00	$8,700.00
Transfer Lift Station and Controls	$55,000.00	$33,000.00	$13,683.21	$41,316.79
4" PVC Force Main	$32,200.00	$19,320.00	$8,010.90	$24,189.10
Inlet/Outlet Structure	$10,500.00	$6,300.00	$2,612.25	$7,887.75
Flow Measurement / Discharge Structure	$10,000.00	$6,000.00	$2,487.86	$7,512.14
Pond Depth Indicator	$2,000.00	$1,200.00	$497.57	$1,502.43
Seepage Collars	$1,000.00	$0.00	$0.00	$1,000.00
8" Gate Valve	$5,000.00	$3,000.00	$1,243.93	$3,756.07
Inter-Pond Piping (8" DIP)	$12,000.00	$7,200.00	$2,985.43	$9,014.57
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Sanitary Sewer Manhole	$3,200.00	$1,920.00	$796.11	$2,403.89
Seed, Fertilize & Mulch	$12,000.00	$0.00	$0.00	$12,000.00
Fence Removal	$1,200.00	$0.00	$0.00	$1,200.00
Fence	$4,000.00	$2,400.00	$995.14	$3,004.86
Erosion Control	$14,500.00	$0.00	$0.00	$14,500.00
Incidental Construction	$27,500.00	$0.00	$0.00	$27,500.00
Capital Costs	$168,000.00	$0.00	$0.00	$168,000.00
Total Construction Cost	$495,000.00	$80,340.00	$33,310.00	$461,690.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$400.00	$5,203.17
Materials	$300.00	$3,902.38
Miscellaneous	$900.00	$11,707.14
Subtotal	$1,600.00	$20,812.70

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$461,690.00
NPW of O & M Costs	$20,812.70
Total Net Present Worth	$482,502.70
Equivalent Uniform Annual Cost	$37,092.95

The following shall be added as Section 4.4.5

4.4.5 Treatment System Alternative 5: Total Retention System

Treatment System Alternative 5 considers expanding the wastewater treatment facility to provide the capability of operating as a total retention treatment system. A treatment facility of this nature relies solely on the natural elements of solar and wind energy to evaporate the wastewater and seepage of the wastewater into the ground as a means of disposal. This alternative was added to propose an additional treatment method. This alternative would require a fourth treatment cell with a water surface area of approximately 8.70 acres and an approximate construction cost of $720,000. When compared to the construction cost of Alternative 4, the Alternative 5 increased cost is due to a larger land purchase area of 12 acres, 60,000 cubic yards of excavation and other increased associated costs due to the size of the facility required.

The following shall be added as Section 4.4.6

4.4.6 Treatment System Alternative 6: Artificial Wetland

Treatment System Alternative 6 considers expanding the wastewater treatment facility to provide the capability of operating as an artificial wetland treatment system. An artificial wetland system would allow a continuous discharge typically for a period of 185 days out of the year during the summer months. The plant growth in the artificial wetland reduces the amount of nutrients and ammonia present in common municipal wastewater.

Generally, a discharge is not allowed from a wetland type wastewater treatment facility during the winter months. Therefore, Section B.2 of the SD DENR Design Criteria requires that the facility be sized to store the expected wastewater flows for a period of not less than 180 days. Of this storage capacity, the DENR Design Criteria requires that the volume of the pre-treatment portion of the facility be sized to store not less than 150 days of wastewater flow during the required storage period. The remainder of the wastewater flow can be stored in the wetland portion of the facility. In order for Astoria's treatment system to satisfy this criteria, two additional cells would need to be constructed. The two new cells would consist of a fourth cell with approximately 0.76 acre of water surface area and an artificial wetland cell with approximately 1.90 acres of water surface area.

The estimated construction cost of Alternative 6 is approximately $560,000. When compared to the construction cost of Alternative 4, the Alternative 6 increased cost is due to a larger land purchase area of six acres, several additional pond structures and transfer piping, and other increased associated costs due to the size of the facility.

SECTION 5 – SELECTION OF WASTEWATER ALTERINATIVES

Whereas Wastewater Treatment Alternative 4, 5, and 6 have been added to the Facility Plan, the following modifications are to be made to the Facility Plan. Section 5.2 – Wastewater Treatment System shall be deleted in entirety and replaced with the following Section.

5.2 WASTEWATER TREATMENT SYSTEM

Treatment System Alternative 1 (Do Nothing) is not recommended because it would not address any of the identified deficiencies the treatment system appears to be experiencing.

Treatment System Alternative 2 (Expand Wastewater Treatment Facility) with a total project cost of $495,000 is not recommended. This alternative would expand the existing facility to provide adequate treatment and storage of the wastewater flow that Astoria is experiencing. The property required for this alternative is not available for purchase; therefore, this alternative is not feasible at this time.

Treatment System Alternative 3 (Diversion Channel Rehabilitation) with a total project cost of $69,800 is recommended. This alternative would prevent the treatment facility from being flooded during high-intensity rain events.

Treatment System Alternative 4 (Expand Wastewater Treatment Facility to the West) with a total project cost of $495,000 is recommended. The property required for this alternative is available for purchase and this alternative is feasible. This alternative would expand the existing facility to provide adequate treatment and storage of the wastewater flow that Astoria is experiencing. Additional flow monitoring will need to be conducted to verify the size of the proposed pond and determine the effectiveness of the Town's sump pump removal efforts prior to final design.

Treatment System Alternative 5 (Total Retention System) with a total project cost of $720,000 is not recommended. This alternative is not the most cost effective alternative proposed.

Treatment System Alternative 6 (Artificial Wetland) with a total project cost of $560,000 is not recommended. This alternative is not the most cost effective alternative proposed and would require increased maintenance time and cost due to the continuous discharge monitoring this alternative would require.

5.3 IMPACT ON USER FEES

Table 5.3-1 shall be deleted in its entirety and replaced with the following

Table 5.3-1: Summary of Costs

Wastewater Collection	
Alternative 2: Clean and Televise Existing System	$38,900
Wastewater Treatment	
Alternative 3: Diversion Channel Rehabilitation	$69,800
Alternative 4: Expand Treatment Facility to the West	$495,000
Total	$603,700

SECTION 6 SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS FOR WASTEWATER IMROVEMENTS

6.3 ARRANGEMENT FOR IMPLEMENTATION

Table 6.3 Proposed Schedule shall be deleted in its entirety and replaced with Table 6.3-1 and Table 6.3-2.

Table 6.3-1: Alternative 3 Diversion Ditch Proposed Schedule

Facility Plan Addendum Submitted to Funding Agencies	May 15, 2013
Environmental Review Completed	June 3, 2013
Funding Agency Approval of Facility Plan	May 24, 2013
Final Funding Package Complete	May 27, 2013
Begin Design	May 27, 2013
Plans & Specifications Submitted to DENR	June 10, 2013
Plans & Specifications Approved by DENR	June 15, 2013
Advertisement for Bids	June 17, 2013
Open Bids	July 1, 2013
Award Bids	July 1, 2013
Begin Construction	July 21, 2013
Construction Complete	October 15, 2013
Project Close-out	November 15, 2013

Table 6.3-2: Alternative 4 Expand Wastewater Treatment Facility to the West

Proposed Schedule

Facility Plan Addendum Submitted to Funding Agencies	May 15, 2013
Environmental Review Completed	June 30,2013
Funding Agency Approval of Facility Plan	May 24, 2013
Final Funding Package Complete	May 24, 2013
Complete Additional Flow Monitoring and Analysis	June 25, 2013
Begin Design	June 25, 2013
Plans & Specifications Submitted to DENR	August 15, 2013
Plans & Specifications Approved by DENR	September 15, 2013
Advertisement for Bids	October 1, 2013
Open Bids	November 4, 2013
Award Bids	November 4, 2013
Begin Construction	November 4, 2013
Construction Complete	August 15, 2014
Project Close-out	September 15, 2014

6.4 LAND ACQUISITION

Section 6.4 Land Acquisition shall be deleted in it entirety and replaced with the following paragraph.

Land acquisition is required to construct Wastewater Treatment Alternative 4. The Town has a verbal agreement with the landowner for the proposed site. During the final design process and before completion of the design, a land purchase area will be determined. At that time a formal agreement for purchase will be negotiated and executed for the necessary property.

The following shall be added as Section 6.6

6.6 PERMITTING

Various permits will be required to construct the selected alternatives. SD DENR Storm Water Discharge and Dewatering Permits will be required for construction of Wastewater Treatment Alternatives 3 and 4. Permit applications will be completed upon the completion of final designs.

A Corps of Engineers 404 Permit will be required for the construction of Wastewater Treatment Alternative 3 since the improvements will take place in a jurisdictional waterway. Correspondence for the permit has been initiated with the Corps of Engineers and a permit application will be completed when design information is available.

The Town of Astoria will also apply for an Essential Services Exception Permit through Deuel County. This permit is used in Deuel County in lieu of a typical conditional use permit when essential services such as telecommunications, health and sanitation, power generation, and water are needed. A formal permit application will be completed when design information is available.

The following shall be added as Section 6.7

6.7 PUBLIC PARTICIPATION

Public input was collected during two public hearings conducted December 5, 2011, and January 6, 2012. Minutes from the two public hearings and records of Town Board resolutions are contained in Appendix E.

Appendix D

Wind Rose Charts

As provided by SDSU Climate Website

SOUTH DAKOTA STATE UNIVERSITY

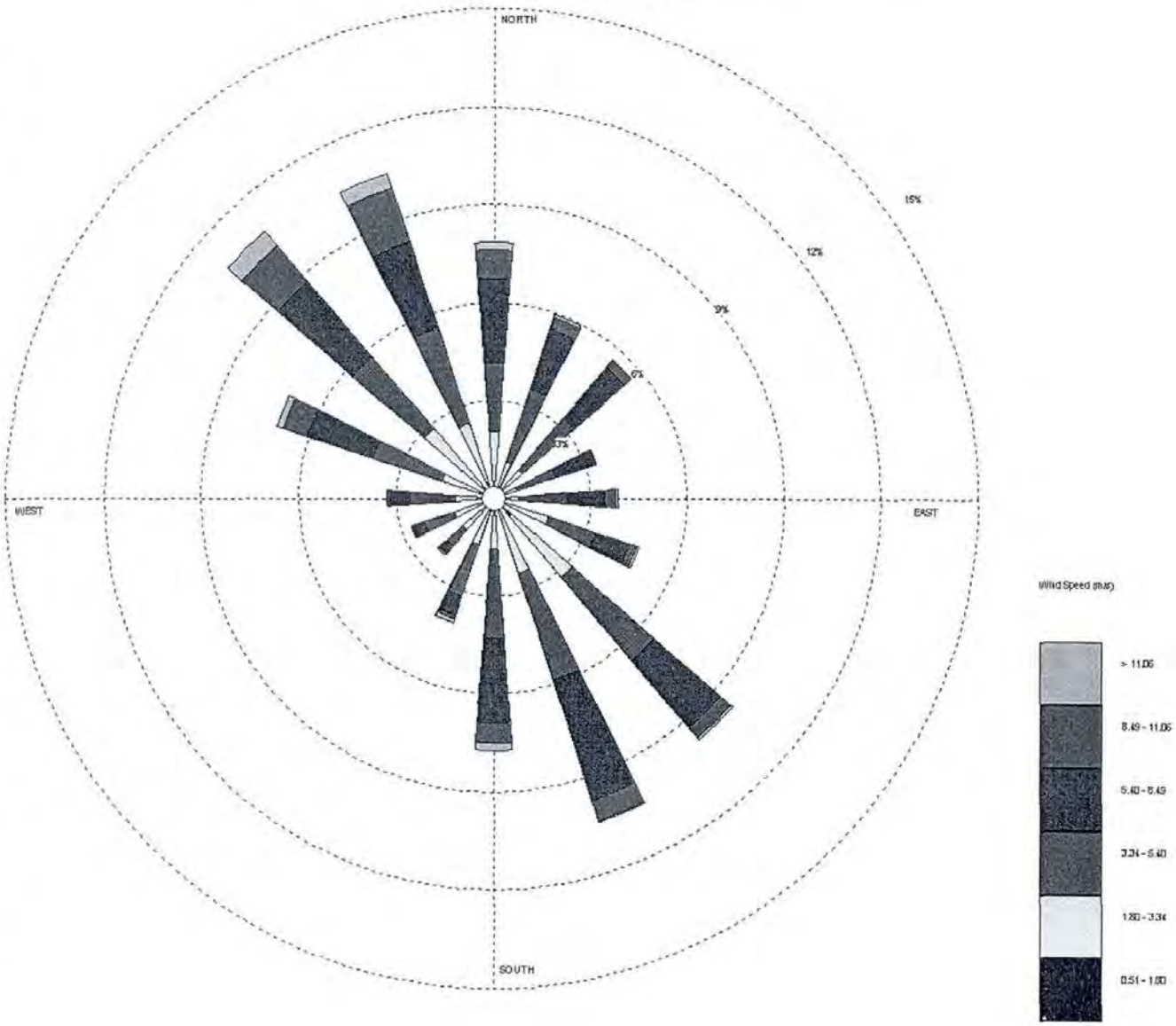
SOUTH DAKOTA Climate and Weather

Wind Rose charts (m/s)

For: Brookings Month of: March :: Go ::

(click here to view hourly average wind/temperature charts)

Brookings (726515):1995-2002
March



SOUTH DAKOTA STATE UNIVERSITY

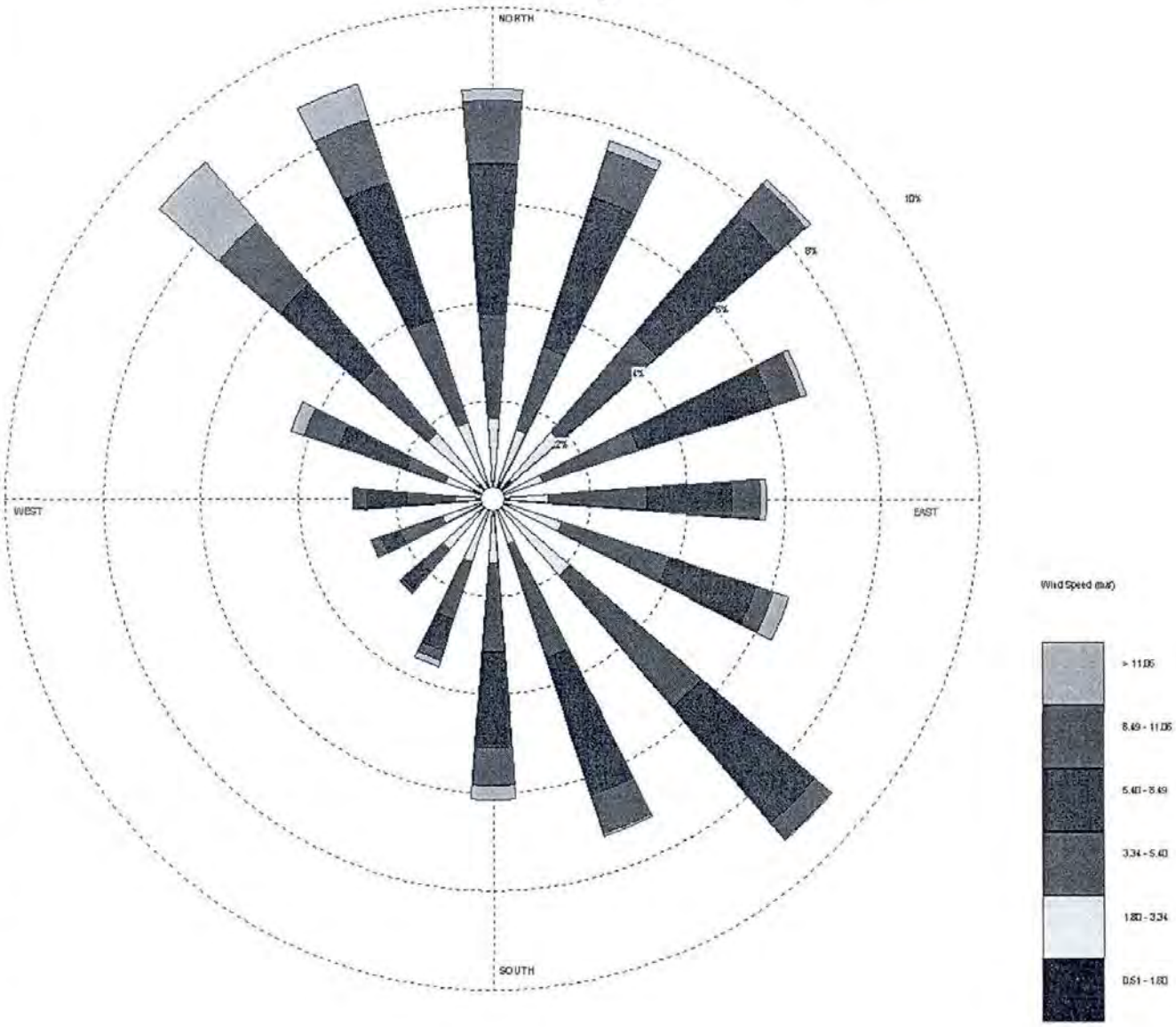
SOUTH DAKOTA Climate and Weather

Wind Rose charts (m/s)

For: Brookings Month of: April :: Go ::

(click here to view hourly average wind/temperature charts)

Brookings (726515):1995-2002
April



SOUTH DAKOTA STATE UNIVERSITY

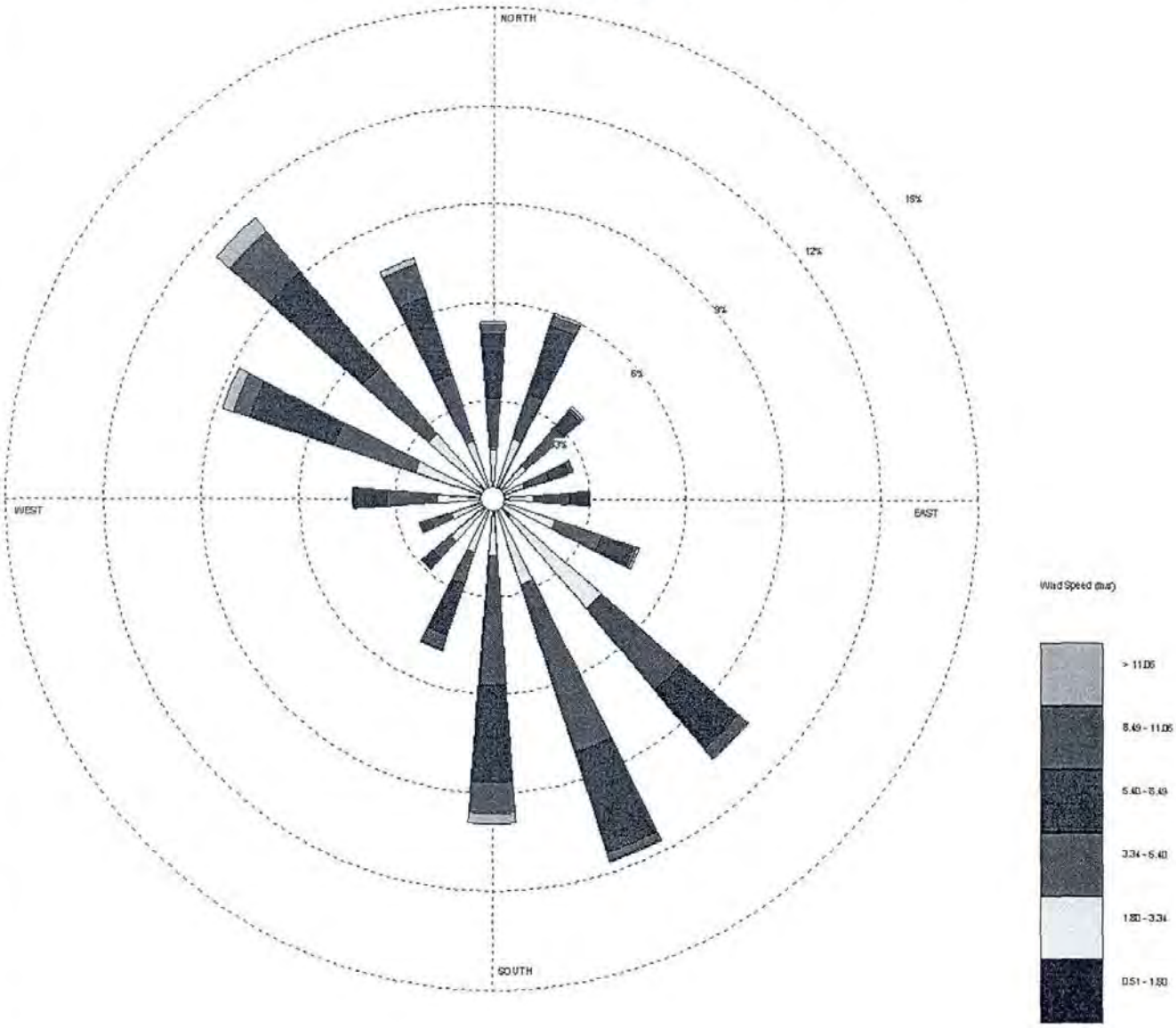
SOUTH DAKOTA Climate and Weather

Wind Rose charts (m/s)

For: Brookings Month of: October :: Go ::

(click here to view hourly average wind/temperature charts)

Brookings (726515):1995-2002
October



SOUTH DAKOTA STATE UNIVERSITY

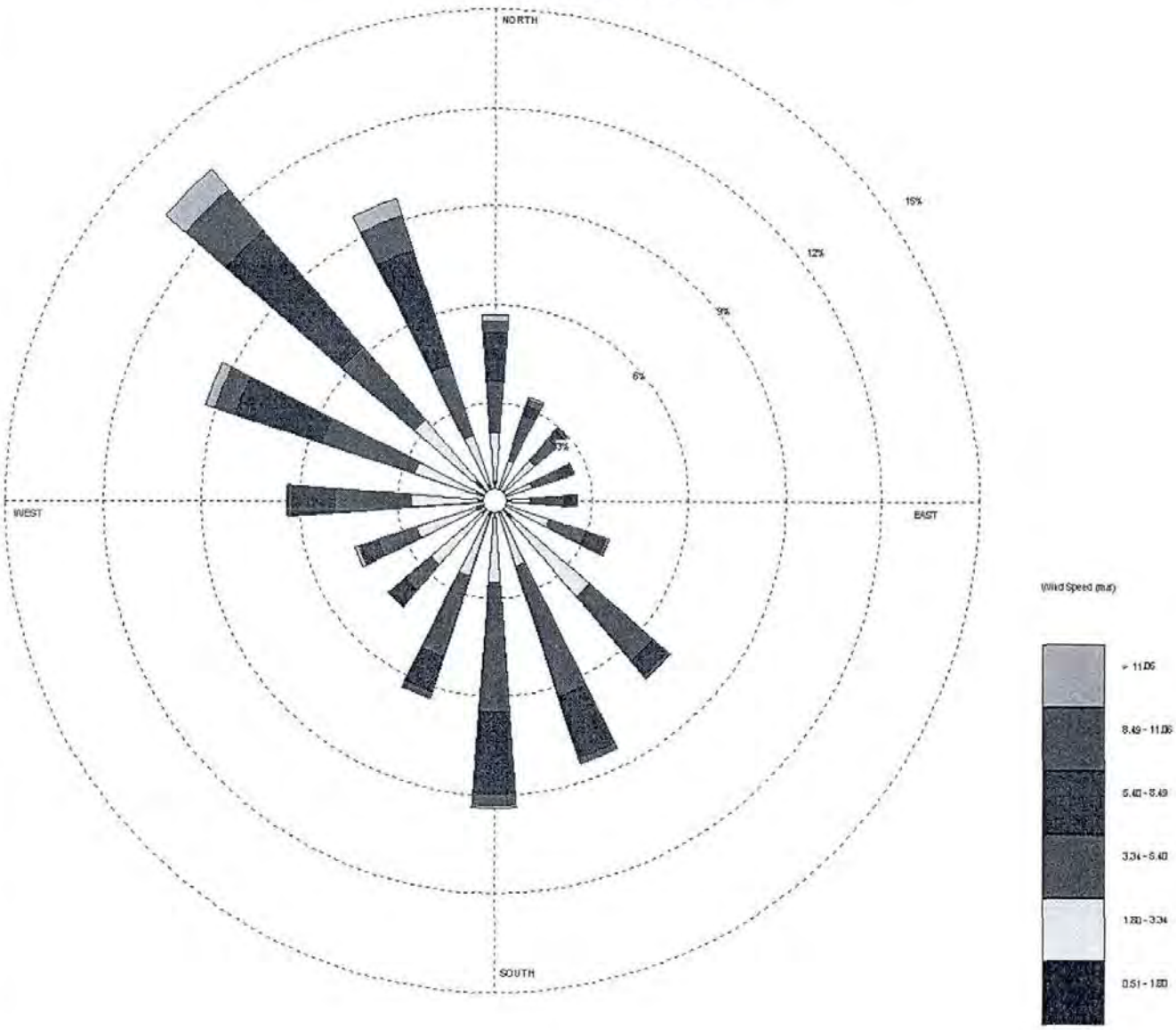
SOUTH DAKOTA
Climate and Weather

Wind Rose charts (m/s)

For: Brookings Month of: November :: Go ::

(click here to view hourly average wind/temperature charts)

Brookings (726515):1995-2002
November



Appendix E

Public Participation and Resolution Documentation

SPN

Schmucker, Paul, Nohr and Associates
2100 North Sanborn Blvd. – PO Box 398
Mitchell, SD 57301
Phone (605) 996-7761
Wats (800) 952-3598
FAX (605) 996-0015

Memo

To: Astoria File 13576

From: Chris Haines

CC:

Date: December 6, 2011

Re: Astoria Council Meeting on December 5, 2011

Astoria held a regular council meeting on December 5 at 7 pm to discuss the findings in the wastewater report completed by SPN. Several (5) residents were in attendance at the meeting with questions on the proposed project and results of the report. Others present at the meeting was the entire town board and FO of Astoria as well as Ted Haeder from 1st planning district.

Topics discussed:

Results of the report - The Town Board requested that I give a quick synopsis of the report to the residents present at the meeting. I gave about a 5 min review of the findings which was followed by a 20 min question and answer session from the residents and town board officials. Questions included details on the flow results, financial assistance for residences to remove sump pumps and design values for original design of ponds. Several questions asked if a water main could be leaking into sewer mains and if storm inlets were contributing.

Sequence of events for funding - Ted and myself commented on the sequence of applying for the state water plan and grant application times. Ted explained the difference from DENR grants, CDBG, and RD funding. The town decided to make the March 15th grant due date a goal for this project. They also set the date of January 7th for the required Public Hearing.

Televising the collection lines - Brief discussion was made toward televising the existing collection lines in efforts to further reduce the amount of I & I. One residents questioned if the mains were collecting seepage and I indicated that the

Town was more concerned with sump pumps and basements footing drains on private property. Discussion was made on the town doing televising on the mains and I asked Ted if grant funding was available through RD or one of the local cooperative districts. Ted commented that occasionally there is partial funding available for this and he would look further into it.

Pond Expansion site - Discussion was had on the Town's proposed site for the overflow pond as it was indicated to be a wetland (Google earth FWS database). I mentioned that an environmental assessment would have to be completed on the site to indicate if construction could be possible on the wetland. I indicated that this would be started right away.

The meeting concluded with the scheduling of the future public hearing on January 7th, 2012.

Chris Haines, E.I.T
Project Engineer
SPN & Assoc

SRF Public Hearing Discussion
January 06, 2012
Town of Astoria

1. The need for the project

WWTF

- 145 people served
- 67 sewer service connections
- 10,700 lf of 8" PVC pipe
- 30 Manholes
- WWTF designed for 1,150,200 gallons in 180 days
- Now getting 4,788,400 gallons in 180 days
- Need 1.93 Acres of Additional Surface Area
- Need 0.93 Acres of Additional Surface Area if I&I can be reduced 40%

DIVERSION DITCH

- Intent of the ditch is the diversion of storm water runoff around the west and north sides of the Wastewater Treatment Facility
- Significant build-up of silt and vegetation in the channel has decreased the channel capacity
- During periods of high flow in creek (large storms or spring runoff) storm water in creek overtops the existing dikes of the Wastewater Treatment Facility
- Extraneous water entering the Wastewater Treatment Facility results in unauthorized discharge of inadequately treated wastewater

I&I REDUCTION

- Flow monitoring during summer of 2011 showed a peak daily flow of 144,000 gallons per day
- Flow monitoring showed an average daily I&I Flow of 38,400 gallons per day
- Existing WWTF designed for 1,150,200 gallons in 180 days
- Now getting 4,788,400 gallons in 180 days
- Conclusion – I&I Flow is excessive

2. All alternatives that were evaluated, including the cost of each

Collection System

- Do Nothing
- Clean and Televise @ a cost of approximately $38,900

Treatment Plant

- Do Nothing
- Expansion by the addition of a third cell @ a cost of approximately $495,000

Diversion Channel

- Do Nothing
- Clean, re-grade and align existing channel; Raise existing outside dike; and place riprap on outside of existing outside dike @ a cost of approximately $69,800

3. A description of the proposed project

Wastewater Treatment Facility

- Add 1.93 Acres of Additional Surface Area
- Size of facility addition can be reduced to about 0.93 acres if the I&I can be reduced by 40%
- Location of addition has not been finalized because of wetland designation on property now owned by the Town (not sure of federal and state agency restrictions until we get into the actual design)
- Will need pumping facility regardless of location

Diversion Ditch

- Clean, re-grade and align existing channel
- Raise existing outside dike
- Place riprap on outside of existing outside dike

I&I Reduction

- Disconnect sump pumps
- Remove storm water catch basins
- Televise sanitary sewer system

4. The proposed financing for the project

- Combination of SRF Loan and Consolidated Water Facilities Construction Grant
- Possible application for Rural Development loan and grant
- Possible application for Community Development Block Grant
- RD grant and CDBG grant dependent on income levels (will probably need an income survey)

5. The amount of SRF loan expected to be borrowed

- $650,000 at current cost estimates

6. The interest rate and term of the loan

- 3.00% for 20 years for the SRF Loan
- 3.25% for 30 years for the SRF Loan

7. The effect of the proposed financing on user rates

- Refer to attached tables
- Depends on grant and/or principal forgiveness

8. Comments received during the public hearing

- Terry Lovre asked a question relative to the possible use of the property to the north of the existing WWTF currently owned by the Town. The use is dependent upon the restrictions placed on the Town by the federal and state agencies. This will be a factor to be considered during the design process.

- A resident of the community asked what was being done with the money that was being raised by the current quarterly billing of $66. The Town Board members explained that the money being raised by the current rates is being placed in the sewer fund to help build up local funding resources in an effort to reduce the amount of loan funds that may be required.

- The owner of the property between the town and the creek expressed concern that the Town was not adequately maintaining the storm drainage pipe that is crossing his land. The Town Board told him that they would look at this matter and address it during the design if appropriate.

- The four (4) members of the general public present for the hearing expressed support of the resolution considered by the Town Board to apply for SRF and Consolidated funding for the project. The Town Board adopted Resolution 2012-01R authorizing the preparation and submittal of an application for $650,000.

Resolution # 2012 - 1R

WHEREAS, the Town of Astoria has identified the need for wastewater system improvements; and

WHEREAS, the Town of Astoria proposes to clean and televise the existing wastewater lines, rehabilitate the existing diversion channel and expand the existing treatment facility; and

WHEREAS, the Town of Astoria is eligible to apply for Clean Water State Revolving Fund (SRF) Program assistance for the proposed project; and

WHEREAS, with the submission of the SRF application, the Town of Astoria assures and certifies that all SRF program requirements will be fulfilled.

THEREFORE BE IT RESOLVED that the Town of Astoria duly authorizes the Mayor of Astoria to execute and submit an SRF loan application requesting up to $650,000 of loan funds for the proposed project to be borrowed at an interest rate of 3.0% for a term of 20 years and to be secured by wastewater user revenues.

FURTHER BE IT RESOLVED, that the Mayor of Astoria be hereby designated as the certifying officer for any loan agreement, contracts, pay requests, correspondence, and other required documents as a result of this application.

This resolution is effective immediately upon passage.

Adopted this 9th day of January 2012.

Geoff Anderson

Mayor
City of Astoria

Attest: Vicki Oswall

Finance Officer
City of Astoria

RESOLUTION # 2012-1

WHEREAS, the City of Astoria has identified the need to renovate the City's wastewater treatment facility, and

WHEREAS, the City of Astoria proposes to renovate the existing wastewater treatment facility, and

WHEREAS, the City of Astoria is eligible for Federal assistance for the proposed project, and

WHEREAS, the City of Astoria has held the required public hearing on Monday, September 10, 2012, at 7:00 p.m., and

WHEREAS, with the submission of the CDBG application the City of Astoria assures and certifies that all CDBG program requirements will be fulfilled, and

THEREFORE, BE IT RESOLVED that the City of Astoria duly authorizes the Mayor of the City of Astoria to sign and submit the CDBG application requesting up to $310,850 of funds.

This resolution is effective immediately upon passage.

Adopted this 10th Day of September 2012.

Geoff Andrews

Mayor
City of Astoria

Vicki Oswald

Finance Officer
City of Astoria

Resolution # 2012-2

WHEREAS, the City of Astoria expects to be the recipient of a Community Development Block Grant from the U.S. Department of Housing and Urban Development as administered by the State of South Dakota, and;

WHEREAS, the City of Astoria is required to designate a certifying officer for the purpose of signing required documents pertaining to this grant;

NOW THEREFORE, BE IT RESOLVED, that the Mayor of the City of Astoria be hereby designated as the City's official for the purpose of signing CDBG grant agreements, contracts, correspondence, pay requests, and other required documents; and.

WHEREAS, the City of Astoria is required to designate an environmental certifying officer for the purpose of signing required environmental documents pertaining to this grant;

AND BE IT FURTHER RESOLVED, that the Mayor of the City of Astoria be hereby designated as the City's environmental certifying officer for the purpose of signing environmental correspondence and other required documents and forms.

This resolution is effective immediately upon passage.

Dated this 10th day of September 2012.

Geoff Andersen

Mayor
City of Astoria

Vicki Ovall

Finance Officer
City of Astoria

RESOLUTION NO. 2012 - 3

RESOLUTION APPROVING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Astoria (the "City") has determined it is necessary to proceed with improvements to its Wastewater Treatment System, including but not limited to renovating the existing wastewater treatment lagoon (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") has been prepared; and

WHEREAS, the City has reviewed the Application to be submitted to the Board, true copies of which are attached hereto, and finds it proper in all respects; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $603,700 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Astoria, South Dakota, this 10th day of September 2012.

APPROVED:

Carroll Andersen
Mayor
City of Astoria

(Seal)
Attest: Vicki Orvall
City Finance Officer

ADDITIONAL INFORMATION TO
ADDENDUM NUMBER ONE
to the
FACILITY PLAN
for the
WASTEWATER SYSTEM

Astoria, SD

SPN #13576

September, 2013

INTRODUCTION

The following tables are being offered in response to a request received from the SD DENR for equivalent uniform annual cost estimates of Addendum Number One Alternatives 5 Total Retention System and Alternative 6 Artificial Wetland.

TREATMENT SYSTEM ALTERNATIVE 5: TOTAL RETENTION SYSTEM

The following is the EUAC for Alternative 5 Total Retention System.

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$35,850.00	$0.00	$0.00	$35,850.00
Remove and Stockpile Topsoil	$19,400.00	$0.00	$0.00	$19,400.00
Unclassified Excavation & Embankment	$150,000.00	$0.00	$0.00	$150,000.00
Pond Clay Liner	$64,000.00	$0.00	$0.00	$64,000.00
Place Topsoil	$29,100.00	$0.00	$0.00	$29,100.00
Transfer Lift Station and Controls	$55,000.00	$33,000.00	$13,683.21	$41,316.79
4" PVC Force Main	$12,600.00	$7,560.00	$3,134.70	$9,465.30
Inlet/Outlet Structure	$7,000.00	$4,200.00	$1,741.50	$5,258.50
Pond Depth Indicator	$2,000.00	$1,200.00	$497.57	$1,502.43
Seepage Collars	$1,000.00	$0.00	$0.00	$1,000.00
8" Gate Valve	$2,500.00	$1,500.00	$621.96	$1,878.04
Inter-Pond Piping (8" DIP)	$9,000.00	$5,400.00	$2,239.07	$6,760.93
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Sanitary Sewer Manhole	$3,200.00	$1,920.00	$796.11	$2,403.89
Seed, Fertilize & Mulch	$24,000.00	$0.00	$0.00	$24,000.00
Fence Removal	$1,950.00	$0.00	$0.00	$1,950.00
Fence	$7,000.00	$4,200.00	$1,741.50	$5,258.50
Erosion Control	$14,500.00	$0.00	$0.00	$14,500.00
Incidental Construction	$40,800.00	$0.00	$0.00	$40,800.00
Capital Costs	$237,000.00	$0.00	$0.00	$237,000.00
Total Construction Cost	$720,900.00	$58,980.00	$24,460.00	$696,440.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$1,500.00	$19,511.90
Materials	$800.00	$10,406.35
Miscellaneous	$900.00	$11,707.14
Subtotal	$3,200.00	$41,625.40

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$696,440.00
NPW of O & M Costs	$41,625.40
Total Net Present Worth	$738,065.40
Equivalent Uniform Annual Cost	$56,739.62

TREATMENT SYSTEM ALTERNATIVE 6: ARTIFICIAL WETLAND

The following is the EUAC for Alternative 6 Artificial Wetland.

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$26,500.00	$0.00	$0.00	$26,500.00
Remove and Stockpile Topsoil	$9,800.00	$0.00	$0.00	$9,800.00
Unclassified Excavation & Embankment	$100,000.00	$0.00	$0.00	$100,000.00
Pond Clay Liner	$7,400.00	$0.00	$0.00	$7,400.00
Place Topsoil	$14,700.00	$0.00	$0.00	$14,700.00
Transfer Lift Station and Controls	$55,000.00	$33,000.00	$13,683.21	$41,316.79
4" PVC Force Main	$12,600.00	$7,560.00	$3,134.70	$9,465.30
Inlet/Outlet Structure	$17,500.00	$10,500.00	$4,353.75	$13,146.25
Flow Measurement / Discharge Structure	$10,000.00	$6,000.00	$2,487.86	$7,512.14
Pond Depth Indicator	$4,000.00	$2,400.00	$995.14	$3,004.86
Seepage Collars	$1,000.00	$0.00	$0.00	$1,000.00
8" Gate Valve	$7,500.00	$4,500.00	$1,865.89	$5,634.11
Inter-Pond Piping (8" DIP)	$12,000.00	$7,200.00	$2,985.43	$9,014.57
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Sanitary Sewer Manhole	$3,200.00	$1,920.00	$796.11	$2,403.89
Seed, Fertilize & Mulch	$12,000.00	$0.00	$0.00	$12,000.00
Fence Removal	$1,200.00	$0.00	$0.00	$1,200.00
Fence	$5,000.00	$3,000.00	$1,243.93	$3,756.07
Erosion Control	$18,000.00	$0.00	$0.00	$18,000.00
Incidental Construction	$29,600.00	$0.00	$0.00	$29,600.00
Capital Costs	$209,000.00	$0.00	$0.00	$209,000.00
Total Construction Cost	$561,000.00	$76,080.00	$31,550.00	$529,450.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$2,500.00	$32,519.84
Materials	$600.00	$7,804.76
Miscellaneous	$900.00	$11,707.14
Subtotal	$4,000.00	$52,031.75

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$529,450.00
NPW of O & M Costs	$52,031.75
Total Net Present Worth	$581,481.75
Equivalent Uniform Annual Cost	$44,702.07

ADDENDUM #2
TO
FACILITY PLAN
FOR
WASTEWATER SYSTEM
IN
ASTORIA, SOUTH DAKOTA

RECEIVED
DEC 23 2013
Division of Financial
& Technical Assistance

SPN #13576

DECEMBER 2013

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Harlan J. Quenzer

Registration Number SD #2726

Date 12/19/13

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 2726
HARLAN JOHN QUENZER
SOUTH DAKOTA

SCHMUCKER, PAUL, NOHR & ASSOCIATES
CONSULTING ENGINEERS - SURVEYORS
2100 NORTH SANBORN BLVD, PO BOX 398
MITCHELL, SOUTH DAKOTA 57301

ADDENDUM NUMBER TWO

to the

FACILITY PLAN

for the

WASTEWATER SYSTEM

Astoria, SD

SPN #13576

DECEMBER 2013

1. Introduction

The modifications to the Facility Plan for the Wastewater System Improvements as set forth hereinafter are provided to summarize the results of cleaning and televising the sanitary sewer collection system and to provide the Town of Astoria with alternatives to be considered for the correction of the identified deficiencies. Storm sewer alternatives are also included in this addendum to provide the Town Board potential Alternatives to improve drainage in areas the Town Board has identified as poorly drained or where surface water is flowing into the sanitary sewer collection system.

SECTION 3.2 SHALL BE DELETED IN ITS ENTIRETY AND REPLACED WITH THE FOLLOWING:

3.2 CLEANING AND TELEVISING

Johnson Jet Line, Inc. completed the cleaning and televising of Astoria's sanitary sewer system in June 2013. The entire system of main line piping was found to be constructed of eight-inch PVC pipe. There was a total of 9,753 feet inspected which basically was the entire system of mainline piping. Televising was not completed on any of the service line piping.

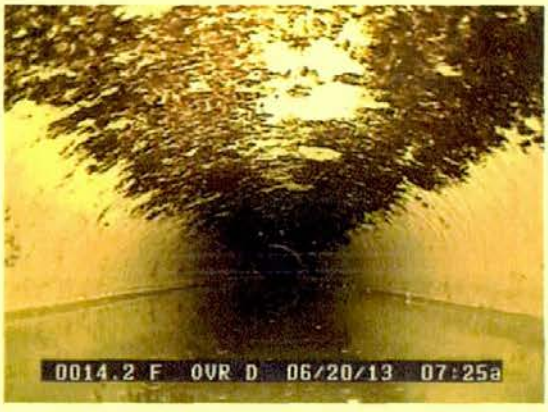
The pipe was found to be unusually full of sediment and gravel. This is typical of systems that have never been cleaned and subjected to the inflow of surface water. Overall, the pipe was observed to be in good condition. However, there are widespread sags throughout the system. In fact, the portion of the system that contains significant sags comprises 9,424 feet which is approximately 97 percent of the entire system. There was also approximately 97 feet of moderately crushed pipe which is egg-shaped in appearance. Several structural deficiencies were identified which consist of broken pipe, cleanouts and services. Refer to the photographs below for views of selected deficiencies inside the pipe.

During the televising process, there were very wet conditions due to rainfall events. Infiltration from 61 of the total of 101 service connections was observed. Infiltration was also observed in 16 of the 29 manholes. A table summarizing the results of televising is contained in Appendix F and the full report from Johnson Jet Line is available from the Town of Astoria.

Sag and Egg-Shaped between Blom and Highway 311

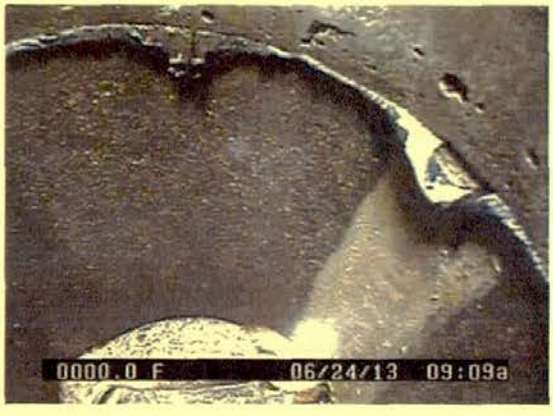
Severe Deposits on Service with Infiltration between Railroad and Herrick on Togstad

Hole in Pipe West of Blom on Alley Line North of Main



Severe Sag South of the Treatment Pond

Cone Section is Deteriorating South of the Treatment Pond



Severe Infiltration in Manhole on Blom North of Main

Figure 3.3: Photographs from TV Inspection

SECTION 4.3 SHALL BE DELETED IN ITS ENTIRETY AND REPLACED WITH THE FOLLOWING:

4.3 PROPOSED WASTEWATER COLLECTION SYSTEM IMPROVEMENTS

The general operating characteristics and deficiencies of the wastewater collection system are discussed in Section 3 of this report. The deficiencies identified by the televising of the wastewater collection system were categorized into structural deficiencies, infiltration deficiencies and maintenance deficiencies. The structural deficiencies are considered to be fairly serious and should be repaired as soon as possible. The infiltration deficiencies are not as serious but contribute infiltration and inflow to the treatment facility. The maintenance deficiencies are mainly sags and egg-shaped pipe which will require periodic cleaning to keep the system working properly.

4.3.1 Collection System Alternative 1: Do Nothing

The first wastewater collection system alternative that was considered is the "do nothing" alternative. Because doing nothing will not address any of the problems with the system, it is not considered as an acceptable alternative.

4.3.2 Collection System Alternative 2: Repair Structural Deficiencies

The structural deficiencies identified are recommended to be repaired as soon as possible. Structural deficiencies can result in complete failure or collapse of the sanitary sewer main causing blockages and loss of service resulting in flooding basements, private property damage, and human health concerns. The location and type of structural deficiency considered for repair in this alternative is shown in Figure 4.3.2. The cost estimate and EUAC for Alternative 2 are shown in Table 4.3.2-1 and Table 4.3.2-2.

Figure 4.3.2: Structural Deficiencies

Table 4.3.2-1: Cost Estimate for Collection System Alternative 2

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$2,200.00	$2,200.00
2	Remove and Dispose of Existing Manhole	1	EA	$700.00	$700.00
3	8" Sewer Pipe Repair in 4 Locations - 25 LF	1	LS	$8,500.00	$8,500.00
4	Sanitary Sewer Manhole	1	EA	$4,200.00	$4,200.00
5	Connect Existing Pipe to New Manhole	2	EA	$1,000.00	$2,000.00
6	Connect to Existing Sewer Service	2	EA	$250.00	$500.00
7	8" x 4" Sanitary Sewer Wye	2	EA	$150.00	$300.00
8	4" SDR 35 Sanitary Sewer Pipe	8	LF	$30.00	$240.00
9	Gravel Surfacing (4")	80	TN	$16.00	$1,280.00
10	Bypass Pumping	1	LS	$5,000.00	$5,000.00
11	Traffic Control	1	LS	$3,000.00	$3,000.00
12	Siltation and Erosion Control	1	LS	$1,000.00	$1,000.00
13	Topsoil, Seed, Fertilize & Mulch	170	SY	$2.00	$340.00
				Subtotal	$29,260.00
				Contingencies	$2,900.00
				Total Construction Cost	$32,160.00
				Legal and Administration Cost	$1,300.00
				Design Engineering	$4,600.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$5,500.00
				Total Project Cost	$48,560.00

Table 4.3.2-2: EUAC for Collection System Alternative 2

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$2,200.00	$0.00	$0.00	$2,200.00
Remove and Dispose of Existing Manhole	$700.00	$0.00	$0.00	$700.00
8" Sewer Pipe Repair in 4 Locations - 25 LF	$8,500.00	$5,100.00	$2,114.68	$6,385.32
Sanitary Sewer Manhole	$4,200.00	$2,520.00	$1,044.90	$3,155.10
Connect Existing Pipe to New Manhole	$2,000.00	$1,200.00	$497.57	$1,502.43
Connect to Existing Sewer Service	$500.00	$300.00	$124.39	$375.61
8" x 4" Sanitary Sewer Wye	$300.00	$180.00	$74.64	$225.36
4" SDR 35 Sanitary Sewer Pipe	$240.00	$144.00	$59.71	$180.29
Gravel Surfacing (4")	$1,280.00	$768.00	$318.45	$961.55
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Traffic Control	$3,000.00	$0.00	$0.00	$3,000.00
Siltation and Erosion Control	$1,000.00	$0.00	$0.00	$1,000.00
Topsoil, Seed, Fertilize & Mulch	$340.00	$0.00	$0.00	$340.00
Capital Costs	$19,300.00	$0.00	$0.00	$19,300.00
Total Construction Cost	$48,560.00	$10,210.00	$4,230.00	$44,330.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$0.00	$0.00
Materials	$0.00	$0.00
Miscellaneous	$0.00	$0.00
Subtotal	$0.00	$0.00

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$44,330.00
NPW of O & M Costs	$0.00
Total Net Present Worth	$44,330.00
Equivalent Uniform Annual Cost	$3,407.92

4.3.3 Collection System Alternative 3: Repair Infiltration Deficiencies

The infiltration deficiencies include the service connections and manholes that were observed to be leaking. Large amounts of infiltration strain the wastewater collection and treatment system. Alternative 3 considers the spot repairs of the sanitary sewer collection system in various locations as needed to correct the identified infiltration deficiencies.

During the review of the televising data the flow rates of the infiltration deficiencies was estimated at approximately 3% of the total inflow and infiltration. Therefore, it is assumed that completing this alternative would reduce the I&I flowing to the wastewater treatment facility by 3% or 415 gpd. If this alternative was completed it would reduce the additional pond area needed, identified in Wastewater Treatment Alternative 4 as 1.93 acres, by only 0.07 acres. The estimated cost savings of reducing the additional treatment area needed by 0.07 acres is $1,500 because it would only reduce the amount of excavation by 370 CY. Reducing the treatment area by that small of a portion is not likely to change the land purchase area or other high priced bid items such as the transfer lift station or pond piping and structures. The cost estimate and EUAC for Alternative 3 are shown in Table 4.3.3-1 and Table 4.3.3-2.

Table 4.3.3: Cost Estimate for Collection System Alternative 3

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$17,700.00	$17,700.00
2	Remove and Dispose of Existing Manhole	16	EA	$500.00	$8,000.00
3	Patching 8" PVC Sewer	244	LF	$50.00	$12,200.00
4	Patching 4" Service Pipe	244	LF	$30.00	$7,320.00
5	Sanitary Sewer Manhole	16	EA	$3,000.00	$48,000.00
6	Connect Existing Pipe to New Manhole	38	EA	$1,000.00	$38,000.00
7	Connect to Existing Sewer Service	61	EA	$250.00	$15,250.00
8	8" x 4" Sanitary Sewer Wye	61	EA	$200.00	$12,200.00
9	Cap Abandoned Service	34	EA	$1,000.00	$34,000.00
10	Gravel Surfacing (4")	1,700	TN	$16.00	$27,200.00
11	Bypass Pumping	1	LS	$6,000.00	$6,000.00
12	Traffic Control	1	LS	$5,000.00	$5,000.00
13	Siltation and Erosion Control	1	LS	$2,000.00	$2,000.00
14	Topsoil, Seed, Fertilize & Mulch	3,700	SY	$1.50	$5,550.00
				Subtotal	$238,420.00
				Contingencies	$23,800.00
				Total Construction Cost	$262,220.00
				Legal and Administration Cost	$10,500.00
				Design Engineering	$25,600.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$30,700.00
				Total Project Cost	$334,020.00

Table 4.3.3-2: EUAC for Collection System Alternative 3

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$17,700.00	$0.00	$0.00	$17,700.00
Remove and Dispose of Existing Manhole	$8,000.00	$0.00	$0.00	$8,000.00
Patching 8" PVC Sewer	$12,200.00	$7,320.00	$3,035.19	$9,164.81
Patching 4" Service Pipe	$7,320.00	$4,392.00	$1,821.11	$5,498.89
Sanitary Sewer Manhole	$48,000.00	$28,800.00	$11,941.71	$36,058.29
Connect Existing Pipe to New Manhole	$38,000.00	$22,800.00	$9,453.86	$28,546.14
Connect to Existing Sewer Service	$15,250.00	$9,150.00	$3,793.98	$11,456.02
8" x 4" Sanitary Sewer Wye	$12,200.00	$7,320.00	$3,035.19	$9,164.81
Cap Abandoned Service	$34,000.00	$20,400.00	$8,458.71	$25,541.29
Gravel Surfacing (4")	$27,200.00	$16,320.00	$6,766.97	$20,433.03
Bypass Pumping	$6,000.00	$0.00	$0.00	$6,000.00
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Siltation and Erosion Control	$2,000.00	$0.00	$0.00	$2,000.00
Topsoil, Seed, Fertilize & Mulch	$5,550.00	$0.00	$0.00	$5,550.00
Capital Costs	$95,600.00	$0.00	$0.00	$95,600.00
Total Construction Cost	$334,020.00	$116,500.00	$48,310.00	$285,710.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$150.00	$1,951.19
Materials	$0.00	$0.00
Miscellaneous	$200.00	$5,000.00
Subtotal	$350.00	$6,951.19

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$285,710.00
NPW of O & M Costs	$6,951.19
Total Net Present Worth	$292,661.19
Equivalent Uniform Annual Cost	$22,498.66

4.3.4 Collection System Alternative 4: Repair Maintenance Issues

The maintenance issues are identified as the significant sags and three manholes in poor condition at the inverts. These deficiencies would be repaired by open trench replacement methods. The cost estimate and EUAC for Alternative 4 are shown in Table 4.3.4-1 and Table 4.3.4-2.

Table 4.3.4-1: Cost Estimate for Collection System Alternative 4

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$31,900.00	$31,900.00
2	Remove and Dispose of Existing Asphalt	450	SY	$5.00	$2,250.00
3	Remove and Dispose of Existing Manhole	3	EA	$500.00	$1,500.00
4	8" SDR 35 PVC Sanitary Sewer Pipe	6,100	LF	$35.00	$213,500.00
5	4" SDR 35 Sanitary Sewer Pipe	1,419	LF	$25.00	$35,475.00
6	Sanitary Sewer Manhole	3	EA	$3,000.00	$9,000.00
7	Connect Existing Pipe to New Manhole	18	EA	$1,000.00	$18,000.00
8	Connect to Existing Sewer Service	43	EA	$250.00	$10,750.00
9	8" x 4" Sanitary Sewer Wye	43	EA	$150.00	$6,450.00
10	Asphalt Surfacing (3")	10	TN	$150.00	$1,500.00
11	Gravel Base Course (6")	20	TN	$25.00	$500.00
12	Gravel Surfacing (4")	4,600	TN	$16.00	$73,600.00
13	Bypass Pumping	1	LS	$5,000.00	$5,000.00
14	Traffic Control	1	LS	$7,000.00	$7,000.00
15	Siltation and Erosion Control	1	LS	$3,000.00	$3,000.00
16	Topsoil, Seed, Fertilize & Mulch	11,000	SY	$1.00	$11,000.00
				Subtotal	$430,425.00
				Contingencies	$43,000.00
				Total Construction Cost	$473,425.00
				Legal and Administration Cost	$18,900.00
				Design Engineering	$41,500.00
				Bidding Phase Engineering	$5,000.00
				Construction Engineering	$45,700.00
				Total Project Cost	$584,525.00

Table 4.3.4-2: EUAC for Collection System Alternative 4

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$31,900.00	$0.00	$0.00	$31,900.00
Remove and Dispose of Existing Asphalt	$2,250.00	$0.00	$0.00	$2,250.00
Remove and Dispose of Existing Manhole	$1,500.00	$0.00	$0.00	$1,500.00
8" SDR 35 PVC Sanitary Sewer Pipe	$213,500.00	$128,100.00	$53,115.75	$160,384.25
4" SDR 35 Sanitary Sewer Pipe	$35,475.00	$21,285.00	$8,825.67	$26,649.33
Sanitary Sewer Manhole	$9,000.00	$5,400.00	$2,239.07	$6,760.93
Connect Existing Pipe to New Manhole	$18,000.00	$10,800.00	$4,478.14	$13,521.86
Connect to Existing Sewer Service	$10,750.00	$6,450.00	$2,674.45	$8,075.55
8" x 4" Sanitary Sewer Wye	$6,450.00	$3,870.00	$1,604.67	$4,845.33
Asphalt Surfacing (3")	$1,500.00	$900.00	$373.18	$1,126.82
Gravel Base Course (6")	$500.00	$300.00	$124.39	$375.61
Gravel Surfacing (4")	$73,600.00	$44,160.00	$18,310.63	$55,289.37
Bypass Pumping	$5,000.00	$3,000.00	$1,243.93	$3,756.07
Traffic Control	$7,000.00	$0.00	$0.00	$7,000.00
Siltation and Erosion Control	$3,000.00	$0.00	$0.00	$3,000.00
Topsoil, Seed, Fertilize & Mulch	$11,000.00	$0.00	$0.00	$11,000.00
Capital Costs	$154,100.00	$0.00	$0.00	$154,100.00
Total Construction Cost	$584,530.00	$224,270.00	$92,990.00	$491,535.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$200.00	$2,601.59
Materials	$200.00	$5,000.00
Miscellaneous	$150.00	$3,750.00
Subtotal	$550.00	$11,351.59

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$491,535.00
NPW of O & M Costs	$11,351.59
Total Net Present Worth	$502,886.59
Equivalent Uniform Annual Cost	$38,659.98

4.3.5 Collection System Alternative 5: Phase I - Disconnect Storm Sewer Inlets from Collection System

Collection System Alternative 5 considers Phase I of a two-phase storm sewer project by disconnecting two storm sewer inlets that are currently connected to the sanitary sewer collection system. The two inlets were discovered as being connected to the sanitary sewer system during smoke testing as discussed in Section 3.3.

The surface water runoff areas that will be collected by this alternative have been identified by the Town Board as being poorly drained or where surface water is entering the sanitary sewer system. The proposed alternative will reduce the amount of infiltration entering the sanitary sewer system by reducing the amount of surface water eventually collected by foundation drains or entering cracks or joints in sanitary sewer pipe and manholes. This alternative will also help prevent potentially hazardous health concerns such as sewage flooding basements, vector reproduction in ponding areas and damage to private property.

The storm sewer included in Phase I is one-half block south of Togstad Street from Herrick Avenue three blocks east to where the line will discharge into a small body of water east of Astoria as shown in Figure 4.3.5. This alternative includes approximately 1,265 feet of storm sewer pipe, four storm sewer inlets and associated structures and surface repairs. The cost estimate and EUAC for Collection System Alternative 5 are shown in Table 4.3.5-1 and Table 4.3.5-2.

Figure 4.3.5: Alternative 5

Table 4.3.5-1: Cost Estimate for Collection System Alternative 5

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$12,000.00	$12,000.00
2	Remove Asphalt Surfacing	75 SY	$3.00	$225.00
3	Full Depth Asphalt Saw Cut	60 LF	$5.00	$300.00
4	18" RCP Storm Sewer Pipe	535 LF	$50.00	$26,750.00
5	24" RCP Storm Sewer Pipe	730 LF	$60.00	$43,800.00
6	Storm Sewer Inlet	4 EA	$3,000.00	$12,000.00
7	Storm Sewer Manhole	4 EA	$4,000.00	$16,000.00
8	Asphalt Surfacing for Patch	25 TN	$160.00	$4,000.00
9	Gravel Surfacing	250 TN	$25.00	$6,250.00
10	Cap Existing Sewer Service	2 EA	$700.00	$1,400.00
11	Remove Existing Inlets	2 EA	$1,500.00	$3,000.00
12	Topsoil, Seed, Fertilize & Mulch	5,500 SY	$2.00	$11,000.00
13	Discharge End Treatment	1 LS	$8,000.00	$8,000.00
14	Erosion Control	1 LS	$4,000.00	$4,000.00
15	Traffic Control	1 LS	$6,000.00	$6,000.00
16	Incidental Construction	1 LS	$15,000.00	$15,000.00
			Subtotal	$169,725.00
			Contingencies (10%)	$17,275.00
			Construction Total	$187,000.00
			Design Engineering	$19,500.00
			Permitting	$5,000.00
			Bidding and Contract Documents	$4,000.00
			Construction Engineering	$30,000.00
			Administration and Legal	$5,700.00
			Total Project Cost	$251,200.00

Figure 4.3.5-2: EUAC for Collection System Alternative 5

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$12,000.00	$0.00	$0.00	$12,000.00
Remove Asphalt Surfacing	$225.00	$0.00	$0.00	$225.00
Full Depth Asphalt Saw Cut	$300.00	$0.00	$0.00	$300.00
18" RCP Storm Sewer Pipe	$26,750.00	$16,050.00	$6,655.02	$20,094.98
24" RCP Storm Sewer Pipe	$43,800.00	$26,280.00	$10,896.81	$32,903.19
Storm Sewer Inlet	$12,000.00	$7,200.00	$2,985.43	$9,014.57
Storm Sewer Manhole	$16,000.00	$9,600.00	$3,980.57	$12,019.43
Asphalt Surfacing for Patch	$4,000.00	$2,400.00	$995.14	$3,004.86
Gravel Surfacing	$6,250.00	$3,750.00	$1,554.91	$4,695.09
Cap Existing Sewer Service	$1,400.00	$840.00	$348.30	$1,051.70
Remove Existing Inlets	$3,000.00	$0.00	$0.00	$3,000.00
Topsoil, Seed, Fertilize & Mulch	$11,000.00	$0.00	$0.00	$11,000.00
Discharge End Treatment	$8,000.00	$4,800.00	$1,990.29	$6,009.71
Erosion Control	$4,000.00	$0.00	$0.00	$4,000.00
Traffic Control	$6,000.00	$0.00	$0.00	$6,000.00
Incidental Construction	$15,000.00	$0.00	$0.00	$15,000.00
Capital Costs	$81,475.00	$0.00	$0.00	$81,475.00
Total Construction Cost	$251,200.00	$70,920.00	$29,410.00	$221,790.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$500.00	$6,503.97
Materials	$500.00	$6,503.97
Miscellaneous	$500.00	$6,503.97
Subtotal	$1,500.00	$19,511.90

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$221,790.00
NPW of O & M Costs	$19,511.90
Total Net Present Worth	$241,301.90
Equivalent Uniform Annual Cost	$18,550.36

4.3.6 Collection System Alternative 6: Phase II - Storm Sewer Installation

Collection System Alternative 6 considers Phase II of a two-phase storm sewer project by constructing a storm sewer collection main and inlets one-half block south of Main Street from Herrick Avenue three blocks east to Deuel County Highway 311 as shown in Figure 4.3.6. The surface water runoff areas that will be collected by Phase II have been identified by the Town Board as being poorly drained and saturating the streets and lawns causing increased infiltration into the sanitary sewer system. The proposed alternative will reduce the amount of infiltration entering the sanitary sewer system by reducing the amount of surface water eventually collected by foundation drains or entering cracks or joints in sanitary sewer pipe and manholes. This alternative will also help prevent potentially hazardous health concerns such as sewage flooding basements, vector reproduction in ponding areas and damage to private property.

Phase II of this project would connect to a storm sewer manhole installed during Phase I on Blom Avenue. This alternative includes approximately 1,450 feet of storm sewer pipe, four storm sewer inlets and associated structures and surface repairs. The cost estimate and EUAC for Collection System Alternative 6 are shown in Table 4.3.6-1 and Table 4.3.6-2.

Figure 4.3.6: Alternative 6

Table 4.3.6-1: Cost Estimate for Collection System Alternative 6

Item	Description	Quantity	Unit Price	Total Cost
1	Mobilization	1 LS	$11,000.00	$11,000.00
2	18" RCP Storm Sewer Pipe	1,425 LF	$50.00	$71,250.00
3	Storm Sewer Inlet	4 EA	$3,000.00	$12,000.00
4	Storm Sewer Manhole	4 EA	$4,000.00	$16,000.00
5	Connection to Existing Storm Sewer Manhole	1 EA	$800.00	$800.00
6	Gravel Surfacing	375 TN	$25.00	$9,375.00
7	Topsoil, Seed, Fertilize & Mulch	6,450 SY	$2.00	$12,900.00
8	Erosion Control	1 LS	$3,000.00	$3,000.00
9	Traffic Control	1 LS	$5,000.00	$5,000.00
10	Incidental Construction	1 LS	$14,000.00	$14,000.00
			Subtotal	$155,325.00
			Contingencies (10%)	$15,675.00
			Construction Total	$171,000.00
			Design Engineering	$18,000.00
			Permitting	$3,000.00
			Bidding and Contract Documents	$4,000.00
			Construction Engineering	$30,000.00
			Administration and Legal	$5,200.00
			Total Project Cost	$231,200.00

Figure 4.3.6-2: EUAC for Collection System Alternative 6

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$11,000.00	$0.00	$0.00	$11,000.00
18" RCP Storm Sewer Pipe	$71,250.00	$42,750.00	$17,725.98	$53,524.02
Storm Sewer Inlet	$12,000.00	$7,200.00	$2,985.43	$9,014.57
Storm Sewer Manhole	$16,000.00	$9,600.00	$3,980.57	$12,019.43
Connection to Existing Storm Sewer Manhole	$800.00	$0.00	$0.00	$800.00
Gravel Surfacing	$9,375.00	$5,625.00	$2,332.37	$7,042.63
Topsoil, Seed, Fertilize & Mulch	$12,900.00	$0.00	$0.00	$12,900.00
Erosion Control	$3,000.00	$0.00	$0.00	$3,000.00
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Incidental Construction	$14,000.00	$0.00	$0.00	$14,000.00
Capital Costs	$75,875.00	$0.00	$0.00	$75,875.00
Total Construction Cost	$231,200.00	$65,180.00	$27,020.00	$204,180.00

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Labor	$500.00	$6,503.97
Materials	$500.00	$6,503.97
Miscellaneous	$500.00	$6,503.97
Subtotal	$1,500.00	$19,511.90

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$204,180.00
NPW of O & M Costs	$19,511.90
Total Net Present Worth	$223,691.90
Equivalent Uniform Annual Cost	$17,196.57

SECTION 5.1 SHALL BE DELETED IN ITS ENTIRETY AND REPLACED WITH THE FOLLOWING:

5.1 WASTEWATER COLLECTION SYSTEM

Collection System Alternative 1 (Do Nothing) is not recommended because it would not address any of the identified deficiencies the treatment system appears to be experiencing.

Collection System Alternative 2 (Repair Structural Deficiencies) with a total project cost of $48,560 is recommended. This alternative would repair the identified structural deficiencies reducing infiltration and preventing failures or backups in the future.

Collection System Alternative 3 (Repair Infiltration Deficiencies) with a total project cost of $334,020 is not recommended. This alternative would repair the identified infiltration sources. However, this alternative is not the most cost effective solution to manage the infiltration because it is estimated that it will only reduce Wastewater Treatment Alternative 4 by $1,500. Treatment System Alternative 4 as recommend will have the capability of treating the current inflow and infiltration.

Collection System Alternative 4 (Repair Maintenance Issues) with a total project cost of $584,525 is not recommended. Collection System Alternative 3 and Alternative 4 with total project costs of $918,545 would reduce the amount of wastewater needing treatment. However, Treatment System Alternative 4 with a project cost of $495,000 is a more feasible alternative to handle the amount of inflow and infiltration entering the collection system. At this point, it is cheaper to treat the increased amount of wastewater than it is to try to stop it from entering the collection system.

Collection System Alternative 5 (Phase I Storm Sewer) with a total project cost of $251,200 is recommended. This alternative would remove the storm sewer inlets from the collection system, provide drainage to residential areas reducing the potential for private property damage and reduce the potential for the health dangers associated with sewage-flooded basements and surface water ponding areas providing habitat for mosquitoes and other disease transmitting organisms.

Collection System Alternative 6 (Phase II Storm Sewer) with a total project cost of $231,200 is recommended. This alternative as requested by the Town Board will provide improved drainage to areas identified as poorly drained causing increased infiltration into the sanitary sewer collection system and reducing the potential for health concerns discussed in Alternative 5.

5.3 IMPACT ON USER FEES

Table 5.3-1 shall be deleted in its entirety and replaced with the following

Table 5.3-1: Summary of Costs

Wastewater Collection	
Alternative 2: Repair Structural Deficiencies	$48,560
Alternative 5: Phase I - Disconnect Storm Sewer Inlets	$251,200
Alternative 6: Phase II - Storm Sewer Installation	$231,200
Wastewater Treatment	
Alternative 3: Diversion Channel Rehabilitation	$69,800
Alternative 4: Expand Treatment Facility to the West	$495,000
Total	$1,095,760

Appendix F

Televising Summary Tables

Records of TV Inspections Astoria TV Inspection Evaluation

SEWER LOCATION								Deficiencies					
Street	US MH	DS MH	Length (ft)	Pipe Dia. (in)	Pipe Type	Street Surface	Connec-tions	Sag 1" L, Ft	Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	
Alley N of Borden	22	21	418.5	8	PVC	Dirt	10	6 63.3	3 48.9		1 29.4	5	Leaking saddles, infiltration around pipe and some cracked pipe Stick in service. Infilt around pipe in MH22
Alley N of Borden	23	21	350	8	PVC	Dirt	5	4 54.9	2 98.8		1 17.5	2	Leaking saddles Infilt from each service
Alley N of Borden	24	23	493.9	8	PVC	Dirt	10	2 24.8	1 32.0			5	Leaking saddles, infiltration around pipe
Blom	26	21	185.5	8	PVC	Gravel	0	1 20.2		2 66.3			
Borden	27	26	355.2	8	PVC	Gravel	6	4 66.7				4	Leaking saddles, infiltration around pipe
Borden	28	26	400.3	8	PVC	Gravel		1 11.8	1 8.4		1 8.4	2	1" deformed egg shaped where indicated Service saddles leaking
Borden	29	28	150	8	PVC	Gravel	0						No significant issues
Alley N of Main	11	10	247	8	PVC	Dirt	3	1 163.7		1 12.4		2	Combine 5 1" and 1 2" sags into one - includes hole in pipe, 1 leaking service Hole in pipe at 233.3'
Alley N of Main	12	10	351.3	8	PVC	Dirt	5	3 104.8	1 75.3			2	Cut deposits at 2.2' Water from services
Alley N of Main	13	12	368.4	8	PVC	Dirt	6	1 36.1	2 48.0	1 189.9		5	Pipe broken at two bad services
Alley N of Main	14	13	365.4	8	PVC	Dirt	5	3 22.4				2	
Alley S of Main	CO 2	18	146.4	8	PVC	Dirt	4	2 53.9		1 25.2		2	Replace CO 2
Alley S of Main	CO 3	20	131.3	8	PVC	Dirt	5	1 23.5				4	
Alley S of Main	18	17	471.9	8	PVC	Dirt	12	4 239.2	1 82.6			6	
Alley S of Main	19	17	354.6	8	PVC	Dirt	7	2 115.8	1 20.6	1 84.7		3	Most services gushing
Alley S of Main	20	19	366.1	8	PVC	Dirt	6	3 55.8				5	Cut deposits at MH 20

Records of TV Inspections Astoria TV Inspection Evaluation

SEWER LOCATION								Deficiencies					
Street	US MH	DS MH	Length (ft)	Pipe Dia. (in)	Pipe Type	Street Surface	Connec-tions	Sag 1" L, Ft	Sag 2" L, Ft	Sag 3"< L, Ft	Egg L, Ft	Serv. Def	
Blom	10	8	179.3	8	PVC	Gravel	0			1 179.3		0	A high spot at 22'. Possibly very flat grade. Most of the pipe has 1-3" sag.
Blom	17	10	376.3	8	PVC	Gravel	0	1 201.5	1 56.0	1 19.8		0	1" sag up and down throughout
Blom	21	17	368.8	8	PVC	Gravel	1	1 46.9	3 101.8	2 87.4		1	Concrete in 3' of invert at MH 21
Main	15	End	179.2	8	PVC	Gravel	1					1	Transition to 6" and back to 8"-pipe broken
Norden	7	6	345.8	8	PVC	Gravel	3	12 258.0	3 87.8			2	The whole pipe is sagged up and down. Service at 273.4' structurally bad. Cracked area of pipe at 8.5'. 2 locations of bad deformity-part of sags
Norden	8	7	359.8	8	PVC	Gravel	1	14 327.6		1 32.2		1	The whole pipe is sagged up and down.
Norden	9	8	355.9	8	PVC	Gravel	7		1 8.0	1 9.3		4	Broken pipe a MH 8
Railroad Ave	15	14	158.1	8	PVC	Gravel	1	1 9.6				1	
Hwy 311	1	Pond	260.8	8	PVC	Dirt	0	8 246.4		1 14.4	2 37.3		Sags up and down throughout. 2 deformities at 1"
Hwy 311	2	1	433.4	8	PVC	Dirt	0	11 337.2	3 62.0	2 34.2	2 5.0		Sags up and down throughout.
Hwy 311	3	2	393.5	8	PVC	Dirt	0	9 349.7	3 43.8				Sags up and down throughout.
Hwy 311	4	3	398.4	8	PVC	Dirt	0	5 209.2	5 189.2				long sags throughout Many joints separated-don't appear to leak
Hwy 311	5	4	393.7	8	PVC	Dirt	2	15 355.5	3 38.2			1	Sags up and down throughout.
Hwy 311	6	5	393.9	8	PVC	Dirt	1	10 231.0	8 141.6	1 21.3		1	Sags up and down throughout. Big dent in top of pipe at 388.2'. Crack at 269.8'
			9752.7				101				98	61	

67 Billable

34 Abandoned

= Infiltration deficiencies

MH Inspections

MH	Street Surface	Structural Condition	Infiltration	Pol	# Def	Invert(ft)			Line?	Replace?
1	Dirt	Concrete in good condition Invert is rough and high Weir box structure	Throughout Around N pipe	6	4	South North	9.04 9.00			1
2	Dirt	Cone deteriorating Invert is rough and high	Around both pipes Most joints in manhole	5	5	South North	16.40 16.44			1
3	Dirt	Bottom of cone chipped Invert is rough and high	Around bottom of cone Around both pipes Most joints in manhole	10	6	South North	15.06 15.10			1
4	Dirt	Invert is rough	Ramnek is out - leaking joints Around both pipes Most joints in manhole	8	5	South North	15.20 15.24			1
5	Dirt		Around both pipes Most joints in manhole	5	3	South North	9.10 9.00			1
6	Gravel	Invert is rough and high	Stain on one joint		2	West North	17.80 17.80			1
7	Gravel		Around both pipes Multiple locations	5	3	West East	13.96 17.90			1
8	Gravel	Roots through wall Invert is rough and high	Stains all over Around all pipes Bottom joint leaking	4	7	West South East	9.60 14.30 14.20	Drop		1
9	Gravel	Rings are cracked Poorly shaped invert			2	West East	9.90 10.90	4"		
10	Gravel	Invert is rough	Around all pipes Bottom joint leaking	5	6	West South East North	14.60 14.90 10.90 14.90	 Drop		1
11	Dirt	Ring broken	Around pipe Casting leaking Manhole Bottom	3	4	West				1
12	Gravel	Rings cracked Invert is rough and high	Multiple locations Around both pipes	6	5	West East	13.30 13.30			1
13	Gravel	Rings broken Invert is rough Grout in east pipe	Multiple locations Around both pipes	7	6	West East	10.80 10.90			1
14	Dirt	No drop No invert formed	Bottom joint leaking Bottom of MH leaking Around east pipe	3	5	South East	6.00 8.20			1

MH Inspections

MH	Street Surface	Structural Condition	Infiltration	Pol	# Def	Invert(ft)			Line?	Replace?
15	Gravel	Invert is rough			1	West North	6.10 6.30			
16	Dirt	Could not find								
17	Gravel	Invert high	Bottom of cone Around all pipes	5	6	West South East North	11.90 11.90 11.90 11.80			1
18	Dirt		Bottom of cone Around all pipes	3	3	East West	8.40 8.30			1
19	Gravel	Two rings deteriorated Invert is rough and high	Multiple locations Around all pipes	5	5	West East	12.10 12.20			1
20	Gravel	5 rings deteriorated	1 location at base joint	1	2	West East	10.10 10.20			
21	Gravel	1 ring deteriorated DS invert is high No drops or inverts for high	Multiple locations Around 2 pipes	5	6	NW West South East North	5.00 9.10 11.00 9.40 10.80	4"		1
22	Dirt		Around pipe	1	1	West				
23	Gravel	DS invert is high	Around 1 pipe Cone joint lifting holes	4	4	West East	10.90 10.80			1
24	Dirt	Rings cracked and deter. Crack in floor			2	East	6.30			
25	Dirt	Could not find								
26	Gravel	1 ring broken Invert is poorly formed DS invert is high	Cone joint	1	4	East West North	10.20 11.30 11.20			1
27	Gravel	1 ring broken	Cone joint Around the pipe	2	3	East	10.30			1
28	Gravel	No formed invert			1	East West	8.10 8.40			
29	Dirt	No formed invert				East West	 7.60	4"		
				94						20

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Brandon

Project Title:	Lift Station to Sioux Falls
Funding Requested:	$2,598,400
Total Project Cost:	$2,598,400
Project Description:	The existing WWTP was built in 1982 when the population in Brandon was 2,589. Brandon's population increased significantly after that, and the city chose to pump its partially treated wastewater to the Sioux Falls water reclamation facility rather than upgrade its own wastewater treatment facilities. This project will construct a new lift station to pump raw wastewater to the Sioux Falls water reclamation facility. The project includes the construction of a wet/dry well lift station, pump building, standby generator, and SCADA system.
Alternatives Evaluated:	"No Action Alternative" does not address the demand for additional hydraulic capacity and treatment. "Build New Treatment System Alternative" will construct a treatment plant at a new site south of Brandon on approximately 40 acres. The WWTP system includes continuous treated discharge, two aeration cells followed by three aeration rock beds, and possible UV disinfection. "Add Aerated Rock Beds Alternative" will add aeration to cell three at the current WWTP and construct three aerated rock beds followed by a possible UV disinfection system. This alternative would have continuous discharge and eliminate the need to pump to Sioux Falls. This alternative is not recommended. It is anticipated that expansion at the current site will create negative feedback with the adjacent residential areas. "Rehabilitate the Existing Site Alternative" proposes that the existing WWTP site be modified to add aeration to cells one and two and convert cell three to aerated rock bed. This system would have continuous discharge and eliminate the need to pump to Sioux Falls and is a viable alternative if the City is unable to purchase land for a new site or expand the current footprint.

"Aeration Expansion with Sioux Falls Pumping Alternative" would divide cell one into two aeration cells and pump water to Sioux Falls to handle the hydraulic loading. This alternative can't provide enough treatment to get the partial treatment credit from the City of Sioux Falls or guarantee the City will always be able to meet the discharge limits. Costs to pump to Sioux Falls include a system development charge and charge per thousand gallons received.

"Pumping Only to Sioux Falls Alternative" will construct a new lift station for pumping raw sewage to the Sioux Falls wastewater treatment facility. The project includes the construction of a wet/dry well lift station, pump building, standby generator and tank, and SCADA system. This is the recommended alternative.

"Mechanical Treatment Alternative" proposes that a mechanical plant be built on a new site. This alternative is not recommended due to the large capital cost and high O&M.

Implementation Schedule: The city of Brandon plans to advertise bids for this project in February of 2017 with a completion date of May 2017.

Service Population: 9,779

Current Domestic Rate: $51.50 per 5,000 gallons usage

Interest Rate: 3.0% Term: 20 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Brandon would have to enact a surcharge of approximately $4.95. When added to current rate of $51.50/5,000 gallons residents would be paying $56.45/5,000 gallons. Brandon also has a CW-04 loan which is being paid from the General Fund although wastewater revenue was pledged for repayment of the loan. If this wastewater debt is paid out the sewer fund it would require an additional $1.10 to the rate.

25% Funding Subsidy:	$649,600 subsidy with a loan of $1,948,800.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $1,948,800 Brandon would have to enact a surcharge of approximately $3.70 thereby paying a rate of $55.20/5,000 gallons.

50% Funding Subsidy:	$1,299,200 subsidy with a loan of $1,299,200
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $1,299,200 Brandon would have to enact a surcharge of approximately $2.50 thereby paying a rate of $54.00/5,000 gallons.

75% Funding Subsidy:	$1,948,800 subsidy with a loan of $649,600.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $649,600 Brandon would have to enact a surcharge of approximately $1.25 thereby paying a rate of $52.25/5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: CLAIRE PESCHONG

FINANCIAL REVIEW COMPLETED BY: DAVE RUHNKE

SECOG
SOUTH EASTERN COUNCIL OF GOVERNMENTS
SOUTH DAKOTA

RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

December 30, 2015

Mike Perkovich
SD-DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Dear Mr. Perkovich:

Enclosed, please find the Clean Water State Revolving Loan Funding Application for the City of Brandon's Lift Station Project. Included with the general application are the following appendices:

Appendix A – Certification of Point Source Needs Categories, Cost and Effectiveness Certification Form, Certification Regarding Debarment, Suspension and Other Responsibility Matters
Appendix B – Signed Application Resolution
Appendix C – User Rate Ordinance
Appendix D – Amortization of Existing Clean Water Debt
Appendix E – 2014 Financial Report
Appendix F – 2015 Budget
Appendix G – 2016 Budget
Appendix H – Documentation of an Active Registration in the SAM Database
Appendix I – Public Hearing Notice, Sign-in Sheets, & Unofficial Minutes (Official minutes will be sent after they are approved during the January council meeting)

Sincerely,

Kristen Benidt
GIS Technician/Planner

Enclosures

Cc: City of Brandon
Gaard Rops, Stockwell Engineers
East Dakota Water Development District

500 N. Western Ave. Suite 100 • Sioux Falls, SD 57104
Phone: 605.367.5390 • Fax: 605.367.5394
Website: www.secog.org • E-mail: gis@secog.org
Lynne Keller Forbes, Executive Director

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Brandon	Proposed Funding Package
Address: PO Box 95 Brandon, SD 57005-0095	Requested Funding $2,598,400 Local Cash _____
Subapplicant:	Other: _____ _____ Other: _____ _____
DUNS Number: 556300200	Other: _____ _____ TOTAL $2,598,400

Project Title: Lift Station

Description:

The City of Brandon plans to construct a new pump station that is to be utilized for pumping raw sewage to the City of Sioux Falls WWTF. The project will utilize the existing 12" force main until 90% capacity is met. At that point, design would begin on an upsized force main to parallel the existing 12" force main. This would allow for redundancy. The proposed lift station will be expandable to accommodate additional pump capacity to meet future growth of the City of Brandon.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Larry Beesley, Mayor Name & Title of Authorized Signatory (Typed)	Larry D. Beesley Signature	12/24/15 Date

Professional Consultants

Application Prepared By: South Eastern Council of Governments

Contact Person: Kristen Benidt

Mailing Address: 500 N Western Ave, Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605)367-5390 Fax: (605)367-5394

Email address: gis@secog.org

Consulting Engineering Firm: Stockwell Engineers

Contact Person: Gaard Rops

Mailing Address: 600 N. Main Ave, Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605)338-6668 Fax:

Email address: grops@stockwellengineers.com

Legal Counsel's Firm: Boyce Law Firm, LLP

Contact Person: Lisa Marso

Mailing Address: PO Box 5015

City, State, and Zip: Sioux Falls, SD 57117

Telephone Number: (605)336-2424 Fax: (605)334-0618

Email address: lkmarso@boycelaw.com

Bond Counsel's Firm: Meierhenry, Sargent LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Ave

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 336-3075 Fax: (605) 336-2593

Email address: Todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$42,000					$42,000
D. Other SECOG	$3,000					$3,000
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$160,900					$160,900
B. Project Inspection Fees	$174,900					$174,900
C. Other						
4. Construction & Improvements	$2,111,600					$2,111,600
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$2,492,400					$2,492,400
10. Contingencies	$106,000					$106,000
11. Total (Lines 9 and 10)	$2,598,400					$2,598,400
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CWSRF/CWFCP		$2,598,400	March 2016
Other (Explain)			
Other (Explain)			
Total		$2,598,400	$2,598,400

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 9,779 2010 8,785 2000 5,693

Top three employers within 30 miles	Number of Employees	Type of Business
Sanford Health	8600	Health Care
Avera Health	6734	Health Care
John Morrell & Co.	3300	Meat Processing

Repayment Information

Interest rate you are applying for: 3% Term: 20

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2011					
Purpose	Bethany Meadows					
Security Pledged	Wastewater Revenue					
Amount	$344,925					
Maturity Date (mmm/yyyy)	01/2021					
Debt Holder	BWNR					
Debt Coverage Requirement	110%					
Avg. Annual Required Payment	$38,616					
Outstanding Balance	$190,707					

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$1,079,794	$1,869,062	$1,815,000	$2,018,000	$2,018,000	$2,018,000
Surcharge Fees						
Other (Explain)	$15,282	$18,651	$1,000	$2,300	$2,300	$2,300
Operating Expenses						
Personal Services	($159,312)	($154,936)	($226,150)	($231,738)	($238,690)	($245,851)
Chemical, Material & Supplies	($108,179)	($130,346)	($144,678)	($184,625)	($190,164)	($201,574)
Electric & Other Utilities	($70,563)	($76,660)	($72,000)	($82,000)	($84,460)	($86,994)
Other (Explain)	($375,857)	($696,490)	($800,000)	($1,142,000)	($1,176,260)	($1,211,548)
Operating Net Cash	$381,165	$829,281	$573,172	$379,937	$330,726	$274,333
Nonoperating Cash Flow						
Interest Revenue	$180	$410	$1,140	$1,100	$1,100	$1,100
Transfers In (Explain)				$38,615	$38,615	$38,615
Fixed Asset Purchases	($52,047)	($426,901)	($802,000)	($245,000)	($245,000)	($245,000)
Transfers Out (Explain)	($160,349)	($1,102)	($1,102)	($36,350)	($36,351)	($37,442)
Principal Debt Payments				($31,643)	($31,643)	($128,011)
Interest Debt Payments				($6,971)	($6,971)	($83,846)
Other (Explain)		$55,685	0	0	0	0
Nonoperating Net Cash	($212,216)	($371,908)	($801,962)	($280,250)	($280,250)	($454,583)
Increase (Decrease) Cash	$168,949	$457,373	($228,790)	$99,687	$50,476	($180,250)
Beginning Cash Balance	$699,027	$867,976	$1,325,349	$1,096,559	$1,196,246	$1,246,722
Ending Cash Balance	$867,976	$1,325,349	$1,096,559	$1,196,246	$1,246,722	$1,066,472
Restricted Balance						
Unrestricted Balance						

Additional Comments (Explanations)

Operating Revenue (Other)-Misc & Credit Card Fees
Operating Expenses (Other)-SF Discharge/SDC
Nonoperating Cash Flow (Transfers In)-Bethany Meadows Wastewater Revenue
Nonoperating Cash Flow (Transfers Out)-Portion of City Staff Engineer Cost
Nonoperating Cash Flow (Other)-Insurance Proceeds
2017 & 2018 assume no increase in revenue and a 3% increase in expenses

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [x] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$51.50		2,727	3818
Business	$51.50		506	9088
Other:				
Other:				

Are fees based on usage or flat rate? usage

When is proposed fee scheduled to take effect? N/A

When did the current fee take effect? 01/2015

What was the fee prior to the current rate? $50

Storm Sewer Projects Only: Does applicant have a separate storm water fee? No

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Brandon Valley School Dist	Education	4.5%
Spartan Motors USA	Fire Protection Equip Supplier	4.4%

Appendix A

Certification of Point Source Needs Categories, Cost and Effectiveness Certification Form, Certification Regarding Debarment, Suspension and Other Responsibility Matters

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	_____
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	_____
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	_____
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	_____

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	$2,598,400
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$2,598,400

Larry Beesley, Mayor

Name & Title of Authorized Representative

Larry D. Beesley

Signature of Authorized Representative

Date

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	City of Brandon

Project Name:	Lift Station

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: Larry D. Beesley

Printed Name: Larry Beesley

Title: Mayor

Date: 12/24/15

Project Engineer

Signature: Gaard Rops

Printed Name: Gaard Rops

License #: 8738

Date: 12/23/15

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Larry Beesley, Mayor

Name & Title of Authorized Representative

Larry D. Beesley

Signature of Authorized Representative

12/24/15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION #12-15

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Brandon, South Dakota, (the"City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Sioux Falls Lift Station (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared, and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the Brandon City Council as follows:

1. The City hereby approves the submission of an Application for financial assistance in the amount not to exceed $2,600,000.00 to the South Dakota Board of Water and Natural Resources for the Project.

2. The City Administrator is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The City Administrator is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Dated this 16th day of November, 2015.

Larry D. Beesley
Larry D. Beesley
Mayor

ATTEST:

Dennis E. Olson
Dennis E. Olson
Municipal Finance Officer

(SEAL)

RESOLUTION #17-14

WHEREAS, Ordinance #14-5-7 states that the charge for each billing period shall be established and may be amended by resolution of the City Council.

THEREFORE LET IT BE RESOLVED, that the following rates are hereby established and become effective for residential and commercial users of the Brandon Wastewater System beginning with the January, 2015 billing.

> A minimum base monthly residential charge of $10.30 and an additional charge of $8.24 per each thousand gallons or fraction thereof.

BE IT FURTHER RESOLVED, that the monthly usage for billing shall be determined by averaging the usage from the months of November and December of the preceding year. This average shall be used to compute the monthly sewer bill until a new average is determined the following year.

BE IT FURTHER RESOLVED, that rates need to be considered on a regular basis to keep increases to a minimum yet providing enough revenue to insure that the Sewer Fund is operating in the black.

Dated this 17th day of November, 2014.

Larry D. Beesley
Larry D. Beesley
Mayor

ATTEST:

Dennis E Olson
Dennis E. Olson
Municipal Finance Officer

(SEAL)

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$344,925.00		01-15-2021					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Brandon #4 Clean Water #4
Total Advances $383,250
Principal Forgiveness $38,325
Bethany Meadows

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

SDX

Disbursement Date:
Interest Rate: 2.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	04-15-2011	9,653.70	1,940.20	7,713.50	337,211.50
2	07-15-2011	9,653.70	1,896.81	7,756.89	329,454.61
3	10-15-2011	9,653.70	1,853.18	7,800.52	321,654.09
2011 TOTALS:		**28,961.10**	**5,690.19**	**23,270.91**	
4	01-15-2012	9,653.70	1,809.31	7,844.39	313,809.70
5	04-15-2012	9,653.70	1,765.18	7,888.52	305,921.18
6	07-15-2012	9,653.70	1,720.81	7,932.89	297,988.29
7	10-15-2012	9,653.70	1,676.18	7,977.52	290,010.77
2012 TOTALS:		**38,614.80**	**6,971.48**	**31,643.32**	
8	01-15-2013	9,653.70	1,631.31	8,022.39	281,988.38
9	04-15-2013	9,653.70	1,586.18	8,067.52	273,920.86
10	07-15-2013	9,653.70	1,540.81	8,112.89	265,807.97
11	10-15-2013	9,653.70	1,495.17	8,158.53	257,649.44
2013 TOTALS:		**38,614.80**	**6,253.47**	**32,361.33**	
12	01-15-2014	9,653.70	1,449.28	8,204.42	249,445.02
13	04-15-2014	9,653.70	1,403.13	8,250.57	241,194.45
14	07-15-2014	9,653.70	1,356.71	8,296.99	232,897.46
15	10-15-2014	9,653.70	1,310.05	8,343.65	224,553.81
2014 TOTALS:		**38,614.80**	**5,519.17**	**33,095.63**	
16	01-15-2015	9,653.70	1,263.12	8,390.58	216,163.23
17	04-15-2015	9,653.70	1,215.92	8,437.78	207,725.45
18	07-15-2015	9,653.70	1,168.45	8,485.25	199,240.20
19	10-15-2015	9,653.70	1,120.73	8,532.97	190,707.23
2015 TOTALS:		**38,614.80**	**4,768.22**	**33,846.58**	
20	01-15-2016	9,653.70	1,072.73	8,580.97	182,126.26
21	04-15-2016	9,653.70	1,024.46	8,629.24	173,497.02
22	07-15-2016	9,653.70	975.92	8,677.78	164,819.24
23	10-15-2016	9,653.70	927.11	8,726.59	156,092.65
2016 TOTALS:		**38,614.80**	**4,000.22**	**34,614.58**	
24	01-15-2017	9,653.70	878.02	8,775.68	147,316.97
25	04-15-2017	9,653.70	828.65	8,825.05	138,491.92
26	07-15-2017	9,653.70	779.02	8,874.68	129,617.24
27	10-15-2017	9,653.70	729.10	8,924.60	120,692.64
2017 TOTALS:		**38,614.80**	**3,214.79**	**35,400.01**	
28	01-15-2018	9,653.70	678.89	8,974.81	111,717.83
29	04-15-2018	9,653.70	628.42	9,025.28	102,692.55
30	07-15-2018	9,653.70	577.64	9,076.06	93,616.49
31	10-15-2018	9,653.70	526.60	9,127.10	84,489.39
2018 TOTALS:		**38,614.80**	**2,411.55**	**36,203.25**	
32	01-15-2019	9,653.70	475.25	9,178.45	75,310.94
33	04-15-2019	9,653.70	423.62	9,230.08	66,080.86
34	07-15-2019	9,653.70	371.71	9,281.99	56,798.87
35	10-15-2019	9,653.70	319.49	9,334.21	47,464.66
2019 TOTALS:		**38,614.80**	**1,590.07**	**37,024.73**	
36	01-15-2020	9,653.70	266.99	9,386.71	38,077.95
37	04-15-2020	9,653.70	214.19	9,439.51	28,638.44
38	07-15-2020	9,653.70	161.09	9,492.61	19,145.83

** INTEREST PAID also includes Admin Surcharge amounts

AMORTIZATION SCHEDULE
(Continued)

39	10-15-2020	9,653.70	107.69	9,546.01	9,599.82
2020 TOTALS:		**38,614.80**	**749.96**	**37,864.84**	
40	01-15-2021	9,653.70	53.88	9,599.82	0.00
2021 TOTALS:		**9,653.70**	**53.88**	**9,599.82**	
TOTALS:		**386,148.00**	**41,223.00**	**344,925.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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Clean Water
Rev Borrower Bond
Pd by 101 - debt service fund
- must be pd by 101 due to new to04 debt

CITY OF BRANDON
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QUAM & BERGLIN, P.C.

CERTIFIED PUBLIC ACCOUNTANTS
110 WEST MAIN – P.O. BOX 426
ELK POINT, SOUTH DAKOTA 57025
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(605) 356-3374

INDEPENDENT AUDITOR'S REPORT

City Council
City of Brandon
Minnehaha County, South Dakota

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business type activities, each major fund and the aggregate remaining fund information of the City of Brandon, South Dakota, as of December 31, 2014 and for the year then ended, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the Table of Contents.

Management's Responsibility for the Financial Statements

The City's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business type activities, each major fund and the aggregate remaining fund information of the City of Brandon as of December 31, 2014 and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and Budgetary Comparison Schedules listed in the Table of Contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City's basic financial statements. The Combining Nonmajor Fund Financial Statements listed in the Table of Contents are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated July 28, 2015, on our consideration of the City of Brandon's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's internal control over financial reporting and compliance.

Quam & Berglin, P.C.

Quam and Berglin, P.C.
Certified Public Accountants

July 28, 2015

City of Brandon
305 Main Avenue
PO Box 95
Brandon, SD 57005
(605) 582-6515

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section of the City of Brandon's annual financial report presents our discussion and analysis of the City of Brandon financial performance during the fiscal year ending December 31, 2014. Please read it in conjunction with the City of Brandon financial statements, which follow this section.

FINANCIAL HIGHLIGHTS

During the year, the City of Brandon revenues generated from charges for services, taxes and other revenues of the governmental programs were $3,045,448 more than the $8,400,373 governmental and business-type program expenditures.

OVERVIEW OF THE FINANCIAL STATEMENTS

This annual report consists of three parts – management's discussion and analysis (this section), the basic financial statements, including related notes, and required supplementary information. The basic financial statements include two kinds of statements that present different views of the Municipality:

1. The first two statements are government-wide financial statements that provide both long-term and short-term information about the overall financial status of the City of Brandon.

2. The remaining statements are fund financial statements that focus on individual parts of Municipal government, reporting the Municipality's operations in more detail than the government-wide statements.

    A. The governmental fund statements tell how general government services like public safety were financed in the short-term as well as what remains for future spending.

    B. Proprietary fund statements offer short- and long-term financial information about the activities that the Municipality operates like businesses. The City has four proprietary funds – the Water Fund, the Sewer Fund, the Golf Course Fund and the Electrical Fund.

The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data. The statements are followed by a section of required supplementary information that further explains and supports the information in the financial statements. In addition to the required elements, we have included a section with combining statements that provide details about our non-major governmental funds, each of which are added together and presented in a single column in the basic financial statements.

Figure A-2 summarizes the major features of the City of Brandon's financial statements, including the portion of the City government they cover and the types of information they contain. The remainder of the overview section of the management's discussion and analysis explains the structure and contents of each of the statements.

Figure A-2

Major Features of the City of Brandon's Government-wide and Fund Financial Statements			
	Government-wide Statements	Fund Statements	
		Governmental Funds	Proprietary Funds
Scope	Entire City government (except fiduciary funds and the fiduciary component units)	The activities of the City that is not proprietary or fiduciary, such as finance office, police, fire and parks.	Activities the City operates similar to private businesses are the water, sewer and electric systems and the golf course.
Required Financial Statements	*Statement of Net Position *Statement of Activities	*Balance Sheet *Statement of Revenues, Expenditures and Changes in Fund Balances	*Balance Sheet *Statement of Revenues, Expenses and Changes in Net Position *Statement of Cash Flows
Accounting Basis and Measurement Focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus	Accrual accounting and economic resources focus
Type of Asset/Liability Information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter no capital assets included	All assets and liabilities, both financial and capital, and short-term and long-term
Type of Inflow/Outflow Information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year, expenditures when goods or services have been received and payment is due during the year or soon thereafter	All revenues and expenses during year, regardless of when cash is received or paid

GOVERNMENT-WIDE STATEMENTS

The government-wide statements report information about the City as a whole using accounting methods similar to those used by private-sector companies. The statement of net position includes all of the government's assets and liabilities. All of the current year's revenues and expenses are accounted for in the statement of activities regardless of when cash is received or paid.

The two government-wide statements report the City of Brandon's net position and how they have changed. Net position – the difference between the City of Brandon's assets and liabilities – is one way to measure the City of Brandon's financial health or position.

1. Increases or decreases in the City of Brandon's net position are an indicator of whether its financial health is improving or deteriorating, respectively.

2. To assess the overall health of the City you need to consider additional non-financial factors such as changes in the City of Brandon's property tax base and changes in the sales tax revenue base.

The government-wide financial statements of the City are reported in two categories:

1. Governmental Activities -- This category includes the most of the City of Brandon's basic services, such as police, fire, public works, parks department and general administration. Property taxes, sales taxes, charges for services, state and federal grants and interest earnings finance most of these activities.

2. Business-type Activities -- The City charges a fee to customers to help cover the costs of certain services it provides. The City of Brandon's water, sewer, golf course and electrical accounts are included here.

FUND FINANCIAL STATEMENTS

The fund financial statements provide more detailed information about the City of Brandon's most significant funds – not the City as a whole. Funds are accounting devices that the City uses to keep track of specific sources of funding and spending for particular purposes.

1. State Law requires some of the funds.

2. The City Council establishes other funds to control and manage money for particular purposes or to show that it is properly using certain taxes and grants.

The City has two kinds of funds:

1. Governmental Funds – Most of the City of Brandon's basic services are included in the governmental funds, which focus on (1) how cash and other financial assets that can readily converted to cash flow in and out and (2) the balances left at the year-end that are available for spending. Consequently, the governmental funds statements provide a detailed short-term view that helps you determine whether there are more or fewer financial resources that can be spent in the near future to finance the City of Brandon's programs. Because this information does not encompass the additional long-term focus of the government-wide statements, we provide additional information at the bottom of the governmental funds statements, or on the subsequent page, that explains the relationship (or differences) between them.

2. Proprietary Funds – Services for which the City charges customers a fee are generally reported in proprietary funds. Proprietary funds, like the government-wide statements, provide both short- and long-term financial information. The City of Brandon's enterprise funds (one type of proprietary fund) are the same as its business-type activities, but provide more detail and additional information, such as cash flows.

FINANCIAL ANALYSIS OF THE CITY AS A WHOLE

	Governmental Activities		Business-Type Activities		Totals	
	2013	2014	2013	2014	2013	2014
Current and Other Assets	$ 3,110,934	$ 4,680,753	$ 4,455,224	$ 5,231,446	$ 7,566,158	$ 9,912,199
Capital Assets	20,138,191	19,589,308	17,465,199	17,765,993	37,603,390	37,355,301
Total Assets	23,249,125	24,270,061	21,920,423	22,997,439	45,169,548	47,267,500
Long-Term Debt Outstanding	5,480,189	4,942,323	1,681,795	1,305,420	7,161,984	6,247,743
Other Liabilities	180,028	132,869	219,534	233,438	399,563	366,307
Total Liabilities	5,660,217	5,075,192	1,901,329	1,538,858	7,561,547	6,614,050
Net Positon:						
Net Investment in Capital Assets	14,801,549	14,797,215	15,903,802	16,568,649	30,705,351	31,365,864
Restricted	1,706,444	2,196,851			1,706,444	2,196,851
Unrestricted	1,080,915	2,200,803	4,115,292	4,889,932	5,196,207	7,090,735
Total Net Position	$ 17,588,908	$ 19,194,869	$ 20,019,094	$ 21,458,581	$ 37,608,002	$ 40,653,450
Beginning Net Position	$ 15,140,203	$ 17,588,908	$ 19,179,309	$ 20,019,094	$ 34,319,512	$ 37,608,002
Increase (Decrease) in Net Positon	$ 2,448,705	$ 1,605,961	$ 839,785	$ 1,439,487	$ 3,288,490	$ 3,045,448
Percentage of Increase (Decrease) in Net Position	16.17%	9.13%	4.38%	7.19%	9.58%	8.10%

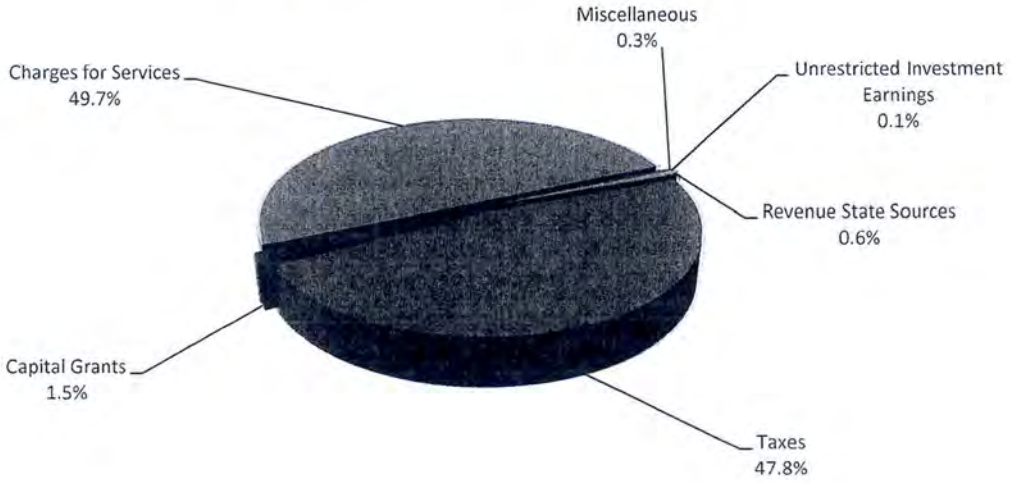
This section explains the differences between the current and prior years' assets, liabilities, and changes in net position.

The Statement of Net position reports all financial and capital resources. The statement presents the assets and liabilities in order of relative liquidity. The liabilities with average maturities greater than one year are reported in two components – the amount due within one year and the amount due in more than one year. The long-term liabilities of the City, consisting of compensated absences payable, sales tax revenue bonds payable, water and revenue bonds payable, and special assessment bonds with governmental commitment have been reported in this manner on the Statement of Net position. The difference between the City of Brandon's assets and liabilities is its net position.

CHANGES IN NET POSITION

The City of Brandon's total revenues (excluding special items) totaled $11,381,440. (See Table A-2.) Most of the City of Brandon's revenue comes from charges for services and taxes; with 49.7 cents of every dollar raised coming from charges for services and 47.8 cents of every dollar raised comes from some type of tax. (See Figure A-3). Another 2.5 cents come from operating and capital grants and contributions and the balance comes from unrestricted investment earnings, state shared revenue and miscellaneous.

FIGURE A-3 SOURCE OF REVENUES



The City of Brandon expenses cover a range of services with 11.5% from water services and 15.8% from sewer services, 13.2% from the golf course. The cost of Public Safety was 18.1% and Public Works was 16.4%. Culture and Recreation costs were 8.7%. General Government costs were 9.0% and debt service was 1.8%. Conservation and Development costs were 4.0% and the remaining balance of 1.5% was from the electric services. (See Figure A-4)

FIGURE A-4 SOURCE OF EXPENSES

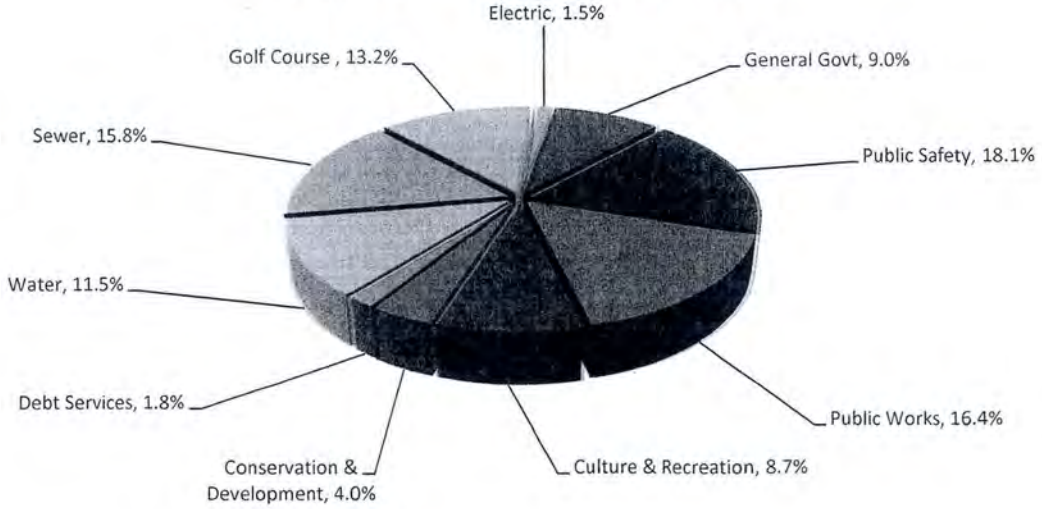


TABLE A-2
CITY OF BRANDON
CHANGES IN NET POSITION

	Governmental Activities		Business-Type Activities		Total	
	2013	2014	2013	2014	2013	2014
REVENUE:						
Program Revenues:						
Charges for Services	$ 772,100	$ 808,826	$ 3,978,597	$ 4,847,658	$ 4,750,697	$ 5,656,48
Operating Grants and Contributions	96,193	121,997			96,193	121,99
Capital Grants and Contributions	949,381	44,720				44,720
General Revenues:						
Taxes	5,025,263	5,435,183			5,025,263	5,435,18
Revenue State Sources	56,632	72,710			56,632	72,71
Unrestricted Investment Earnings	4,829	9,618	2,429	1,802	7,258	11,420
Miscellaneous	15,017	18,686	17,361	20,241	32,378	38,927
TOTAL REVENUES	6,919,415	6,511,740	3,998,387	4,869,701	10,917,802	11,381,44
EXPENSES:						
General Government	721,305	754,115			721,305	754,11
Public Safety	1,470,168	1,522,322			1,470,168	1,522,32
Public Works	1,365,628	1,380,673			1,365,628	1,380,673
Health & Welfare	4,097	10,817			4,097	10,817
Culture and Recreation	629,017	720,555			629,017	720,55
Conservation & Development	95,684	339,120			95,684	339,12
Debt Services	217,795	148,229			217,795	148,229
Water Services			935,373	967,632	935,373	967,632
Sewer Services			918,485	1,322,975	918,485	1,322,97
Golf Course Services			1,163,974	1,107,211	1,163,974	1,107,21
Electric			76,448	126,724	76,448	126,724
TOTAL EXPENSES	4,503,694	4,875,831	3,094,280	3,524,542	7,597,974	8,400,373
Excess (deficiency) Before Special Items and Transfers	2,415,721	1,635,909	904,107	1,345,159	3,319,828	2,981,068
(Loss) Gain on Disposition of Assets	(22,373)	(1,776)	(8,965)	10,471	(31,338)	8,695
Special Item - Insurance Proceeds				55,685		55,685
Transfers	55,357	(28,172)	(55,357)	28,172		
Change in Net Postion	2,448,705	1,605,961	839,785	1,439,487	3,288,490	3,045,448
Beginning Net Position	15,140,203	17,588,908	19,179,309	20,019,094	34,319,512	37,608,002
NET POSITON-ENDING	$ 17,588,908	$ 19,194,869	$ 20,019,094	$ 21,458,581	$ 37,608,002	$ 40,653,450

FINANCIAL ANALYSIS OF THE CITY OF BRANDON FUNDS

The financial analysis of the City of Brandon funds mirror those highlighted in the analysis of governmental and business-type activities presented above. The City maintains thirteen governmental funds – General Fund; Street Maintenance Fund; 3rd Cent Sales Tax; 2006 TIF #2(BID) Special Revenue Fund; Brandon Revolving Loan Fund; TIF#1 Debt Service; S.A Park St; S.A Chestnut Blvd; S.A Chestnut Middle Blvd; S.A. Express Ave/French Cr Lift; TIF #2 Convention Center Debt Service; S.A Country Club Drainage; TIF Hemlock Blvd Debt Service Fund. The City has four business type funds - Water; Sewer; Golf Course and Electrical.

GENERAL FUND BUDGETARY HIGHLIGHTS

Over the course of the year, the City Council revised the City budget. This amendment was for Supplemental appropriations and contingency transfers approved for unanticipated, yet necessary, expenses to provide for items necessary for health and welfare of its citizens.

CAPITAL ASSET ADMINISTRATION

By the end of 2014, the City had $37,355,301 in a broad range of capital assets, including, land, buildings, and various machinery and equipment. (See Table A-3.) This amount represents a net decrease (including additions and deductions) of $248,089 at a 1% decrease over the last year.

Table A-3
Capital Assets
(Net of depreciation)

	Governmental Activities		Business-Type Activities		Total Dollar Change	Total % Change
	2013	2014	2013	2014	2013-2014	2013-2014
Land	$ 1,602,615	$ 1,609,797	$ 1,719,941	$ 1,719,941	$ 7,182	0.22%
Buildings	3,377,021	3,281,358	2,659,570	2,564,761	(190,471)	-3%
Improv Other Than Building	14,250,053	13,673,352	12,295,235	12,569,995	(301,940)	-1%
Machinery & Equipment	893,073	906,951	757,866	732,352	(11,636)	-1%
Construction in Progress	15,429	117,848	32,587	178,943	248,776	84%
Total Capital Assets (net)	$ 20,138,191	$ 19,589,308	$ 17,465,199	$ 17,765,993	$ (248,089)	-1%

Below are some projects and purchases that were made in 2014:

New equipment was purchased which included: two police Ford Explorers, a 1988 Ice Resurfacer, two Ford F150 pickups, 2014 Honda ATV, a 5065E mower, a new siren located at 401 N Sioux Blvd, 2 Aerators for the sewer department, 2 scoreboards for the Soccer Fields, Pioneer Park Playground equipment and 3 snow plows.

There were some construction projects going on in Brandon in 2014: Micro Seal project was done for a total cost of 112,352. Another phase on Custer Parkway was done to replace water/sewer/curb/gutter and street for a total of 678,525. This is a continual project and is done in phases each year. A shelter for Sunrise Park was started but not quite completed in 2014. The cost at the end of the year totaled 37,684 and it should be finalized in 2015.

LONG-TERM DEBT

At the end of the year the City has $6,247,744 in Sales Tax Revenue Bonds, Water Revenue Bonds and Sewer revenue Bonds and other long term obligations. This is a decrease of over 13% from the previous year as shown on Table A-4 below.

Table A-4
Outstanding Debt and Obligations

	Governmental Activities		Business-Type Activities		Total Dollar Change	Total % Change
	2013	2014	2013	2014	2013-2014	2013-2014
Compensated Absences	$ 143,547	$ 150,231	$ 120,398	$ 108,077	$ (5,638)	-2%
Special Assessment Bonds	757,649	557,381			(200,268)	-26%
Sales Tax Revenue bonds	2,718,485	2,524,123			(194,362)	-7%
State Revolving Funds	257,649	224,554			(33,095)	-13%
Tax Increment Financing Bonds	1,602,859	1,486,036			(116,823)	-7%
Water Revenue bonds			547,440	319,434	(228,006)	-42%
Golf Course Revenue Certificates			981,011	877,910	(103,101)	-11%
Notes Payable			32,946		(32,946)	-100%
Total Outstanding Debt & Obligations	$ 5,480,189	$ 4,942,324	$ 1,681,795	$ 1,305,420	$ (914,240)	-13%

The City of Brandon had a significant decrease in long-term debt, which was due to retiring over 914,000 dollars in debt and making no new additional debt in 2014.

CERTIFICATES OF PARTICIPATION

$1,900,000 - **2001 Golf Course Certificates of Participation** issued to re-fund the addition of nine holes at the Brandon Municipal Golf Course and the construction of a clubhouse facility. Payment is over 20 years with principal payments starting at $58,071 in 2002 to $144,109 in 2021. The net interest cost is 2.05%. Payment will come from revenue from the Golf Course and are due June 1 and December 1 of each year and are taken automatically by the First National Bank Trust Department.

Principal balance, as of 12-31-14..... $877,910

REVENUE BONDS

$1,877,375 - **2000 (SRF) Water Treatment Plant Loan** to construct a water treatment plant. Payments will be due quarterly over a fifteen year period at a 4.75% interest rate. Payments are $175,708 per year. Bonds are being retired with revenues of the Water Enterprise Fund and are taken automatically by the First National Bank Trust Department.

Principal balance, as of 12-31-14.....$ 43,411

$560,000.00 - **2005 Fire Hall Project** (Rural Development) to construct a new fire hall. Half is financed with Rural Development the other from the First National Bank. Payment is over thirty years with principal payments beginning at $9,576 and interest payments beginning at $23,800. The net interest cost is 4.25%. Payment will come from collections of sales tax revenue in the General Fund and are due October 12th of each year. Funds are taken automatically from the non interest savings account.

Principal balance, as of 12-31-14.....$ 456,972

$560,000 - **2005 Fire Hall Project** (First National Bank) to construct a new fire hall. Half is financed with Rural Development the other from the First National Bank. Payment is over thirty years with principal payments starting at $4,118 in 2006 to $16,697 in 2035. The net interest cost is 4.41%. Payment will come from collections of sales tax revenue in the General Fund and are due March 1st and September 1st of each year. Funds are taken automatically by the First National Bank Trust Department from the non interest savings account.

Principal balance, as of 12-31-14.....$ 464,287

$2,500,000 – **2007 Sales Tax Revenue Bond** to construct the Holly Blvd Project. Payment is due in annual installments of $188,332 through 2023 at a 1.19% interest rate. These bonds are being retired with collections from proceeds of Sales Tax. Payments are due on March 1 and September 1 of each year. Funds are taken automatically by the First National Bank Trust Department from the non-interest savings account.

Principal balance, as of 12-31-14..... $ 1,602,864

$585,000 – **2008 Stone Ridge Booster Station** to construct a booster station in the stone ridge development. Payments are due in annual installments of $68,112 in 2009 and $78,642 in 2010-2018 at a 6% interest rate. These bonds are being retired with Water funds revenue. Payments are due on March 1 and September 1 of each year. Funds are taken automatically by the First National Bank Trust Department from the non-interest savings account.

Principal balance, as of 12-31-14..... $ 276,023

STATE REVOLVING LOAN

$344,925 - **2010 Clean Water Revenue Borrower Bond (SRF) for Bethany Meadows Project** to construct a drainage way are due in quarterly payments of $9,653.70 2011 through 2021 at a 2.25% interest rate. Payments will come from revenue from the Debt Retirement (Sales Tax) fund for drainage improvements. Payments are due on January 15, April 15, July 15, and October 15 of each year. Funds are taken automatically by the First National Bank Trust Department from the non-interest checking account.

Principal balance, as of 12-31-14.....$224,554

SPECIAL ASSESSMENT BONDS

$500,000 - **2006 Chestnut Boulevard Street Improvement Bonds** due in annual installments of $61,750 through 2016 at a 5.05% interest rate. These bonds are being retired with collections from property owners through Debt Service Funds for curb, gutter and utility improvements to Chestnut Boulevard. Payments are due on March 1 and September 1 of each year. The City obligation is $272,322 to be paid over ten years. Funds are taken automatically by the First National Bank Trust Department from the non-interest savings account.

Principal balance, as of 12-31-14.....$ 115,000

$550,000 – **2007 Chestnut Boulevard Street Improvement Bonds** due in annual installments of $70,561 through 2017 at a 5% interest rate. These bonds are being retired with collections from property owners through Debt Service Funds for curb, gutter and utility improvements to Chestnut Boulevard. Payments are due on March 1 and September 1 of each year. The City obligation is $236,096 to be paid over ten years. Funds are taken automatically by the First National Bank Trust Department from the non-interest savings account.

Principal balance, as of 12-31-14..... $ 194,332

$ 225,000 – **2008 NE Lift Station and Express Avenue Bonds** due in annual installments through 2018 at a 2.25% interest rate. These bonds are being retired with collections from property owners through Debt Service Funds. Payments are due on March 1 and September 1 of each year. There is no city obligation on this bond. Funds are taken automatically by the First National Bank Trust Department from the non-interest checking account.

Principal balance, as of 12-31-14.....$ 100,963

$ 280,000 – **2009 Country Club Drainage Project** due in semi-annual installments of 15,858 the first year and 17,853 the following years through 2019 at a 3.61% interest rate. These bonds are being retired with collections from property owners through special assessment collections. Payments are due March 1 and September 1 of each year. The city obligation on this bond is 51,284 to be paid over 10 years. Funds are taken automatically by First National Bank from the non-interest checking account.

Principal balance, as of 12-31-14..... $ 147,086

TAX INCREMENT BONDS

$1,377,900 - **2006 TIF #2 Note**-due in semi-annual installments of $53,390.94 through 2025 at a 3.38% interest rate. These bonds are being retired with collections from a TIF #2 and a BID. This bond is for the construction of the Conference Center. Payments are due on March 1 and September 1 of each year.

Principal balance, as of 12-31-14..... $937,260

$750,000 – **2009 TIF #3** Tax Increment Revenue Bond due in annual installments of 67,996 thru 2024. Interest rate is at 4.10%. This bond was for construction of Hemlock Boulevard. Payments are due June 15 of each year.

Principal balance, as of 12-31-14.....$548,776

ECONOMIC FACTORS AND NEXT YEAR'S BUDGETS AND RATES

The City of Brandon continued to experience additional revenues in property taxes from new construction with percentage growth of 2.46% in 2014. Under the state mandated property tax freeze, property taxes are 2.1% for 2014 which was based on the Consumer Price Index (CPI).

One of the primary sources of revenue to the City is based on taxable retail sales in the community (sales tax). The City has experienced an increase in taxable sales of about 11% over the prior year.

The City of Brandon has adopted a General Fund budget for the 2015 fiscal year which will have an increase of 7.18% in expenditures compared to 2014 for a total of $5,347,637. This is due to equipment and projects budgeted in the 2015.

CITY OF BRANDON
STATEMENT OF NET POSITION
DECEMBER 31, 2014

	Primary Government		
	Governmental Activities	Business-Type Activities	Total
ASSETS:			
Cash and Cash Equivalents	$ 4,590,406.09	$ 2,406,386.65	$ 6,996,792.74
Investments	752,976.91	774,699.18	1,527,676.09
Taxes Receivable	30,653.50		30,653.50
Special Assessment Receivable	409,889.77	1,001.21	410,890.98
Accounts Receivable	28,544.50	1,354.18	29,898.68
Utilities Receivable, Net		402,887.05	402,887.05
Notes Receivable	16,902.38		16,902.38
Due From Government	45,372.86	22.00	45,394.86
Internal Balances	(1,602,498.77)	1,602,498.77	
Inventories	34,861.47	36,998.11	71,859.58
Prepaid Expenses	493.00	2,595.00	3,088.00
Restricted Assets:			
Restricted Deposits	35,276.56		35,276.56
Noncurrent Assets:			
Special Assessment Receivable	33,816.50	3,003.63	36,820.13
Notes Receivable	304,058.57		304,058.57
Capital Assets:			
Land and Construction in Progress	1,727,645.79	1,898,884.17	3,626,529.96
Other Capital Assets, Net of Depreciation	17,861,661.92	15,867,108.89	33,728,770.81
TOTAL ASSETS	24,270,061.05	22,997,438.84	47,267,499.89
LIABILITIES :			
Accounts Payable	51,036.31	94,283.67	145,319.98
Other Current Liabilities	61,742.98	26,727.05	88,470.03
Unearned Revenue	20,090.00	112,426.94	132,516.94
Noncurrent Liabilities:			
Due Within One Year	561,841.36	241,596.45	803,437.81
Due in More than One Year	4,380,481.88	1,063,824.03	5,444,305.91
TOTAL LIABILITIES	5,075,192.53	1,538,858.14	6,614,050.67
NET POSITION:			
Net Investment in Capital Assets	14,797,215.09	16,568,649.18	31,365,864.27
Restricted for:			
Debt Service	646,469.13		646,469.13
Capital Improvement	825,818.68		825,818.68
Community Development	689,286.46		689,286.46
SDPAA Insurance Pool Contribution	35,276.56		35,276.56
Unrestricted	2,200,802.60	4,889,931.52	7,090,734.12
TOTAL NET POSITION	$ 19,194,868.52	$ 21,458,580.70	$ 40,653,449.22

The notes to the financial statments are an integral part of this statement.

CITY OF BRANDON
STATEMENT OF ACTIVITIES
FOR THE YEAR ENDED DECEMBER 31, 2014

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position – Primary Government: Governmental Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Business-Type Activities	Net (Expense) Revenue and Changes in Net Position – Primary Government: Total
Primary Government:							
Governmental Activities:							
General Government	$ 754,115.41	$ 118,231.00	$	$	$ (635,884.41)	$	$ (635,884.41)
Public Safety	1,522,321.60	48,965.75		18,615.98	(1,454,739.87)		(1,454,739.87)
Public Works	1,380,673.36	425,723.02	71,996.63	7,182.00	(875,771.71)		(875,771.71)
Health and Welfare	10,817.18	225.00			(10,592.18)		(10,592.18)
Culture and Recreation	720,554.74	145,585.69	50,000.00	18,922.00	(506,047.05)		(506,047.05)
Conservation and Development	339,119.59	70,095.43			(269,024.16)		(269,024.16)
*Interest on Long Term Debt	148,228.98				(148,228.98)		(148,228.98)
Total Governmental Activities	4,875,830.86	808,825.89	121,996.63	44,719.98	(3,900,288.36)		(3,900,288.36)
Business-type Activities:							
Water	967,631.70	1,652,446.60				684,814.90	684,814.90
Sewer	1,322,975.04	1,961,652.28				638,677.24	638,677.24
Golf Course	1,107,210.66	1,112,297.50				5,086.84	5,086.84
Electric	126,724.23	121,261.66				(5,462.57)	(5,462.57)
Total Business-type Activities	3,524,541.63	4,847,658.04				1,323,116.41	1,323,116.41
Total Primary Government	$ 8,400,372.49	$ 5,656,483.93	$ 121,996.63	$ 44,719.98	(3,900,288.36)	1,323,116.41	(2,577,171.95)
	General Revenues:						
	Taxes:						
	Property Taxes				2,367,193.37		2,367,193.37
	Sales Taxes				3,011,694.00		3,011,694.00
	Gross Receipts Business Tax				56,296.00		56,296.00
	State Shared Revenues				72,710.09		72,710.09
	Unrestricted Investment Earnings				9,617.64	1,801.56	11,419.20
	Miscellaneous Revenue				18,686.16	20,241.25	38,927.41
	Gain/(Loss) on Disposition of Assets				(1,776.33)	10,471.21	8,694.88
	Special Item-Insurance Proceeds					55,684.71	55,684.71
	Transfers In (Out)				(28,171.81)	28,171.81	
	Total General Revenues , Special Items and Transfers				5,506,249.12	116,370.54	5,622,619.66
	Change in Net Position				1,605,960.76	1,439,486.95	3,045,447.71
	Net Position-Beginning				17,588,907.76	20,019,093.75	37,608,001.51
	NET POSITION - ENDING				$ 19,194,868.52	$ 21,458,580.70	$ 40,653,449.22

* The Municipality does not have interest expense related to functions presented above. This amount includes indirect interest expense on general long-term debt.

The notes to the financial statements are an integral part of this statement

CITY OF BRANDON

BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2014

	General Fund	Street Maintenance Fund	TIF Hemlock Blvd. Debt Service Fund	Nonmajor Governmental Funds	Total Governmental Funds
ASSETS:					
Cash and Cash Equivalents	$3,555,674.91	$ 168,614.91	$	$ 866,116.27	$ 4,590,406.09
Taxes Receivable--Delinquent	30,653.50				30,653.50
Accounts Receivable	24,840.50			3,704.00	28,544.50
Special Assessments Receivable--Current	8,974.46	289,141.07		111,774.24	409,889.77
Special Assessments Receivable--Delinquen		5,382.43			5,382.43
Special Assessments Receivable--Deferred	62,821.22			221,751.01	284,572.23
Notes Receivable-Current				16,902.38	16,902.38
Notes Receivable-Noncurrent				304,058.57	304,058.57
Restricted Deposits	35,276.56				35,276.56
Due from Other Governments	42,099.65			3,273.21	45,372.86
Inventory	34,861.47				34,861.47
Investments	578,416.73	14.41		174,545.77	752,976.91
Prepaid Expenses	493.00				493.00
TOTAL ASSETS	$4,374,112.00	$ 463,152.82	$	$ 1,702,125.45	$ 6,539,390.27
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:					
Liabilities:					
Accounts Payable	$ 34,871.59	$	$	$ 16,164.72	$ 51,036.31
Wages Payable	11,030.17				11,030.17
Taxes Payable	1,600.55				1,600.55
Due to Other Fund	1,175,000.00		341,922.11	16,484.35	1,533,406.46
Advances From Other Fund				69,092.31	69,092.31
Unearned Revenue	20,090.00				20,090.00
Total Liabilities	1,242,592.31		341,922.11	101,741.38	1,686,255.80
Deferred Inflows of Resources:					
Unavailable Revenue--Property Taxes	30,653.50				30,653.50
Unavailable Revenue--Special Assessments	71,795.68	294,523.50		333,525.25	699,844.43
Other Deferred Inflows of Resources	16,472.06				16,472.06
Total Deferred Inflows of Resources	118,921.24	294,523.50		333,525.25	746,969.99
Fund Balances:					
Nonspendable	70,631.03				70,631.03
Restricted				1,364,896.20	1,364,896.20
Committed		168,629.32			168,629.32
Assigned	531,478.00				531,478.00
Unassigned	2,410,489.42		(341,922.11)	(98,037.38)	1,970,529.93
Total Fund Balances	3,012,598.45	168,629.32	(341,922.11)	1,266,858.82	4,106,164.48
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$4,374,112.00	$ 463,152.82	$	$ 1,702,125.45	$ 6,539,390.27

The notes to the financial statements are an integral part of this statement.

CITY OF BRANDON
RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE SHEET
TO THE STATEMENT OF NET POSITION
DECEMBER 31, 2014

Total Fund Balances - Governmental Funds		$ 4,106,164.48
Amounts reported for governmental activities in the statement of net position is different because:		
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds.		
Cost of Capital Assets	$ 26,957,836.50	
Accumulated Depreciation	(7,368,528.79)	19,589,307.71
Long-term liabilities are not due and payable in the current period and therefore are not reported in the funds.		(4,942,323.24)
Assets such as taxes receivable (delinquent) and special assessments receivable are not available to pay for current period expenditures and therefore are not currently available in the funds.		490,831.83
Accrued interest payable is not accounted for in the modified accrual basis of accounting, but is accounted for in the statement of net position.		(49,112.26)
Net Position - Governmental Funds		$19,194,868.52

The notes to the financial statements are an integral part of this statement.

CITY OF BRANDON
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	General Fund	Street Maintenance Fund	TIF Hemlock Blvd. Debt Service Fund	Other Governmental Funds	Total Governmental Funds
Revenues:					
Taxes:					
General Property Taxes	$ 2,180,356.92	$	$	$ 178,269.13	$ 2,358,626.05
General Sales and Use Tax	2,816,417.53			195,276.47	3,011,694.00
Gross Receipts Business Tax				56,296.00	56,296.00
Amusement Taxes	792.00				792.00
Penalties and Interest on Delinquent Taxes	4,733.49				4,733.49
Licenses and Permits	115,406.00				115,406.00
Intergovernmental Revenue:					
Federal Grants	137,124.61				137,124.61
State Grants	3,488.00				3,488.00
State Shared Revenue:					
Bank Franchise Tax	28,481.20				28,481.20
Liquor Tax Reversion	39,361.25				39,361.25
Motor Vehicle Licenses (5%)	40,449.67				40,449.67
Local Government Highway and Bridge Fund	56,851.07				56,851.07
Other	4,867.64				4,867.64
County Shared Revenue:					
County Wheel Tax	9,042.92				9,042.92
Charges for Goods and Services:					
General Government	2,825.00				2,825.00
Public Safety	40,506.00				40,506.00
Sanitation	3,089.00				3,089.00
Health	225.00				225.00
Culture and Recreation	145,585.69				145,585.69
Other	72,623.81				72,623.81
Fines and Forfeits:					
Court Fines and Costs	8,459.75				8,459.75
Miscellaneous Revenue:					
Interest Income	2,361.36	31.80		7,224.48	9,617.64
Rentals	95.00				95.00
Special Assessments	24,174.46	280,949.93		148,961.72	454,086.11
Street Assessments	2,579.11				2,579.11
Contributions/Donations from Private Sources	18,922.00				18,922.00
Other	18,591.16				18,591.16
Total Revenue	5,777,409.64	280,981.73		586,027.80	6,644,419.17
Expenditures:					
General Government:					
Legislative	123,537.18				123,537.18
Executive	214,912.94				214,912.94
Elections	702.59				702.59
Financial Administration	227,031.01				227,031.01
Other	56,710.84			99,767.96	156,478.80
Total General Government	622,894.56			99,767.96	722,662.52

CITY OF BRANDON

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES

GOVERNMENTAL FUNDS

FOR THE YEAR ENDED DECEMBER 31, 2014

	General Fund	Street Maintenance Fund	TIF Hemlock Blvd. Debt Service Fund	Other Governmental Funds	Total Governmental Funds
Public Safety:					
Police	1,104,869.42				1,104,869.42
Fire	177,007.86				177,007.86
Protective Inspection	148,004.18				148,004.18
Other Protection	15,895.13				15,895.13
Total Public Safety	1,445,776.59				1,445,776.59
Public Works:					
Highways and Streets	528,980.20				528,980.20
Sanitation	4,558.75				4,558.75
Transit	173,577.76				173,577.76
Total Public Works	707,116.71				707,116.71
Health and Welfare:					
Health	10,817.18				10,817.18
Total Health and Welfare	10,817.18				10,817.18
Culture and Recreation:					
Recreation	175,575.53				175,575.53
Parks	346,550.04				346,550.04
Libraries	100.00				100.00
Total Culture and Recreation	522,225.57				522,225.57
Conservation and Development:					
Economic Development and Assistance					
Total Conservation and Development	338,652.09			467.50	339,119.59
Debt Service	399,821.60		68,165.25	338,279.84	806,266.69
Capital Outlay	312,687.91	112,352.41		16,164.72	441,205.04
Total Expenditures	4,359,992.21	112,352.41	68,165.25	454,680.02	4,995,189.89
Excess of Revenue Over (Under) Expenditures	1,417,417.43	168,629.32	(68,165.25)	131,347.78	1,649,229.28
Other Financing Sources (Uses):					
Transfer In	16,807.00			24,615.61	41,422.61
Transfer (Out)	(69,594.42)				(69,594.42)
Compensation for Loss/Damage to Capital Assets	500.00				500.00
Sale of Municipal Property	6,334.20				6,334.20
Total Other Financing Sources (Uses):	(45,953.22)			24,615.61	(21,337.61)
Net Change in Fund balance	1,371,464.21	168,629.32	(68,165.25)	155,963.39	1,627,891.67
Net Change in Nonspendable Fund Balance	15,459.00				15,459.00
Fund Balance - Beginning Balance	1,625,675.24		(273,756.86)	1,110,895.43	2,462,813.81
FUND BALANCE- ENDING	$3,012,598.45	$ 168,629.32	$(341,922.11)	$1,266,858.82	$4,106,164.48

The notes to the financial statements are an integral part of this statement

CITY OF BRANDON
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND NET POSITION TO THE GOVERNMENT-WIDE STATEMENT OF ACTIVITIES
FOR THE YEAR ENDED DECEMBER 31, 2014

Net Change in Fund Balances - Total Governmental Funds		$ 1,627,891.67
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures However, in the statement of activities the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This was the amount by which depreciation expense exceeded capital outlay in the period.		
Investment in Capital Assets	$ 441,205.04	
Depreciation Expense	(988,659.60)	(547,454.56)
Governmental funds report revenues when they meet the available criteria. Because some revenues will not be collected for several months after the city's calendar year ends, they are not considered "available" revenues and are deferred in the governmental funds.		(118,323.43)
Repayment of bond principal is an expenditure in the governmental funds, but the repayment reduces long-term liabilities in the statement of net assets.		630,031.38
Some expenses reported in the statement of activities do not require the use of current financial resources and therefore are not reported as expenditures in governmental funds.		
Change in accrued leave	(6,683.12)	
Change in inventory	15,459.00	8,775.88
Interest on long-term debt in the statement of activities differs from the amount reported in the governmental funds because interest is recognized as an expenditure in the funds when it is due, and thus requires the use of current financial resources. In the statement of activities, however, interest expense is recognized as the interest accrues, regardless of when it is due. This amount represents the change in the amounts accrued.		6,468.35
In the statement of activities, contributed assets are reported, whereas this amount is not reported in the governmental fund financial statements.		7,182.00
In the statement of activities, gains and losses on disposal of assets is reported, whereas in the governmental funds, the proceeds and expenses from the disposal of fixed assets is reflected. The net amount of gains and losses is:		(8,610.53)
Change in Net Position of Governmental Activities		$ 1,605,960.76

The notes to the financial statements are an integral part of this statement.

CITY OF BRANDON
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
DECEMBER 31, 2014

	Enterprise Funds				
	Water Fund	Sewer Fund	Golf Course Fund	Non Major Enterprise Fund	Totals
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	$ 1,078,088.01	$ 1,325,348.64	$ 2,950.00	$	$ 2,406,386.65
Investments	591,995.05	182,704.13			774,699.18
Utilities Receivable, Net	152,014.70	235,150.39		15,721.96	402,887.05
Accounts Receivable			1,354.18		1,354.18
Special Assessments Receivable--Current		1,001.21			1,001.21
Due From Government	11.37	10.63			22.00
Due from Other Funds	1,533,406.46				1,533,406.46
Inventory of Supplies	7,852.92				7,852.92
Inventory of Stores Purchased for Resale			29,145.19		29,145.19
Prepaid Expense			2,595.00		2,595.00
Total Current Assets	3,363,368.51	1,744,215.00	36,044.37	15,721.96	5,159,349.84
Noncurrent Assets:					
Special Assessments Receivable--Deferred		3,003.63			3,003.63
Advances to Other Funds	69,092.31				69,092.31
Capital Assets:					
Land	83,986.18	381,304.99	1,254,649.93		1,719,941.10
Buildings	2,431,511.83	281,921.08	1,456,632.52		4,170,065.43
Improvements Other Than Buildings	8,394,054.99	8,697,985.64	859,801.30		17,951,841.93
Machinery and Equipment	1,292,402.79	621,362.40	582,760.13		2,496,525.32
Less: Accumulated Depreciation	(4,035,810.73)	(3,135,182.05)	(1,580,331.01)		(8,751,323.79)
Construction Work in Progress	161,152.53	17,790.54			178,943.07
Total Noncurrent Assets	8,396,389.90	6,868,186.23	2,573,512.87		17,838,089.00
TOTAL ASSETS	11,759,758.41	8,612,401.23	2,609,557.24	15,721.96	22,997,438.84
LIABILITIES:					
Current Liabilities:					
Accounts Payable	10,063.10	78,527.78	4,905.99	786.80	94,283.67
Due to State			5,516.42		5,516.42
Accrued Interest Payable	6,036.06		1,499.76		7,535.82
Accrued Wages Payable	1,648.70	891.95	9,501.74		12,042.39
Accrued Taxes Payable	225.05	121.75	1,285.62		1,632.42
Current Portion of Long Term Debt	114,168.38	4,874.39	122,553.68		241,596.45
Unearned Revenue	661.25		111,765.69		112,426.94
Total Current Liabilities	132,802.54	84,415.87	257,028.90	786.80	475,034.11
Noncurrent Liabilities:					
Long-Term Debt	236,243.42	14,624.00	812,956.61		1,063,824.03
Total Noncurrent Liabilities	236,243.42	14,624.00	812,956.61		1,063,824.03
NET POSITION:					
Net Investment in Capital Assets	8,007,863.61	6,865,182.60	1,695,602.97		16,568,649.18
Unrestricted Net Position	3,382,848.84	1,648,178.76	(156,031.24)	14,935.16	4,889,931.52
Total Net Position	$ 11,390,712.45	$ 8,513,361.36	$ 1,539,571.73	$ 14,935.16	$ 21,458,580.70

The notes to the financial statements are an integral part of this statement.

CITY OF BRANDON
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND BALANCES
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	Enterprise Funds				
	Water Fund	Sewer Fund	Golf Course Fund	Non Major Fund	Totals
Operating Revenue:					
Charges for Goods and Services	$	$ 1,961,652.28	$	$ 121,261.66	$ 2,082,913.94
(Revenues Securing Bond Issues)	1,652,446.60		1,112,297.50		2,764,744.10
Other Income	17,055.00	3,186.25			20,241.25
Total Operating Revenue	1,669,501.60	1,964,838.53	1,112,297.50	121,261.66	4,867,899.29
Operating Expenses:					
Personal Services	293,348.46	157,585.16	487,716.38		938,650.00
Other Current Expense	341,815.31	944,331.88	250,160.51	2,924.10	1,539,231.80
Materials (Cost of Goods Sold)			237,884.58	123,800.13	361,684.71
Depreciation	309,313.47	221,058.00	110,679.43		641,050.90
Total Operating Expenses	944,477.24	1,322,975.04	1,086,440.90	126,724.23	3,480,617.41
Operating Income (Loss)	725,024.36	641,863.49	25,856.60	(5,462.57)	1,387,281.88
Nonoperating Revenue (Expense):					
Investment Earnings	914.93	886.63			1,801.56
Interest Expense and Fiscal Charges	(23,154.46)		(20,769.76)		(43,924.22)
Gain (Loss) on Disposition of Assets	10,447.70	23.51			10,471.21
Total Nonoperating Revenue (Expense)	(11,791.83)	910.14	(20,769.76)		(31,651.45)
Income (Loss) Before Transfers and Special Items	713,232.53	642,773.63	5,086.84	(5,462.57)	1,355,630.43
Transfers In			35,568.55	9,410.26	44,978.81
Transfers Out	(15,705.00)	(1,102.00)			(16,807.00)
Special Item - Insurance Proceeds		55,684.71			55,684.71
Total Transfers and Special Items	(15,705.00)	54,582.71	35,568.55	9,410.26	83,856.52
Change in Net Position	697,527.53	697,356.34	40,655.39	3,947.69	1,439,486.95
Net Position - Beginning	10,693,184.92	7,816,005.02	1,498,916.34	10,987.47	20,019,093.75
NET POSITION - ENDING	$ 11,390,712.45	$ 8,513,361.36	$ 1,539,571.73	$ 14,935.16	$ 21,458,580.70

The notes to the financial statements are an integral part of this statement.

CITY OF BRANDON
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	Enterprise Funds				
	Water Fund	Sewer Fund	Golf Course Fund	Non Major Fund	Totals
CASH FLOWS FROM OPERATING ACTIVITIES:					
Cash Receipts from Customers	$ 1,622,178.80	$ 1,869,062.35	$ 1,115,519.73	$ 117,253.14	$ 4,724,014.02
Internal Activity-Receipts from Other Funds	11,512.90	15,464.98			26,977.88
Cash Payments to Employees for Services	(291,967.92)	(154,935.87)	(504,067.45)		(950,971.24)
Cash Payments to Suppliers of Goods and Services	(355,662.03)	(903,495.52)	(487,412.31)	(126,663.40)	(1,873,233.26)
Cash Payments for Interfund Services			(7,904.15)		(7,904.15)
Other Receipts (Payments)	17,055.00	3,186.25			20,241.25
Net Cash Provided (Used) by Operating Activities	1,003,116.75	829,282.19	116,135.82	(9,410.26)	1,939,124.50
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES:					
Interfund Loans	190,399.31				190,399.31
Insurance Proceeds		55,684.71			55,684.71
Operating Transfers In			35,568.55	9,410.26	44,978.81
Operating Transfers Out	(15,705.00)	(1,102.00)			(16,807.00)
Net Cash Provided (Used) by Operating Activities	174,694.31	54,582.71	35,568.55	9,410.26	274,255.83
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:					
Purchase of Capital Assets	(514,919.47)	(426,925.33)			(941,844.80)
Principal Paid on Capital Debt	(228,005.63)		(136,047.34)		(364,052.97)
Sale of Surplus Property	10,447.70				10,447.70
Interest Paid on Capital Debt	(26,344.51)		(21,093.49)		(47,438.00)
Net Cash Provided (Used) by Capital and Related Financing Activities	(758,821.91)	(426,901.82)	(157,140.83)		(1,342,864.56)
CASH FLOWS FROM INVESTING ACTIVITIES:					
Purchase of Investment Securities	(503.30)	(476.33)			(979.63)
Interest Earnings	914.93	886.63			1,801.56
Net Cash Provided (Used) by Investing Activities	411.63	410.30			821.93
Net Increase (Decrease) in Cash and Cash Equivalents	$ 419,400.78	$ 457,373.38	$ (5,436.46)	$ (0.00)	$ 871,337.70
Cash and Cash Equivalents at Beginning of Year	$ 658,687.23	$ 867,975.26	$ 8,386.46	$	$ 1,535,048.95
Cash and Cash Equivalents at End of Year	1,078,088.01	1,325,348.64	2,950.00		2,406,386.65
Net Increase (Decrease) in Cash and Cash Equivalents	$ 419,400.78	$ 457,373.38	$ (5,436.46)	$	$ 871,337.70

CITY OF BRANDON
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014
(continued)

	Enterprise Funds				
	Water Fund	Sewer Fund	Golf Course Fund	Non Major Fund	Totals
RECONCILIATION OF OPERATING INCOME (LOSS) TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES:					
Operating Income (Loss)	$ 725,024.36	$ 641,863.49	$ 25,856.60	$ (5,462.57)	$ 1,387,281.88
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities:					
Depreciation Expense	309,313.47	221,058.00	110,679.43		641,050.90
Change in Assets and Liabilities:					
Receivables and Other Receivables	(18,740.40)	(77,124.95)	1,804.57	(4,008.52)	(98,069.30)
Inventories	1,236.52		2,528.66		3,765.18
Accounts and Other Payables	(15,083.24)	40,836.36	(9,800.03)	60.83	16,013.92
Accrued Leave Payable	1,380.54	2,649.29	(16,351.07)		(12,321.24)
Unearned Revenue	(14.50)		1,417.66		1,403.16
Net Cash Provided (Used) by Operating Activities	$ 1,003,116.75	$ 829,282.19	$ 116,135.82	$ (9,410.26)	$ 1,939,124.50

The notes to the financial statements are an integral part of this statement

NOTE 1 – Summary of Significant Accounting Policies

a. Financial Reporting Entity

The reporting entity of the City of Brandon consists of the primary government (which includes all of the funds, organizations, institutions, agencies, departments, and offices that make up the legal entity, plus those funds for which the primary government has a fiduciary responsibility, even though those fiduciary funds may represent organizations that do not meet the criteria for inclusion in the financial reporting entity); those organizations for which the primary government is financially accountable; and other organizations for which the nature and significance of their relationship with the primary government are such that their exclusion would cause the financial reporting entity's financial statements to be misleading or incomplete.

b. Basis of Presentation:

Government-wide Financial Statements:

The Statement of Net Position and Statement of Activities display information about the reporting entity as a whole. They include all funds of the reporting entity except for fiduciary funds. The statements distinguish between governmental and business-type activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange revenues. Business-type activities are financed in whole or in part by fees charged to external parties for goods or services.

The statement of activities presents a comparison between direct expenses and program revenues for each segment of the business-type activities of the City and for each function of the City's governmental activities. Direct expenses are those that are specifically associated with a program or function and, therefore, are clearly identifiable to a particular function. Program revenues include (a) charges paid by recipients of goods and services offered by the programs and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues that are not classified as program revenues, including all taxes, are presented as general revenues.

Fund Financial Statements:

Fund financial statements of the reporting entity are organized into funds, each of which is considered to be a separate accounting entity. Each fund is accounted for by providing a separate set of self-balancing accounts that constitute its assets, liabilities, fund equity, revenues, and expenditures/expenses. Funds are organized into three major categories: governmental, proprietary, and fiduciary. An emphasis is placed on major funds within the governmental and proprietary categories. A fund is considered major if it is the primary operating fund of the City or it meets the following criteria:

1. Total assets and deferred outflows of resources, liabilities and deferred inflows of resources, revenues, or expenditures/expenses of the individual governmental or enterprise fund are at least 10 percent of the corresponding total for all funds of that category or type, and

2. Total assets and deferred outflows of resources, liabilities and deferred inflows of resources, revenues, or expenditures/expenses of the individual governmental or enterprise fund are at least 5 percent of the corresponding total for all governmental and enterprise funds combined, or

3. Management has elected to classify one or more governmental or enterprise funds as major for consistency in reporting from year to year, or because of public interest in the fund's operations.

The funds of the City financial reporting entity are described below:

GOVERNMENTAL FUNDS

General Fund - The General Fund is the general operating fund of the city. It is used to account for all financial resources except those required to be accounted for in another fund. The General Fund is always considered to be a major fund.

Special Revenue Funds – Special revenue funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specified purposes other than debt service or capital projects.

Maintenance Fund - to account for special assessment taxes which may be used only for Improvements to public streets. This is a major fund.

The following Special Revenue Funds are not considered major funds: Third Cent Sales Tax Fund, 2006 TIF Special Revenue Fund and the Brandon Revolving Loan Fund. These funds are reported on the fund financial statements as "Other Governmental Funds" and are detailed in the combining statement section.

Debt Service Funds - Debt service funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditure for principal and interest.

TIF Hemlock Blvd. Debt Service - to account for special assessment taxes which may be used only for the payment of the debt principal, interest, and related costs. This is a major fund.

The following Debt Service Funds are not considered major funds: Tax Increment District, Park Street Special Assessment, Chestnut Boulevard Special Assessment, Chestnut Boulevard Middle Special Assessment, Express Avenue/French Creek Special Assessment, TIF Convention Center Debt Service Fund, and Country Club (CC) Heights Debt Service Fund. These funds are reported on the fund financial statements as "Other Governmental Funds" and are detailed in the combining statement section.

Capital Projects Funds – Capital Projects Funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditure for capital outlays, including the acquisition or construction of capital facilities and other capital assets (other than those financed by proprietary funds and trust funds).

The Aspen Blvd Capital Project Fund and the Sioux Blvd Capital Project Fund are not considered to be major funds: These funds are reported on the fund financial statements as "Other Governmental Funds" and are detailed in the combining statement section.

PROPRIETARY FUNDS

Enterprise Funds - Enterprise Funds may be used to report any activity for which a fee is charged to external users for goods or services. Activities are required to be reported as enterprise funds if any one of the following criteria is met. Governments should apply each of these criteria in the context of the activity's principal revenue sources.

a. *The activity is financed with debt that is secured solely by a pledge of the net revenues from fees and charges of the activity. Debt that is secured by a pledge of net revenues from fees and charges and the full faith and credit of a related primary government or component unit-even if that government is not expected to make any payments-is not payable solely from fees and charges of the activity. (Some debt may be secured, in part, by a portion of its own*

proceeds but should be considered as payable "solely" from the revenues of the activity.)

b. *Laws or regulations require that the activity's costs of providing services, including capital costs (such as depreciation or debt service), be recovered with fees and charges, rather than with taxes or similar revenues.*

c. *The pricing policies of the activity establish fees and charges designed to recover its costs, including capital costs (such as depreciation or debt service).*

Water Fund - financed primarily by user charges, this fund accounts for the construction and operation of the City waterworks system and related facilities. (SDCL 9-47-1) This is a major fund.

Sewer Fund - financed primarily by user charges, this fund accounts for the construction and operation of the City sanitary sewer system and related facilities. (SDCL 9-48-2) This is a major fund.

Golf Course Fund - financed by user charges, this fund accounts for the operations of the golf course services. This is a major fund.

Electric Fund - financed by user charges, this fund accounts for the operations of electric services. This is not a major fund.

c. Measurement Focus and Basis of Accounting:

Measurement focus is a term used to describe "how" transactions are recorded within the various financial statements. Basis of accounting refers to "when" revenues and expenditures or expenses are recognized in the accounts and reported in the financial statements, regardless of the measurement focus.

Measurement Focus:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities, both governmental and business-type activities are presented using the economic resources measurement focus, applied on the accrual basis of accounting.

Fund Financial Statements:

In the fund financial statements, the "current financial resources" measurement focus and the modified accrual basis of accounting are applied to governmental funds, while the "economic resources" measurement focus and the accrual basis of accounting are applied to the proprietary funds.

Basis of Accounting:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities, governmental and business-type activities are presented using the accrual basis of accounting. Under the accrual basis of accounting, revenues and related assets are recorded when earned (usually when the right to receive cash vests); and, expenses and related liabilities are recorded when an obligation is incurred (usually when the obligation to pay cash in the future vests).

Fund Financial Statements:

All governmental funds are accounted for using the modified accrual basis of accounting. Their revenues, including property taxes, are recognized when they become measurable and available. "Available" means resources are collected or to be collected soon enough after the end of the fiscal year that they can be used to pay the bills of the current period. The accrual period does not exceed one bill-paying cycle, and for the City of Brandon, the length of that cycle is 30 days. The revenues which are accrued at December 31, 2014 are taxes and special assessments receivable, amounts due from other governments, and other receivables due within 30 days.

Under the modified accrual basis of accounting, receivables may be measurable but not available. Available means collectible within the current period or soon enough thereafter to be used to pay liabilities of the current period. Reported deferred inflows of resources are those where asset recognition criteria have been met but for which revenue recognition criteria have not been met.

Expenditures are generally recognized when the related fund liability is incurred. Exceptions to this general rule include principal and interest on general long-term debt which are recognized when due.

All proprietary fund types are accounted for using the accrual basis of accounting. Their revenues are recognized when they are earned, and their expenses are recognized when they are incurred.

d. Interfund Eliminations and Reclassifications:

Government-wide Financial Statements:

In the process of aggregating data for the government-wide financial statements, some amounts reported as interfund activity and balances in the fund financial statements have been eliminated or reclassified, as follows:

In order to minimize the grossing-up effect on assets and liabilities within the governmental and business-type activities columns of the primary government, amounts reported as interfund receivables and payables have been eliminated in the governmental and business-type activities columns, except for the net, residual amounts due between governmental and business-type activities, which are presented as Internal Balances.

e. Deposits and Investments:

For the purpose of financial reporting, "cash and cash equivalents" includes all demand and savings accounts and certificates of deposit or short-term investments with a term to maturity at date of acquisition of three months or less. Investments in open-end mutual fund shares, or similar investments in external investment pools, are also considered to be cash equivalents.

Investments classified in the financial statements consist primarily of certificates of deposit whose term to maturity at date of acquisition exceeds three months, and/or those types of investment authorized by South Dakota Codified Laws (SDCL) 4-5-6.

f. Capital Assets:

Capital assets include land, buildings, machinery and equipment, and all other tangible or intangible assets that are used in operations and that have initial useful lives extending beyond a single reporting period. Infrastructure assets are long-lived capital assets that normally are stationary in nature and normally can be preserved for significantly greater number of years than most capital assets.

The accounting treatment over capital assets depends on whether the assets are used in governmental fund operations or proprietary fund operations and whether they are reported in the government-wide or fund financial statements.
Government-Wide Financial Statements:

Capital assets are recorded at historical cost, or estimated cost, where actual cost could not be determined. Donated capital assets are valued at their estimated fair value on the date donated. Reported cost values include ancillary charges necessary to place the asset into its intended location and condition for use. Subsequent to initial capitalization, improvements or betterments that are significant and which extend the useful file of a capital asset are also capitalized.
The total December 31, 2014 balance of governmental activities capital assets includes approximately 7.0% for which the costs were determined by estimates of original costs. The total of December 31, 2014 balance of business-type capital assets includes approximately 5.2% for which the costs were determined by estimates of original costs. These estimated costs were established by reviewing applicable historical costs of similar items and basing the estimations thereon.

Infrastructure assets used in general government operations, consisting of certain improvements other than buildings, including roads, bridges, sidewalks, drainage systems, and lighting systems, acquired prior to January 1, 2004, were not required to be capitalized by the City. Infrastructure assets acquired since January 1, 2004 are recorded at cost, and classified as "Improvements Other than Buildings."

For governmental activities capital assets, construction-period interest is not capitalized, in accordance with USGAAP, while for capital assets used in business-type activities/proprietary fund's operations, construction period interest is capitalized in accordance with USGAAP.

Depreciation of all exhaustible capital assets is recorded as an allocated expense in the government-wide Statement of Activities with net capital assets reflected in the Statement of Net Position. Accumulated depreciation is reported on the government-wide Statement of Net Position and on each proprietary fund's Statement of Net Position.

Capitalization thresholds (the dollar values above which asset acquisitions are added to the capital asset accounts), depreciation methods, and estimated useful lives of capital assets reported in the government-wide statements and proprietary funds are as follows:

	Threshold	Method	Useful Life
Land and land rights	All	NA	NA
Improvements other than buildings	$ 5,000.00	Straight Line	25-75 yrs
Buildings	25,000.00	Straight Line	25-75 yrs
Machinery and Equipment	5,000.00	Straight Line	7-10 yrs
Furniture	5,000.00	Straight Line	7-10 yrs
Infrastructure	All	Straight Line	25-75 yrs

Land is an inexhaustible capital asset and is not depreciated.

Fund Financial Statements:

In the fund financial statements, capital assets used in governmental fund operations are accounted for as Capital Outlay expenditures of the appropriate governmental fund upon acquisition. Capital assets used in proprietary fund operations are accounted for on the accrual basis, the same as in the government-wide statements.

g. Long-Term Liabilities:

The accounting treatment of long-term liabilities depends on whether the assets are used in

governmental fund operations or proprietary fund operations and whether they are reported in the government-wide or fund financial statements.

All long-term liabilities to be repaid from governmental and business-type resources are reported as liabilities in the government-wide statements. The long-term liabilities primarily consist of state revolving loans, certificates of participation, revenue bonds, special assessment bonds, notes payable, financing (capital acquisition) leases and compensated absences.

In the fund financial statements, debt proceeds are reported as revenues (other financing sources), while payments of principal and interest are reported as expenditures when they become due. The accounting for proprietary fund long-term debt is on the accrual basis, the same in the fund statements as in the government-wide statements.

h. Program Revenues:

Program revenues derive directly from the program itself or from parties other than the City's taxpayers or citizenry, as a whole. Program revenues are classified into three categories, as follows:

1. Charges for services - These arise from charges to customers, applicants, or others who purchase, use, or directly benefit from the goods, services, or privileges provided, or are otherwise directly affected by the services.

2. Program-specific operating grants and contributions - These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for use in a particular program.

3. Program-specific capital grants and contributions - These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for the acquisition of capital assets for use in a particular program.

i. Deferred Inflows and Deferred Outflows of Resources:

In addition to assets, the statement of financial position reports a separate section for deferred outflows of resources. Deferred outflows of resources represent consumption of net position that applies to a future period or periods. These items will not be recognized as an outflow of resources until the applicable future period.

In addition to liabilities, the statement of financial position reports a separate section for deferred inflows of resources. Deferred inflows of resources represent acquisitions of net position that applies to a future period or periods. These items will not be recognized as an inflow of resources until the applicable future period.

j. Proprietary Funds Revenue and Expense Classifications:

In the proprietary fund's Statement of Revenues, Expenses, and Changes in Net Position, revenues and expenses are classified in a manner consistent with how they are classified in the Statement of Cash Flows. That is, transactions for which related cash flows are reported as capital and related financing activities, noncapital financing activities, or investing activities are not reported as components of operating revenues or expenses.

k. Cash and Cash Equivalents:

The City pools the cash resources of its funds for cash management purposes. The proprietary funds essentially have access to the entire amount of their cash resources on demand. Accordingly, each proprietary fund's equity in the cash management pool is considered to be cash

and cash equivalents for the purpose of the Statement of Cash Flows.

l. Equity Classifications:

Government-wide Statements:

Equity is classified as Net Position and is displayed in three components:

1. Net Investment in Capital Assets - Consists of capital assets, including restricted capital assets, net of accumulated depreciation (if applicable) and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.

2. Restricted Net Position - Consists of net position with constraints placed on their use either by (a) external groups such as creditors, grantors, contributors, or laws and regulations of other governments; or (b) law through constitutional provisions or enabling legislation.

3. Unrestricted Net Position - All other net position that does not meet the definition of "restricted" or "net investment in capital assets".

Fund Financial Statements:

Governmental fund equity is classified as fund balance, and may distinguish between "Nonspendable", "Restricted", "Committed", "Assigned" and "Unassigned" components. Proprietary fund equity is classified the same as in the government-wide financial statements.

m. Application of Net Position:

It is the City's policy to first use restricted net position, prior to the use of unrestricted net position, when an expense is incurred for purposes for which both restricted and unrestricted net positions are available.

n. Fund Balance Classification Policies and Procedures:

In accordance with Government Accounting Standards Board (GASB) No. 54, Fund Balance Reporting and Governmental Fund Type Definitions, the City classifies governmental fund balances as follows:

- Nonspendable – Includes fund balance amounts that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

- Restricted – Includes fund balance amounts that are constrained for specific purposes which are externally imposed by providers, such as creditors or amounts constrained due to constitutional provisions or enabling legislation.

- Committed – Includes fund balance amounts that are constrained for specific purposes that are internally imposed by the government through formal action of the highest level of decision making authority and does not lapse at year-end.

- Assigned – Includes fund balance amounts that are intended to be used for specific purposes that are neither considered, restricted, or committed. Fund Balance may be assigned by the City Council.

- Unassigned – Includes positive fund balance within the General Fund which has not been classified within the above mentioned categories and negative fund balances in other governmental funds.

The City uses *restricted/committed* amounts first when both restricted and unrestricted fund balance is available unless there are legal documents/contracts that prohibit doing this, such as a grant agreement requiring dollar for dollar spending. Additionally, the government would first use *committed, then assigned, and lastly unassigned* amounts of unrestricted fund balance when expenditures are made.

The City does have a formal minimum fund balance policy.

A schedule of fund balances is provided as follows:

CITY OF BRANDON
DISCLOSURE OF FUND BALANCES REPORTED ON BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2014

Fund Balances:	General Fund	Street Maintenance Fund	TIF Hemlock Blvd Debt Service Fund	Other Non-Major Governmental Funds	Total Governmental Funds
Nonspendable:					
Inventory	$ 34,861.47	$	$	$	34,861.47
Prepaid Expenses	493.00				493.00
SDPAA Insurance Pool	35,276.56				35,276.56
Restricted for:					
Debt Service				312,943.88	312,943.88
Capital Improvement and Debt Service				362,665.86	362,665.86
Community Development				689,286.46	689,286.46
Committed					
Street Maintenance		168,629.00			168,629.00
Assigned:					
For Next Year's Budget	531,478.00				531,478.00
Unassigned	2,410,489.42		(341,922.11)	(98,037.38)	1,970,529.93
Total Fund Balances	$ 3,012,598.45	$ 168,629.00	$ (341,922.11)	$ 1,266,858.82	$ 4,106,164.16

Proprietary fund equity is classified the same as in the government-wide financial statements.

NOTE 2 - Deficit Fund Balances/Net Position of Individual Nonmajor Funds:

As of December 31, 2014, the following individual nonmajor funds had deficit fund balance/net position in the amounts shown:

2006 TIF Special Revenue Fund	$ (65,388.31)
TIF Convention Debt Service	(16,484.35)
Capital Projects	(16,164.72)
Total Deficit Balances	$ (98,037.38)

In the future, the Governing Board plans to transfer money from the General Fund to correct negative fund balances.

NOTE 3 - Deposits and Investments Credit Risk, Concentrations of Credit Risk and Interest Rate Risk

The City follows the practice of aggregating the cash assets of various funds to maximize cash management efficiency and returns. Statutes impose various restrictions on deposits and investments. These restrictions are summarized below:

Deposits - The City's cash deposits are made in qualified public depositories as defined by SDCL 4-6A-1, 7-20-1, 7-20-1.1 and 7-20-1.2, and may be in the form of demand or time deposits. Qualified depositories are required by SDCL 4-6A-3 to maintain at all times, segregated from their other assets, eligible collateral having a value equal to at least 100 percent of the public deposit accounts which exceed deposit insurance such as the FDIC and NCUA. In lieu of pledging eligible securities, a qualified public depository may furnish irrevocable standby letters of credit issued by Federal Home Loan Banks accompanied by written evidence of that bank's public debt rating which may not be less than "AA" or a qualified public depository may furnish a corporate surety bond of a corporation authorized to do business in South Dakota.

Investments – In general, SDCL 4-5-6 permits City funds to be invested only in (a) securities of the United States and securities guaranteed by the United States Government either directly or indirectly; or (b) repurchase agreements fully collateralized by securities described in (a) above; or in shares of an open-end, no-load fund administered by an investment company whose investments are in securities described in (a) above and repurchase agreements described in (b) above. Also, SDCL 4-5-9 requires investments to be in the physical custody of the political subdivision or may be deposited in a safekeeping account with any bank or trust company designated by the political subdivision as its fiscal agent.

Credit Risk - State law limits eligible investments for the City, as discussed above. The City has no investment policy that would further limit its investment choices.

Interest Rate Risk - The City does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Concentration of Investment -The City places no limit on the amount that may be invested in any one issuer.

Deposits are reported at cost, plus interest, if the account is of the add-on type.

Assignment of Investment Income - State law allows income from deposits and investments to be credited to either the General Fund or the fund making the investment. The City's policy is to credit all income from deposits and investments to the fund making the investment.

NOTE 4 - Receivables and Payables

Receivables and payables are not aggregated in these financial statements. The City expects all receivables to be collected within one year, except for $304,058.57 of receivables related to economic development loans to qualifying businesses reported in the General Fund. This is a summary of Economic Development Loans receivable as of December 31, 2014:

Year Ended Dec 31,	R & T Unit Can 2011 Revolving Loan Fund	Corson Village 2011 Revolving Loan Fund	Marman Energy 2014 Revolving Loan Fund	Total
2015	$ 5,997.68	$ 461.94	$ 10,442.76	$ 16,902.38
2016	6,180.11		10,653.55	16,833.66
2017	6,368.08		10,868.61	17,236.69
2018	6,561.77		11,087.95	17,649.72
2019	6,761.35		11,311.79	18,073.14
Thereafter	47,174.34		187,091.02	234,265.36
Total	$ 79,043.33	$ 461.94	$ 241,455.68	$ 320,960.95

NOTE 5 - Inventory

Inventory in the General Fund consists of expendable supplies held for consumption. Supply inventories are recorded at cost.

Inventory acquired for resale in the proprietary funds is recorded as an asset when acquired. The consumption of inventories held for resale is charged to expense as it is consumed. Inventories held for resale are recorded at the lower of cost or market, on the first-in, first-out cost flow assumption.

Government-wide Financial Statements:

In the government-wide financial statements, inventory is recorded as an asset at the time of purchase, and charged to expense as it is consumed.

Fund Financial Statements:

In the fund financial statements, purchases of supply inventory items are recorded as an expenditure at the time individual inventory items are purchased. Reported inventories are equally offset by nonspendable fund balance which indicates that they do not constitute "available spendable resources" even though they are a component of net current assets.

NOTE 6 – Property Taxes

Property taxes are levied on or before October 1, of the year preceding the start of the fiscal year. They attach as an enforceable lien on property, and become due and payable as of the following January 1, the first day of the fiscal year. Taxes are payable in two installments on or before April 30 and October 31 of the fiscal year.

The City is permitted by several state statutes to levy varying amounts of taxes per $1,000 of taxable valuation on taxable real property in the City.

NOTE 7 – Changes in General Capital Assets

A summary of changes in capital assets for the year ended December 31, 2014 are as follows:

Governmental Activities:	Balance 01/01/14	Increases	Decreases	Balance 12/31/14
Capital Assets, not being Depreciated:				
Land	$ 1,602,615.48	$ 7,182.00	$	$ 1,609,797.48
Construction Work in Progress	15,428.80	117,848.31	(15,428.80)	117,848.31
Total Capital Assets, not being Depreciated	1,618,044.28	125,030.31	(15,428.80)	1,727,645.79
Capital Assets, being Depreciated:				
Buildings	4,328,919.36		(166.66)	4,328,752.70
Improvements Other than Buildings	18,570,741.09	154,483.88		18,725,224.97
Machinery and Equipment*	2,092,011.60	179,020.50	(94,819.06)	2,176,213.04
TOTAL	24,991,672.05	333,504.38	(94,985.72)	25,230,190.71
Less Accumulated Depreciation for:				
Buildings	951,898.30	95,662.58	(166.66)	1,047,394.22
Improvements Other Than Buildings	4,320,688.67	731,183.95		5,051,872.62
Machinery and Equipment	1,198,938.56	161,813.07	(91,489.68)	1,269,261.95
Total Accumulated Depreciation	6,471,525.53	988,659.60	(91,656.34)	7,368,528.79
Total Governmental Activities Capital Assets being Depreciated, Net	18,520,146.52	(655,155.22)	(3,329.38)	17,861,661.92
Governmental Activities Capital Assets, Net	**$ 20,138,190.80**	**$ (530,124.91)**	**$ (18,758.18)**	**$ 19,589,307.71**

Depreciation Expense was charged to functions as follows:

Governmental Activities:	
General Government	$ 24,769.77
Public Safety	76,545.01
Public Works	689,015.65
Culture and Recreation	198,329.17
Total Depreciation Expense-Governmental Activities	$ 988,659.60

	Balance 1/1/2014	Increases	Decreases	Balance 12/31/2014
Business-Type Activities:				
Capital Assets, not being Depreciated:				
Land	$ 1,719,941.10	$	$	$ 1,719,941.10
CWIP	32,586.50	150,210.62	(3,854.05)	178,943.07
Total Capital Assets, not being Depreciated	1,752,527.60	150,210.62	(3,854.05)	1,898,884.17
Captial Assets, being Depreciated:				
Buildings	4,172,064.60		(1,999.17)	4,170,065.43
Improvements Other than Buildings	17,273,317.20	678,524.73		17,951,841.93
Machinery and Equipment	2,399,652.80	116,963.50	(20,090.98)	2,496,525.32
TOTAL	23,845,034.60	795,488.23	(22,090.15)	24,618,432.68
Less Accumulated Depreciation for:				
Buildings	1,512,494.52	94,808.96	(1,999.17)	1,605,304.31
Improvements Other Than Buildings	4,978,081.93	403,764.57		5,381,846.50
Machinery and Equipment	1,641,786.59	142,477.37	(20,090.98)	1,764,172.98
Total Accumulated Depreciation	8,132,363.04	641,050.90	(22,090.15)	8,751,323.79
Total Business-Type Activities Capital Assets being Depreciated, Net	15,712,671.56	154,437.33		15,867,108.89
Business-Type Activity Capital Assets, Net	**$ 17,465,199.16**	**$ 304,647.95**	**$ (3,854.05)**	**$ 17,765,993.06**

Depreciation Expense was charged to functions as follows:

Business-Type Activiites:	
Water	$ 309,313.47
Sewer	221,058.00
Golf Course	110,679.43
Total Depreciation Expense-Business-Type Activities	$ 641,050.90

Construction Work in Progress at December 31, 2014 is composed of the following:

Project Name	Project Authorization	Expended through 12/31/2014	Committed
Governmental Activities:			
Sunrise Park Shelter	$ 50,000.00	$ 37,683.59	$ 12,316.41
Pioneer Park Play Equipment	75,000.00	64,000.00	11,000.00
Sioux Blvd	1,850,000.00	6,838.92	1,843,161.08
Aspen Blvd	1,260,000.00	9,325.80	1,250,674.20
Total Governmental Activities	**3,235,000.00**	**117,848.31**	**3,117,151.69**
Business-Type Activities:			
Phase 4 - Sylvan Cir & Custer Parkway	380,000.00	4,559.28	375,440.72
Lift Station Rehabilitation	50,000.00	2,585.90	47,414.10
WW Treatment Facility	252,000.00	12,925.00	239,075.00
New Wells Project	3,862,000.00	158,872.89	3,703,127.11
Total Business-Type Activities	**4,544,000.00**	**178,943.07**	**4,365,056.93**
Total Governmental and Business-Type Activities	**$ 7,779,000.00**	**$ 296,791.38**	**$ 7,482,208.62**

NOTE 8 – Changes in Long-term Debt

A summary of the changes in long-term debt for the year ended December 31, 2014 is as follows:

Primary Government:	1/1/2014 Beginning Balance	Additions	Retired	12/31/2014 Ending Balance	Due within One Year
Governmental Activities:					
Bonds Payable - Revenue	$ 2,718,484.61	$	$ 194,362.09	$ 2,524,122.52	$ 197,522.56
State Revolving Funds	257,649.44		33,095.63	224,553.81	33,846.58
Note Payable	1,602,858.68		116,823.05	1,486,035.63	121,233.62
Special Assessments:	757,648.66		200,268.00	557,380.66	171,680.98
Accrued Compensated Absences-Governmental Funds	143,547.50	150,230.62	143,547.50	150,230.62	37,557.62
Total Governmental Activities	5,480,188.89	150,230.62	688,096.27	4,942,323.24	561,841.36
Business-Type Activities:					
Bonds Payable - Revenue	547,439.61		228,005.63	319,433.98	106,423.56
Notes Payable	32,946.01		32,946.01		
Certificates of Participation	981,011.23		103,101.33	877,909.90	108,153.29
Accrued Compensated Absences-Business-Type Funds	120,397.84	108,076.60	120,397.84	108,076.60	27,019.60
Total Business-Type Activities	1,681,794.69	108,076.60	484,450.81	1,305,420.48	241,596.45
Total Primary Government	$ 7,161,983.58	$ 258,307.22	$ 1,172,547.08	$ 6,247,743.72	$ 803,437.81

Debt payable at December 31, 2014 is comprised of the following:

	General Long-Term Debt	Enterprise Funds
Certificates of Participation		
2002 Golf Course Improvement Certificates--with a varying interest rate of 3.95% to 6.25% depending on time to maturity. Final Maturity Date of December 2021, Retired by the Golf Course Fund.		$ 877,909.90
Revenue Bonds		
Sales Tax Revenue Bond--Series 2005A, 5.00% interest, Final Maturity Date of September 2035, Retired by the General Fund.	$ 464,286.94	
Sales Tax Revenue Bond--Series 2005B, 4.25% interest, Final Maturity Date of October 2035, Retired by the General Fund.	456,971.69	
Sales Tax Revenue Bond--Series 2007, 6.00% interest, Final Maturity Date of September 2023, Retired by the General Fund.	1,602,863.89	
Water Improvement Revenue Bonds--Series 1999, 5.0% interest, Final Maturity Date of December 2015, Retired by Water Fund.		43,411.33
Sales Tax Revenue Bond--Series 2008, 6.00% interest, Final Maturity Date of September 2018, Retired by the Water Fund.		276,022.65
TOTAL REVENUE BONDS	$2,524,122.52	$ 319,433.98
State Revolving Loan:		
State Revolving Fund Loan; 2.25% Interest, Final Maturity Date of January 15, 2021: Retired by the General Fund.	$ 224,553.81	

	General Long-Term Debt	Enterprise Funds
Special Assessment Bonds		
Chestnut Blvd. Special Assessment Bond-Series 2006, 5.0% interest. Final Maturity date of September 2016, Retired by Debt Service Fund	115,000.00	
Chestnut Blvd. 2007 Sp. Assessment Bond-Series 2007, 5.0% interest. Final Maturity date of September 2017, Retired by Debt Service Fund	194,331.74	
NE Lift & Express 2008 Sp. Assessment Bond-Series 2008, 4.5% interest. Final Maturity date of September 2018, Retired by Debt Service Fund	100,962.50	
Country Club Heights Sp. Assessment Bond-Series 2009, 4.75% interest. Final Maturity date of March 2019, Retired by Debt Service Fund	147,086.42	
TOTAL SPECIAL ASSESSMENT BONDS	$ 557,380.66	

The City of Brandon agrees that it will, at the expiration of the terms of these issues, or upon earlier call, retire any bonds not normally retired from the proceeds of the special assessments pledged for the retirement of the bonds.

Note Payable		
2006 TIF Note --4% interest rate, Final date of maturity December 2025, Retired from TIF Special Revenue and Debt Service Funds.	$ 937,259.87	$
2009 TIF Note --415% interest rate, Final date of maturity June 2024, Retired from TIF Special Revenue and Debt Service Funds.	548,775.76	
TOTAL OF NOTES PAYABLE	$ 1,486,035.63	$
Accumulated Liability for Unused Vacation and Sick Leave. Payments to be made by the funds that payroll expenditures are charged to.	$ 150,230.62	$ 108,076.60

The annual requirements to amortize all debt outstanding as of December 31, 2014, except for compensated absences, but including interest payments of $1,097,354 are as follows:

Year Ended Dec 31,	Revenue Bonds		State Revolving Loan		Special Assessments	
	Principal	Interest	Principal	Interest	Principal	Interest
2015	303,946	74,463	33,847	4,768	171,681	21,796
2016	267,607	66,875	34,615	4,000	181,466	11,500
2017	274,990	59,492	35,400	3,215	126,462	6,195
2018	282,700	51,780	36,203	2,412	60,235	1,854
2019	210,933	44,906	37,025	1,590	17,537	317
2020-2024	920,947	169,915	47,465	804		
2025-2029	231,911	105,624				
2030-2034	287,007	50,528				
2035-2039	63,515	1,097				
Total	**2,843,557**	**624,680**	**224,554**	**16,789**	**557,381**	**41,662**

Year Ended Dec 31,	Certificates of Participation		Note Payable		Total	
	Principal	Interest	Principal	Interest	Principal	Interest
2015	108,153	17,997	121,234	53,545	738,861	172,569
2016	113,453	15,780	125,681	49,098	722,822	147,253
2017	119,012	13,454	130,292	44,486	686,156	126,842
2018	124,844	11,015	135,074	39,704	639,056	106,765
2019	130,961	8,455	140,033	34,745	536,489	90,013
2020-2024	281,487	8,725	781,219	112,850	2,031,118	292,294
2025-2029			52,504	887	284,415	106,511
2030-2034					287,007	50,528
2035-2039					63,515	1,097
Total	**877,910**	**75,426**	**1,486,037**	**335,315**	**5,989,439**	**1,093,872**

NOTE 9 – Wastewater Agreement

In November 1994, the City of Brandon entered into a 20-year agreement with the City of Sioux Falls to obtain wastewater treatment services. An annual administrative fee of $2,000 is paid by the City of Brandon to the City of Sioux Falls along with a 2014 rate of $3.89 per 1000 gallons of volume of wastewater discharged from the sewer system of Brandon into the Sioux Falls Wastewater Treatment Facility. The annual administrative fee is for the role of implementation and enforcement of an Industrial Pretreatment Program on industrial users in Brandon. Payments are made from the city's Sewer Fund.

NOTE 10 – Restricted Net Position

Restricted net position for the year ended December 31, 2014 was as follows:

Debt Service Funds	$ 940,992.63
Capital Improvement and Debt Service Funds	531,295.18
Community Development	689,286.46
SDPAA Contribution	35,276.56
Total Restricted Net Position	$ 2,196,850.83

These balances are restricted due to federal grant and statutory requirements.

NOTE 11 – Retirement Plan

All employees, except for part-time employees, participate in the South Dakota Retirement System (SDRS), a cost-sharing, multiple employer public employee retirement system established to provide retirement benefits for employees of the State of South Dakota and its political subdivisions. The SDRS provides retirement, disability and survivor's benefits. The right to receive retirement benefits vests after three years of credited service. Authority for establishing, administering and amending plan provisions are found in South Dakota Codified Law 3-12. The SDRS issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the SDRS, PO Box 1098, Pierre, SD 57501-1098 or by calling (605) 773-3731.

General employees are required by state statute to contribute 6 percent of their salary to the plan, while public safety and judicial employees contribute at 8 percent and 9 percent. State statue also requires the employer to contribute an amount equal to the employee's contribution. State statute also requires the employer to make an additional contribution in the amount of 6.2 percent for any compensation exceeding the maximum taxable amount for social security for general employees only. The city's share of contributions to the SDRS for the fiscal years ended December 31, 2014, 2013, and 2012 were $122,454.78, $116,050.67, and $113,831.74 respectively, equal to the required contributions each year.

NOTE 12 – Risk Management

The city is exposed to various risks of loss related to tort; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. During the period ended December 31, 2014, the city managed its risks as follows:

Employee Health Insurance:
The city purchases health insurance for its employees from a commercial insurance carrier. Settled results from these risks have not exceeded the liability coverage during the past three years.

Liability Insurance:
The City joined the South Dakota Public Assurance Alliance, a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The objective of the SDPAA is to administer and provide risk management services and risk sharing facilities to the members and to defend and protect the members against liability, to advise members on loss control guidelines and procedures, and provide them with risk management services, loss control and risk reduction information and to obtain lower costs for that coverage. The Municipality's responsibility is to promptly report to and cooperate with the SDPAA to resolve any incident which could result in a claim being made by or against the City. The City pays an annual premium, to provide liability coverage detailed below, under a claims-made policy and the premiums are accrued based on the ultimate cost of the experience to date of the SDPAA member, based on their exposure or type of coverage. The City pays an annual premium to the pool to provide coverage for torts, thefts, errors and omissions, automobile and general liability.

The agreement with the South Dakota Public Assurance Alliance provides that the above coverage will be provided up to a $2,000,000 limit. Member premiums are used by the pool for payment of claims and to pay for reinsurance for claims in excess of $250,000 for property coverage and $500,000 for liability coverage to the upper limit. A portion of the member premiums are also allocated to a cumulative reserve fund. The City would be eligible to receive a refund for a percentage of the amount allocated to the cumulative reserve fund on the following basis:

End of City's First Full Year	50%
End of City's Second Full Year	60%
End of City's Third Full Year	70%
End of City's Fourth Full Year	80%
End of City's Fifth Full Year	90%
End of City's Sixth Full Year and Thereafter	100%

As of December 31, 2014, the City has a vested balance in the cumulative reserve fund of $35,276.56.

Worker's Compensation:
The city joined the South Dakota City League Worker's Compensation Fund, a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The objective of the Fund is to formulate, develop, and administer, on the behalf of the member organizations, a program of worker's compensation coverage, to obtain lower costs for that coverage, and develop a comprehensive loss control program. The City's responsibility is to initiate and maintain a safety program to give its employees safe and sanitary working conditions and to promptly report to and cooperate with the Fund to resolve any worker's compensation claims. The City pays an annual premium, to provide worker's compensation coverage for its employees, under a self-funded program and the premiums are accrued based on the ultimate cost of the experience to date of the Fund members. Coverage limits are set by state statute. The pool pays the first $650,000 of any claim per individual. The pool has reinsurance, which covers up to an additional $2,000,000 per individual per incident.

The City does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have never exceeded the liability coverage.

Unemployment Benefits
The city provides coverage for unemployment benefits by paying into the Unemployment Compensation Fund established by state law and managed by the State of South Dakota.

NOTE 13 – Individual Fund Interfund Receivable and Payable Balances:

Interfund receivable and payable balances at December 31, 2014 were:

Fund	Interfund Receivable	Interfund Payable
General Fund	$	$ 1,175,000.00
Special Revenue Funds:		
2006 TIF Special Revenue Fund		69,092.31
Debt Service Funds:		
TIF Hemlock Blvd. Debt Service Fund		341,922.11
TIF Convention Center Debt Service Fund		16,484.35
		358,406.46
Water Fund	1,602,498.77	
	$ 1,602,498.77	$ 1,602,498.77

The purposes for the interfund receivable and payable balances are to correct negative fund balances and help with cash flow.

The City expects all interfund receivables and payables to be repaid within one year (except for the General Fund payable of $1,175,000.00, which will be paid by December 2022 per promissory note; and $68,137.14 for the TIF Hemlock Blvd. Debt Service payable, which will be paid by December 2018 per promissory note.)

NOTE 14 – Interfund Transfers

Interfund transfers for the year ended December 31, 2014 were as follows:

	Transfers To:				
	General Fund	Aggregate Other Governmental Funds	Golf Course Fund	Nonmajor Enterprise Fund	
Transfers From:					Total
Water Fund	$ 15,705.00	$	$	$	$ 15,705.00
Sewer Fund	1,102.00				1,102.00
General Fund		24,615.61	35,568.55	9,410.26	69,594.42
	$ 16,807.00	$ 24,615.61	$ 35,568.55	$ 9,410.26	$ 86,401.42

The City typically budgets transfers of money to conduct the indispensable functions of the City and to close out old debt service and capital project funds.

NOTE 15 – Significant Contingencies-Litigation

At December 31, 2014, the City was not involved in any litigation.

REQUIRED SUPPLEMENTARY INFORMATION
CITY OF BRANDON
BUDGETARY COMPARISON SCHEDULE-BUGETARY BASIS
GENERAL FUND
DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Revenues:				
Taxes:				
General Property Taxes	$ 2,165,099.00	$ 2,165,099.00	$ 2,180,356.92	$ 15,257.92
General Sales and Use Taxes	1,950,000.00	1,950,000.00	2,816,417.53	866,417.53
Amusement Taxes	800.00	800.00	792.00	(8.00)
Penalties and Interest on Delinquent Taxes	2,500.00	2,500.00	4,733.49	2,233.49
Licenses and Permits	77,035.00	77,035.00	115,406.00	38,371.00
Intergovernmental Revenue:				
Federal Grants	84,470.00	84,470.00	137,124.61	52,654.61
State Grants	15,795.00	15,795.00	3,488.00	(12,307.00)
State Shared Revenue:				
Bank Franchise Tax	15,000.00	15,000.00	28,481.20	13,481.20
Liquor Tax Reversion	33,000.00	33,000.00	39,361.25	6,361.25
Motor Vehicle Licenses (5%)	30,000.00	30,000.00	40,449.67	10,449.67
Local Government Highway and Bridge Fund	45,000.00	45,000.00	56,851.07	11,851.07
Other	3,000.00	3,000.00	4,867.64	1,867.64
County Shared Revenue:				
County Wheel Tax	8,000.00	8,000.00	9,042.92	1,042.92
Charges for Goods and Services:				
General Government	1,100.00	1,100.00	2,825.00	1,725.00
Public Safety	40,200.00	40,200.00	40,506.00	306.00
Sanitation	2,500.00	2,500.00	3,089.00	589.00
Health	100.00	100.00	225.00	125.00
Culture and Recreation	122,181.00	122,181.00	145,585.69	23,404.69
Other	80,330.00	80,330.00	72,623.81	(7,706.19)
Fines and Forfeits:				
Court Fines and Costs	6,500.00	6,500.00	8,459.75	1,959.75
Miscellaneous Revenue:				
Investment Earnings	1,000.00	1,000.00	2,361.36	1,361.36
Rentals	95.00	95.00	95.00	
Special Assessments	15,533.00	15,533.00	24,174.46	8,641.46
Street Assessments			2,579.11	2,579.11
Contributions and Donations from Private Sources	25,000.00	25,000.00	18,922.00	(6,078.00)
Other	11,500.00	11,500.00	18,591.16	7,091.16
Total Revenue	4,735,738.00	4,735,738.00	5,777,409.64	1,041,671.64

REQUIRED SUPPLEMENTARY INFORMATION
CITY OF BRANDON
BUDGETARY COMPARISON SCHEDULE-BUGETARY BASIS
GENERAL FUND
DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Expenditures:				
General Government:				
Legislative	133,371.00	134,371.00	123,537.18	10,833.82
Executive	225,460.00	225,460.00	214,912.94	10,547.06
Elections	896.00	896.00	702.59	193.41
Financial Administration	233,827.00	246,327.00	227,031.01	19,295.99
Other	72,125.00	72,125.00	64,554.84	7,570.16
Total General Government	665,679.00	679,179.00	630,738.56	48,440.44
Public Safety:				
Police	1,263,224.00	1,263,224.00	1,167,951.25	95,272.75
Fire	209,082.00	209,082.00	203,533.60	5,548.40
Protective Inspection	179,287.00	179,287.00	148,004.18	31,282.82
Other Protection	27,000.00	27,000.00	15,895.13	11,104.87
Total Public Safety	1,678,593.00	1,678,593.00	1,535,384.16	143,208.84
Public Works:				
Highways and Streets	632,569.00	688,794.00	579,490.01	109,303.99
Sanitation	6,350.00	6,350.00	4,558.75	1,791.25
Transit	155,407.00	173,207.00	173,577.76	(370.76)
Total Public Works	794,326.00	868,351.00	757,626.52	110,724.48
Health and Welfare	9,900.00	12,400.00	10,817.18	1,582.82
Culture and Recreation:				
Recreation	194,420.00	194,420.00	175,575.53	18,844.47
Parks	585,028.00	597,328.00	511,276.57	86,051.43
Libraries	10,000.00	10,000.00	100.00	9,900.00
Total Culture and Recreation	789,448.00	801,748.00	686,952.10	114,795.90
Conservation and Development:				
Economic Development and Assistance (Industrial Development)				
Total Conservation and Development	335,077.00	340,077.00	338,652.09	1,424.91
Debt Service	634,827.00	399,827.00	399,821.60	5.40
Contingency	75,000.00	36,200.00		36,200.00
Total Expenditures	4,982,850.00	4,816,375.00	4,359,992.21	456,382.79
Excess of Revenue Over (Under) Expenditures	(247,112.00)	(80,637.00)	1,417,417.43	1,498,054.43
Other Financing Sources (Uses):				
Transfers In	16,807.00	16,807.00	16,807.00	
Transfers (Out)	(6,410.00)	(259,635.00)	(69,594.42)	190,040.58
Sale of Municipal Property			6,334.20	6,334.20
Compensation for Loss/ Damage to Capital Assets			500.00	500.00
Total Other Financing Sources (Uses)	10,397.00	(242,828.00)	(45,953.22)	196,874.78
Net Change in Fund Balances	(236,715.00)	(323,465.00)	1,371,464.21	1,694,929.21
Net Change in Nonspendable Fund Balance			15,459.00	15,459.00
Fund Balance - Beginning Balance	1,625,675.24	1,625,675.24	1,625,675.24	
FUND BALANCE - ENDING	$1,388,960.24	$1,302,210.24	$3,012,598.45	$1,710,388.21

REQUIRED SUPPLEMENTARY INFORMATION
CITY OF BRANDON
BUDGETARY COMPARISON SCHEDULE-BUGETARY BASIS
STREET MAINTENANCE FUND
DECEMBER 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Revenues:				
Miscellaneous Revenue:				
Investment Earnings	$	$	$ 31.80	$ 31.80
Special Assessments	280,000.00	280,000.00	280,949.93	949.93
Total Revenue	280,000.00	280,000.00	280,981.73	981.73
Expenditures:				
Capital Outlay	200,000.00	200,000.00	112,352.41	87,647.59
Total Expenditures			112,352.41	87,647.59
Excess of Revenue Over (Under) Expenditures	280,000.00	280,000.00	168,629.32	88,629.32
Fund Balance - Beginning Balance				
FUND BALANCE - ENDING	$ 280,000.00	$ 280,000.00	$ 168,629.32	$ 88,629.32

CITY OF BRANDON
NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
Schedules of Budgetary Comparisons for the General Fund
and for each major Special Revenue Fund with a legally required budget

Note 1: Budgets and Budgetary Accounting:

The City follows these procedures in establishing the budgetary data reflected in the financial statements:

1. At the first regular board meeting in September of each year or within ten days thereafter, the Governing Board/City Commission introduces the annual appropriation ordinance for the ensuing fiscal year.

2. After adoption by the Governing Board/City Commission, the operating budget is legally binding and actual expenditures for each purpose cannot exceed the amounts budgeted, except as indicated in number 4.

3. A line item for contingencies may be included in the annual budget. Such a line item may not exceed 5 percent of the total municipal budget and may be transferred by the resolution of the Governing Board/City Commission to any other budget category that is deemed insufficient during the year.

4. If it is determined during the year that sufficient amounts have not been budgeted, state statute allows the adoption of supplemental budgets.

5. Unexpended appropriations lapse at year-end unless encumbered by the resolution of the Governing Board/City Commission.

   Encumbrances accounting, under which purchase orders, contracts, and other commitments for the expenditure of monies are recorded in order to reserve that portion of the applicable appropriation, is employed as an extension of formal budgetary integration in the General Fund, special revenue fund, and capital projects funds.

6. Formal budgetary integration is employed as a management control device during the year for the General Fund, special revenue funds and capital project funds.

7. Budgets for the General Fund are adopted on a basis consistent with accounting principles generally accepted in the United States of America (USGAAP).

Note 2: GAAP/ Budgetary Accounting Basis Differences

The financial statements prepared in conformity with USGAAP present capital outlay expenditure information in a separate category of expenditures. Under the budgetary basis of accounting, capital outlay expenditures are reported within the function to which they relate. For example, the purchase of a new fire truck would be reported as a capital outlay expenditure on the Governmental Funds Statement of Revenues, Expenditures and Changes in Fund Balances, however in the Budgetary RSI Schedule, the purchase of a fire truck would be reported as an expenditure of the Public Safety/Fire Department function of government, along with all other current Fire Department related expenditures.

CITY OF BRANDON
COMBINING BALANCE SHEET
NONMAJOR GOVERNMENTAL FUNDS
DECEMBER 31, 2014

	Special Revenue Nonmajor Governmental Funds	Debt Service Nonmajor Governmental Funds	Capital Projects Nonmajor Governmental Funds	Total Nonmajor Governmental Funds
ASSETS:				
Cash and Cash Equivalents	$ 557,362.09	$ 308,754.18	$	$ 866,116.27
Accounts Receivable	3,704.00			3,704.00
Special Assessments Receivable--Current		111,774.24		111,774.24
Special Assessments Receivable--Deferred		221,751.01		221,751.01
Notes Receivable-Current	16,902.38			16,902.38
Notes Receivable-Noncurrent	304,058.57			304,058.57
Due from Government	3,273.21			3,273.21
Investments	170,356.07	4,189.70		174,545.77
TOTAL ASSETS	1,055,656.32	646,469.13		1,702,125.45
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:				
Liabilities:				
Accounts Payable			16,164.72	16,164.72
Due to Other Fund		16,484.35		16,484.35
Advances From Water Fund	69,092.31			69,092.31
Total Liabilities	69,092.31	16,484.35	16,164.72	101,741.38
Deferred Inflows of Resources:				
Unavailable Revenue--Special Assessments		333,525.25		333,525.25
Total Deferred Inflows of Resources		333,525.25		333,525.25
Fund Balances:				
Restricted	1,051,952.32	312,943.88		1,364,896.20
Unassigned	(65,388.31)	(16,484.35)	(16,164.72)	(98,037.38)
Total Fund Balances	986,564.01	296,459.53	(16,164.72)	1,266,858.82
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 1,055,656.32	$ 646,469.13	$	$ 1,702,125.45

CITY OF BRANDON
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES
IN FUND BALANCES-NONMAJOR GOVERNMENTAL FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	Special Revenue Nonmajor Governmental Funds	Debt Service Nonmajor Governmental Funds	Capital Projects Nonmajor Governmental Fund	Total Nonmajor Governmental Funds
Revenues:				
Taxes:				
General Property Taxes	$	$ 178,269.13	$	$ 178,269.13
General Sales and Use Tax	195,276.47			195,276.47
Gross Receipts Business Tax	56,296.00			56,296.00
Miscellaneous Revenue:				
Interest Earnings	7,022.07	202.41		7,224.48
Special Assessments		148,961.72		148,961.72
Total Revenue	258,594.54	327,433.26		586,027.80
Expenditures:				
General Government:				
Other	99,767.96			99,767.96
Conservation and Development:				
Economic Development and Assistance	467.50			467.50
Debt Service	47,517.94	290,761.90		338,279.84
Capital Outlay			16,164.72	16,164.72
Total Expenditures	147,753.40	290,761.90	16,164.72	454,680.02
Excess of Revenue Over (Under) Expenditures	110,841.14	36,671.36	(16,164.72)	131,347.78
Other Financing Sources (Uses)				
Transfers In		24,615.61		24,615.61
Total Other Financing Sources (Uses)		24,615.61		24,615.61
Net Change in Fund Balances	110,841.14	61,286.97	(16,164.72)	155,963.39
Fund Balance - January 1, 2014	875,722.87	235,172.56		1,110,895.43
FUND BALANCE - December 31, 2014	$ 986,564.01	$ 296,459.53	$ (16,164.72)	$1,266,858.82

CITY OF BRANDON
COMBINING BALANCE SHEET
SPECIAL REVENUE NONMAJOR GOVERNMENTAL FUNDS
DECEMBER 31, 2014

	Third Cent Sales Tax Fund	2006 TIF Special Revenue Fund	Brandon Revolving Loan Fund	Total
ASSETS:				
Cash and Cash Equivalents	$ 353,194.23	$	$ 204,167.86	$ 557,362.09
Accounts Receivable		3,704.00		3,704.00
Notes Receivable-Current			16,902.38	16,902.38
Notes Receivable-Noncurrent			304,058.57	304,058.57
Due From Government	3,273.21			3,273.21
Investments	6,198.42		164,157.65	170,356.07
TOTAL ASSETS	362,665.86	3,704.00	689,286.46	1,055,656.32
LIABILITIES AND FUND BALANCES:				
Liabilities:				
Advance From Other Fund		69,092.31		69,092.31
Total Liabilities		69,092.31		69,092.31
Fund Balances:				
Restricted	362,665.86		689,286.46	1,051,952.32
Unassigned		(65,388.31)		(65,388.31)
Total Fund Balances	362,665.86	(65,388.31)	689,286.46	986,564.01
TOTAL LIABILITIES AND FUND BALANCES	$ 362,665.86	$ 3,704.00	$ 689,286.46	$ 1,055,656.32

CITY OF BRANDON
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES
SPECIAL REVENUE NONMAJOR GOVERNMENTAL FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	Third Cent Sales Tax Fund	2006 TIF Special Revenue Fund	Brandon Revolving Loan Fund	Total
Revenues:				
Taxes:				
General Sales and Use Tax	$ 195,276.47	$	$	$ 195,276.47
Other Tax		56,296.00		56,296.00
Miscellaneous Revenue:				
Interest Earnings	178.68		6,843.39	7,022.07
Total Revenue	195,455.15	56,296.00	6,843.39	258,594.54
Expenditures:				
General Government:				
Other	99,767.96			99,767.96
Conservation and Development:				
Economic Development and Assistance			467.50	467.50
Debt Service		47,517.94		47,517.94
Total Expenditures	99,767.96	47,517.94	467.50	147,753.40
Net Change in Fund Balances	95,687.19	8,778.06	6,375.89	110,841.14
Fund Balance - January 1, 2014	266,978.67	(74,166.37)	682,910.57	875,722.87
FUND BALANCE - December 31, 2014	$ 362,665.86	$ (65,388.31)	$ 689,286.46	$ 986,564.01

CITY OF BRANDON
COMBINING BALANCE SHEET
DEBT SERVICE NONMAJOR GOVERNMENTAL FUNDS
DECEMBER 31, 2014

	TIF Debt Service Fund	Park Street Special Assessment Debt Service Fund	Chestnut Blvd Debt Service Fund	Chestnut Blvd Mid Debt Service Fund	Expr Ave/ FC Lift Debt Service Fund	TIF Covention Center Debt Service Fund	CC Heights Debt Service Fund	Total
ASSETS:								
Cash and Cash Equivalents	$149,121.77	$	$ 19,799.81	$	$ 85,086.53	$	$ 54,746.07	$ 308,754.18
Special Assessments Receivable--Current		28,049.48	34,098.35	31,571.67	3,808.61		14,246.13	111,774.24
Special Assessments Receivable--Deferred		56,098.96	34,098.36	63,143.34	11,425.83		56,984.52	221,751.01
Investments	2,225.02		1,247.20		564.10		153.38	4,189.70
TOTAL ASSETS	151,346.79	84,148.44	89,243.72	94,715.01	100,885.07		126,130.10	646,469.13
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:								
Liabilities:								
Due to Other Fund						16,484.35		16,484.35
Total Liabilities						16,484.35		16,484.35
Deferred Inflows of Resources:								
Unavailable Revenue--Special Assessments		84,148.44	68,196.71	94,715.01	15,234.44		71,230.65	333,525.25
Total Deferred Inflows of Resources		84,148.44	68,196.71	94,715.01	15,234.44		71,230.65	333,525.25
Fund Balances:								
Restricted	151,346.79		21,047.01		85,650.63		54,899.45	312,943.88
Unassigned						(16,484.35)		(16,484.35)
Total Fund Balances	151,346.79		21,047.01		85,650.63	(16,484.35)	54,899.45	296,459.53
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$151,346.79	$ 84,148.44	$ 89,243.72	$ 94,715.01	$100,885.07	$	$126,130.10	$ 646,469.13

CITY OF BRANDON
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES
IN FUND BALANCES- DEBT SERVICE NONMAJOR GOVERNMENTAL FUNDS
FOR THE YEAR ENDED DECEMBER 31, 2014

	TIF Debt Service Fund	Park Street Special Assessment Debt Service Fund	Chestnut Blvd Debt Service Fund	Chestnut Blvd Mid Debt Service Fund	Expr Ave/ FC Lift Debt Service Fund	TIF Covention Center Debt Service Fund	CC Heights Debt Service Fund	Total
Revenues:								
Taxes:								
General Property Taxes	$ 104,466.69	$	$	$	$	$ 73,802.44	$	$ 178,269.13
Miscellaneous Revenue:								
Interest Earnings	51.85		34.57	6.11	64.81		45.07	202.41
Special Assessments		33,636.52	39,264.27	43,870.06	4,951.20		27,239.67	148,961.72
Total Revenue	104,518.54	33,636.52	39,298.84	43,876.17	5,016.01	73,802.44	27,284.74	327,433.26
Expenditures:								
Debt Service		40,069.57	58,332.50	70,561.84	26,407.69	59,263.94	36,126.36	290,761.90
Total Expenditures		40,069.57	58,332.50	70,561.84	26,407.69	59,263.94	36,126.36	290,761.90
Excess of Revenue Over (Under) Expenditures	104,518.54	(6,433.05)	(19,033.66)	(26,685.67)	(21,391.68)	14,539	(8,841.6200)	36,671.36
Other Financing Sources (Uses):								
Transfer In		6,433.05		18,182.56				24,615.61
Total Other Financing Sources (Uses):		6,433.05		18,182.56				24,615.61
Net Change in Fund Balances	104,518.54		(19,033.66)	(8,503.11)	(21,391.68)	14,538.50	(8,841.62)	61,286.97
Fund Balance - January 1, 2014	46,828.25		40,080.67	8,503.11	107,042.31	(31,022.85)	63,741.07	235,172.56
FUND BALANCE - DECEMBER 31, 2014	$151,346.79	$	$21,047.01	$	$ 85,650.63	$(16,484.35)	$ 54,899.45	$296,459.53

COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES- CAPITAL PROJECTS NONMAJOR GOVERNMENTAL FUNDS FOR THE YEAR ENDED DECEMBER 31, 2014

	Sioux Blvd Capital Projects Fund	Aspen Blvd Capital Projects Fund	Total Capital Projects Funds
Revenues:			
Miscellaneous Revenue:			
Special Assessments	$	$	$
Total Revenue			
Expenditures:			
Capital Outlay	6,838.92	9,325.80	16,164.72
Total Expenditures	6,838.92	9,325.80	16,164.72
Net Change in Fund Balances	(6,838.92)	(9,325.80)	(16,164.72)
Fund Balance - January 1, 2014			
FUND BALANCE - DECEMBER 31, 2014	$ (6,838.92)	$ (9,325.80)	$ (16,164.72)

QUAM & BERGLIN, P.C.
CERTIFIED PUBLIC ACCOUNTANTS
110 WEST MAIN - P.O. BOX 426
ELK POINT, SOUTH DAKOTA 57025
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(605) 356-3374

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

City Council
The City of Brandon
Minnehaha County, South Dakota

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Brandon, South Dakota, as of December 31, 2014, and for the year then ended, and the related notes to the financial statements, which collectively comprise the City of Brandon's basic financial statements and have issued our report thereon dated July 28, 2015.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the City's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City of Brandon's internal control over. Accordingly, we do not express an opinion on the effectiveness of the City of Brandon's internal control.

Our consideration of internal control was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses and significant deficiencies may exist that were not identified. However, as described in the accompanying Schedule of Current Audit Findings, we identified a certain deficiency in internal control over financial reporting that we consider to be a material weakness.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the City's financial statements will not be prevented, or detected and corrected on a timely basis. We consider the deficiency described in the accompanying Schedule of Current Audit Findings as item 2014-001 to be a material weakness.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, and contracts, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

City of Brandon, South Dakota's Response to Finding

The City of Brandon's response to the finding identified in our audit is on page 56. The City's response was not subjected to the auditing procedures applied in the audit of the financial statements and accordingly, we express no opinion on it.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the City's internal control or on compliance. The report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose. As required by South Dakota Codified Law 4-11-11 this report is a matter of public record and its distribution is not limited.

Quam & Berglin, P.C.

Quam and Berglin, P.C.
Certified Public Accountants

Elk Point, South Dakota

July 28, 2015

CITY OF BRANDON
SCHEDULE OF PRIOR AND CURRENT AUDIT FINDINGS
DECEMBER 31, 2014

STATUS OF PRIOR AUDIT FINDINGS:

The prior audit recommendation 2013-01 has not been corrected and is restated as Current Audit Finding Number 2014-001.

CURRENT AUDIT FINDINGS:

Internal Control-Related Findings – Material Weakness:

AUDIT FINDING NUMBER 2014-001:

There is a material weakness resulting from lack of segregation of duties for revenues and expenditures.

Criteria:
In order to achieve proper internal control, it is necessary to have segregation of duties provided between performance, review and record keeping of the tasks related to revenues. Lack of this segregation of duties could adversely affect the organization's ability to record, process, summarize and report financial data consistent with management assertions.

Condition, Cause and Effect:
A material weakness in internal control was reported due to lack of proper segregation of duties for revenues and expenditures resulting in decreased reliability of reported financial data and increased potential for the loss of public assets.

Recommendations:
We recommend that the City of Brandon officials be cognizant of this lack of segregation of duties for revenues and expenditures and attempt to provide compensating controls, whenever and wherever possible and practical.

Corrective Action Plan:
The City of Brandon's officials are aware of this problem, which is a result of the size of the entity which precludes staffing at a level sufficient to provide an ideal environment for internal controls. They have included a response to the finding on page 56.

CITY OF BRANDON
304 Main Avenue, P.O. Box 95, Brandon, SD 57005
Telephone: (605) 582-6515 FAX: (605) 582-6831
E-mail: bread@cityofbrandon.org

CITY OF BRANDON
304 MAIN AVE.
BRANDON, SD 57004

Corrective Action Plan
For the year ended December 31, 2014

The City of Brandon has considered the lack of segregation of duties for the revenue and expenditure functions.

At this time it is not cost efficient for the City of Brandon to hire additional staff needed to achieve segregation of duties. The City of Brandon has implemented alternate procedures, to decrease the likelihood that financial data is adversely affected.

Mayor

Finance Officer/City Administrator

Revenue

604 SEWER		Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
360	361.00 Interest	2,298	1,345	726	887	1,314	900	596	1,000	1,000	1,000	
360	363.06 Impact Fees	26,789	15,095	2,145	37,853	20,471	0	0	0	0	0	
360	369.00 Other	373	15	0	3,176	891	0	0	0	0	0	
360	369.02 Gas Refund	426	360	306	11	276	300	11	0	0	0	
360	369.03 Prior Year Expenditures	16	0	0	0	4	0	0	0	0	0	
380	381.992 Online Fee for pymt	434	629	744	905	678	700	578	2,300	2,300	2,300	
380	383.01 Sewer Charges	919,683	1,053,631	1,102,706	1,897,155	1,243,294	1,800,000	979,060	2,000,000	2,000,000	2,000,000	
380	383.09 Connection Fees	12,450	10,450	19,950	19,650	15,625	15,000	9,200	18,000	18,000	18,000	
360	363.01 SA Principle	0	0	0	0	0	1,001	1,001	1,001	1,001	1,001	Ironwood SA-8th Year of 10
360	363.02 SA Interest	240	210	180	150	195	240	120	100	100	100	
390	391.00 Long Term Debt - Bond	0	0	0	0	0	0	0	3,500,000	2,600,000	2,740,000	Lift Station
390	391.03 Sales of Fixed Assets	0	-871	0	24	-212	0	0	0	0	0	
390	391.04 Insurance Reimb	0	0	0	55,685	13,921	0	0	0	0	0	
390	391.07 Cost Recovery	13,820	4,542	2,096	5,939	6,599	0	0	0	0	0	
Totals Sewer		976,529	1,085,406	1,128,853	2,021,435	1,303,056	1,818,141	990,566	5,522,401	4,622,401	4,762,401	

Expenditures

604 SEWER FUND - ENTERPRISE FUND

	432.1 ADMINISTRATION	Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
	411.00 Wages	126,089	131,757	102,820	105,381	116,512	144,570	53,810	148,500	148,500	148,500	3 FTE, 8% OT
	412.00 Social Security	8,752	9,299	7,378	7,585	8,254	11,060	3,514	11,360	11,360	11,360	0.0765
	413.00 Retirement	7,565	7,906	6,221	6,271	6,991	8,674	2,947	8,910	8,910	8,910	0.06
	413.01 Supplemental Retirement	0	0	4,742	0	1,186	0	0	0	0	0	
	414.00 Workman's Comp	1,760	1,583	1,637	2,168	1,787	3,571	2,348	3,668	3,668	3,668	$2.47 per 100
	415.00 Health & Life Ins.	43,969	46,273	36,676	35,997	40,729	57,825	18,267	58,850	58,850	58,850	
	416.00 Unemployment Ins.	330	324	190	182	257	450	123	450	450	450	.01 x $15,000 wages - 3
	421.00 Insurance	6,540	6,272	6,960	7,301	6,768	7,823	6,933	7,625	7,625	7,625	
	422.00 Professional Services	3,736	16,359	27,817	7,729	13,910	6,000	280	5,000	45,000	45,000	Design 2017 Phase
	422.10 Credit Card Fees	627	1,013	1,214	1,803	1,164	1,300	1,066	2,500	2,500	2,500	
	425.00 Repairs	0	110	94	0	51	0	0	0	0	0	
	425.10 Hired Repairs	0	0	0	3,234	809	0	0	0	0	0	
	426.00 Supplies	3,080	1,938	1,820	2,401	2,310	5,000	358	7,500	7,500	7,500	
	426.10 Safety Supplies	0	2,296	3,027	661	1,496	2,500	0	2,500	2,500	2,500	
	426.20 Clothing Supplies	0	317	0	0	79	2,500	0	2,500	2,500	2,500	
	426.50 Fuel	7,452	8,533	4,727	7,183	6,974	5,000	946	5,000	5,000	5,000	
	426.70 Postage	4,914	5,144	5,741	6,448	5,562	7,500	3,747	10,000	10,000	10,000	50%
	426.90 Utility Bill Processing	3,875	3,758	3,905	4,053	3,898	6,000	2,439	70,000	70,000	70,000	50%
	427.00 Travel & Dues	395	252	42	75	191	500	166	500	500	500	
	429.00 Leases & State Fee	5,200	5,600	5,780	5,780	5,590	6,500	5,630	6,500	6,500	6,500	
	433.00 Improv Other Than Bldgs	6,162	196,751	1,865	337,397	135,544	380,000	211,142	500,000	450,000	0	Sylvan Cir - Next Phase
	434.10 Incode Annual Software	1,156	1,200	1,470	1,530	1,339	2,055	1,443	3,000	3,000	3,000	20%
	435.00 Equipment	0	698	0	0	175	5,000	0	5,000	5,000	5,000	
4700	441.00 Bond Princ	0	0	0	0	0	0	0	0	0	0	
4700	442.00 Bond Interest	0	0	0	0	0	0	0	0	0	0	
511	511.00 Transfers	0	0	24,134	1,102	6,309	1,102	0	0	36,350	36,350	Engineer
	Totals Sanitary Administration	231,602	447,383	248,260	544,281	367,882	664,930	315,159	859,363	885,713	435,713	

432.5 COLLECTION AND DISPOSAL	Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
422.00 Professional Services	4,640	771	1,258	20,155	6,706	252,000	168,530	500,000	140,000	140,000	Design Ponds
424.00 Rentals	0	0	260	4,621	1,220	2,000	0	2,000	2,000	2,000	
425.00 Repairs	1,160	3,167	6,443	39,945	12,679	10,000	7,360	10,000	10,000	10,000	
425.10 Hired Repairs	8,474	24,988	26,819	31,199	22,870	20,000	2,960	20,000	20,000	20,000	TV Work
426.00 Supplies	14,081	8,506	15,631	11,932	12,538	25,000	8,060	25,000	25,000	25,000	
426.50 Fuel	0	3,448	35	0	871	0	22	0	0	0	
428.00 Utilities	57,419	59,279	70,563	76,660	65,980	72,000	40,042	82,000	82,000	82,000	
428.10 Utilities - SF Treat	137,457	152,663	375,857	696,490	340,617	800,000	286,755	1,160,000	1,160,000	1,010,000	
428.20 SDC Charges	0	0	0	0	0	0	0	132,000	132,000	132,000	55 homes
429.00 Other	2,000	2,000	2,244	2,000	2,061	5,000	2,000	5,000	5,000	5,000	
433.00 Oversize Costs	0	71,995	1,391	0	18,347	0	0	0	0	0	
433.10 Improvements	45,540	445,665	12,490	258	125,988	125,000	0	3,000,000	2,600,000	2,600,000	New Lift Station
433.20 Improvements	0	0	0	0	0	0	0	0	150,000	150,000	Existing Lift St Rehab
435.00 Equipment	31,010	126,172	38,725	87,434	70,835	25,000	2,789	50,000	50,000	50,000	6" trash pump/hoses
436.00 Vehicles	2,356	0	0	0	589	45,000	0	0	0	0	
Totals Collection & Disposal	304,137	898,654	551,716	970,694	681,300	1,381,000	518,518	4,986,000	4,376,000	4,226,000	

TOTALS 604 SEWER FUND	535,739	1,346,037	799,976	1,514,975	1,049,182	2,045,930	833,677	5,845,363	5,261,713	4,661,713

Revenue

604 SEWER		Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
360	361.00 Interest	2,298	1,345	726	887	1,314	900	596	1,000	1,000	1,000	
360	363.06 Impact Fees	26,789	15,095	2,145	37,853	20,471	0	0	0	0	0	
360	369.00 Other	373	15	0	3,176	891	0	0	0	0	0	
360	369.02 Gas Refund	426	360	306	11	276	300	11	0	0	0	
360	369.03 Prior Year Expenditures	16	0	0	0	4	0	0	0	0	0	
380	381.992 Online Fee for pymt	434	629	744	905	678	700	578	2,300	2,300	2,300	
380	383.01 Sewer Charges	919,683	1,053,631	1,102,706	1,897,155	1,243,294	1,800,000	979,060	2,000,000	2,000,000	2,000,000	
380	383.09 Connection Fees	12,450	10,450	19,950	19,650	15,625	15,000	9,200	18,000	18,000	18,000	
360	363.01 SA Principle	0	0	0	0	0	1,001	1,001	1,001	1,001	1,001	Ironwood SA-8th Year of 10
360	363.02 SA Interest	240	210	180	150	195	240	120	100	100	100	
390	391.00 Long Term Debt - Bond	0	0	0	0	0	0	0	3,500,000	2,600,000	2,740,000	Lift Station
390	391.03 Sales of Fixed Assets	0	-871	0	24	-212	0	0	0	0	0	
390	391.04 Insurance Reimb	0	0	0	55,685	13,921	0	0	0	0	0	
390	391.07 Cost Recovery	13,820	4,542	2,096	5,939	6,599	0	0	0	0	0	
Totals Sewer		976,529	1,085,406	1,128,853	2,021,435	1,303,056	1,818,141	990,566	5,522,401	4,622,401	4,762,401	

Expenditures

604 SEWER FUND - ENTERPRISE FUND

	432.1 ADMINISTRATION	Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
	411.00 Wages	126,089	131,757	102,820	105,381	116,512	144,570	53,810	148,500	148,500	148,500	3 FTE, 8% OT
	412.00 Social Security	8,752	9,299	7,378	7,585	8,254	11,060	3,514	11,360	11,360	11,360	0.0765
	413.00 Retirement	7,565	7,906	6,221	6,271	6,991	8,674	2,947	8,910	8,910	8,910	0.06
	413.01 Supplemental Retirement	0	0	4,742	0	1,186	0	0	0	0	0	
	414.00 Workman's Comp	1,760	1,583	1,637	2,168	1,787	3,571	2,348	3,668	3,668	3,668	$2.47 per 100
	415.00 Health & Life Ins.	43,969	46,273	36,676	35,997	40,729	57,825	18,267	58,850	58,850	58,850	
	416.00 Unemployment Ins.	330	324	190	182	257	450	123	450	450	450	.01 x $15,000 wages - 3
	421.00 Insurance	6,540	6,272	6,960	7,301	6,768	7,823	6,933	7,625	7,625	7,625	
	422.00 Professional Services	3,736	16,359	27,817	7,729	13,910	6,000	280	5,000	45,000	45,000	Design 2017 Phase
	422.10 Credit Card Fees	627	1,013	1,214	1,803	1,164	1,300	1,066	2,500	2,500	2,500	
	425.00 Repairs	0	110	94	0	51	0	0	0	0	0	
	425.10 Hired Repairs	0	0	0	3,234	809	0	0	0	0	0	
	426.00 Supplies	3,080	1,938	1,820	2,401	2,310	5,000	358	7,500	7,500	7,500	
	426.10 Safety Supplies	0	2,296	3,027	661	1,496	2,500	0	2,500	2,500	2,500	
	426.20 Clothing Supplies	0	317	0	0	79	2,500	0	2,500	2,500	2,500	
	426.50 Fuel	7,452	8,533	4,727	7,183	6,974	5,000	946	5,000	5,000	5,000	
	426.70 Postage	4,914	5,144	5,741	6,448	5,562	7,500	3,747	10,000	10,000	10,000	50%
	426.90 Utility Bill Processing	3,875	3,758	3,905	4,053	3,898	6,000	2,439	70,000	70,000	70,000	50%
	427.00 Travel & Dues	395	252	42	75	191	500	166	500	500	500	
	429.00 Leases & State Fee	5,200	5,600	5,780	5,780	5,590	6,500	5,630	6,500	6,500	6,500	
	433.00 Improv Other Than Bldgs	6,162	196,751	1,865	337,397	135,544	380,000	211,142	500,000	450,000	0	Sylvan Cir - Next Phase
	434.10 Incode Annual Software	1,156	1,200	1,470	1,530	1,339	2,055	1,443	3,000	3,000	3,000	20%
	435.00 Equipment	0	698	0	0	175	5,000	0	5,000	5,000	5,000	
4700	441.00 Bond Princ	0	0	0	0	0	0	0	0	0	0	
4700	442.00 Bond Interest	0	0	0	0	0	0	0	0	0	0	
511	511.00 Transfers	0	0	24,134	1,102	6,309	1,102	0	0	36,350	36,350	Engineer
	Totals Sanitary Administration	231,602	447,383	248,260	544,281	367,882	664,930	315,159	859,363	885,713	435,713	

432.5 COLLECTION AND DISPOSAL	Actual 2011	Actual 2012	Actual 2013	Actual 2014	4 Year Average	Budget 2015	Actual 1/2 2015	Requested 2016	Reviewed 2016	Adopted 2016	
422.00 Professional Services	4,640	771	1,258	20,155	6,706	252,000	168,530	500,000	140,000	140,000	Design Ponds
424.00 Rentals	0	0	260	4,621	1,220	2,000	0	2,000	2,000	2,000	
425.00 Repairs	1,160	3,167	6,443	39,945	12,679	10,000	7,360	10,000	10,000	10,000	
425.10 Hired Repairs	8,474	24,988	26,819	31,199	22,870	20,000	2,960	20,000	20,000	20,000	TV Work
426.00 Supplies	14,081	8,506	15,631	11,932	12,538	25,000	8,060	25,000	25,000	25,000	
426.50 Fuel	0	3,448	35	0	871	0	22	0	0	0	
428.00 Utilities	57,419	59,279	70,563	76,660	65,980	72,000	40,042	82,000	82,000	82,000	
428.10 Utilities - SF Treat	137,457	152,663	375,857	696,490	340,617	800,000	286,755	1,160,000	1,160,000	1,010,000	
428.20 SDC Charges	0	0	0	0	0	0	0	132,000	132,000	132,000	55 homes
429.00 Other	2,000	2,000	2,244	2,000	2,061	5,000	2,000	5,000	5,000	5,000	
433.00 Oversize Costs	0	71,995	1,391	0	18,347	0	0	0	0	0	
433.10 Improvements	45,540	445,665	12,490	258	125,988	125,000	0	3,000,000	2,600,000	2,600,000	New Lift Station
433.20 Improvements	0	0	0	0	0	0	0	0	150,000	150,000	Existing Lift St Rehab
435.00 Equipment	31,010	126,172	38,725	87,434	70,835	25,000	2,789	50,000	50,000	50,000	6" trash pump/hoses
436.00 Vehicles	2,356	0	0	0	589	45,000	0	0	0	0	
Totals Collection & Disposal	304,137	898,654	551,716	970,694	681,300	1,381,000	518,518	4,986,000	4,376,000	4,226,000	

TOTALS 604 SEWER FUND	535,739	1,346,037	799,976	1,514,975	1,049,182	2,045,930	833,677	5,845,363	5,261,713	4,661,713

USER NAME PASSWORD

LOG IN

Forgot Username? Forgot Password?

Create an Account

Entity Dashboard

- Entity Overview
- Entity Record
- Core Data
- Assertions
- Reps & Certs
- POCs
- Reports
- Service Contract Report
- BioPreferred Report
- Exclusions
- Active Exclusions
- Inactive Exclusions
- Excluded Family Members

RETURN TO SEARCH

BRANDON, CITY OF, INC
DUNS: 556300200 CAGE Code: 4YQB1
Status: Expired

304 MAIN AVE
BRANDON, SD, 57005-1135,
UNITED STATES

Expiration Date: 12/16/2011
Purpose of Registration: Federal Assistance Awards Only

Entity Overview

Entity Information

Name: BRANDON, CITY OF, INC
Doing Business As: CITY HALL
Business Type: US Local Government
POC Name: None Specified
Registration Status: Expired
Activation Date: N/A
Expired On: 12/16/2011

Exclusions

Active Exclusion Records? No

CUSTOMER NUMBER:	127014	Argus Leader	
INVOICE NUMBER:	878476	PO Box 677349, Dallas, TX 75267-7349	
RUN DATES:	11/25, 12/2, 2015	AMOUNT DUE:	$35.37

BRANDON CITY
DENNIS OLSON
PO BOX 95
BRANDON SD 57005

DETACH THIS STUB AND RETURN WITH PAYMENT — PAYMENT DUE UPON RECEIPT

AFFIDAVIT OF PUBLICATION-
Customer Number: 127014 BRANDON CITY
Invoice Number: 878476

Argus Leader
AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA

COUNTY OF MINNEHAHA } ss

Linda Schulte being duly sworn, says: That the **Brandon Valley Challenger** is, and during all the times hereinafter mentioned was, a weekly legal newspaper as defined by SDCL 17-2-2.1 through 17-2-2.4, as amended published at Dell Rapids, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper upon

Wednesday ,the 25 day of November 2015

Wednesday ,the 2 day of December 2015 ,

_____ ,the _____ day of _____ 2015 ,

_____ ,the _____ day of _____ 2015 ,

_____ ,the _____ day of _____ 2015 ,

and that $35.37 was charged for publishing the same

Linda Schulte

Subscribed and sworn to before me 12/2/2015 .

Betty Gates

Notary Public, South Dakota

My Commission expires March 11, 2016

BETTY GATES
SEAL NOTARY PUBLIC SOUTH DAKOTA SEAL

NOTICE OF PUBLIC HEARING for the CITY OF BRANDON WASTEWATER PROJECT

The City of Brandon is proposing to construct a new wastewater lift station.. The City of Brandon is seeking up to $2,600,000 of funding from the Board of Water and Natural Resources. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the Clean Water State Revolving Fund (SRF) Program. The expected Clean Water SRF loan terms are 3.0 percent for 20 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal. The amount and source of funds will be determined by the Board of Water and Natural Resources when the application is presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

The public hearing will be held at the Brandon City Council Chamber, 308 South Main Avenue on Monday, December 7, 2015 at 6:00 PM.

Published twice at the total approximate cost of $35.37.

878476 Nov. 25 & Dec. 2, 2015

City of Brandon

Public Hearing For CW-SRF Application
Lift Station Project
6:00 PM, Monday, December 7th, 2015
Council Chambers at 308 Main Avenue, Brandon, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Mindy Hansen	317 Switch Grass
Barb Varvuskl Fish	1401 S Parkview Pl, Brandon, SD 57005
Jon McTimoney	212 Fairway Dr
Larry D. Beesley	212 S. 7th Ave. Brandon, SD 57005
Jo Hausman	517 N Tamarac Ave Brandon SD 57005
Roger Brooks	1175 Country Club Cove Brandon SD
Blaine Jones	120 W Rubber Oak Ct. Brandon, SD
Bryan Read	2917 Sunrise Crt Brandon SD 57005
Dennis E. Olson	205 Seth Street, Brandon, SD 57005
Lisa Mass	1325 Parkview Pl Brandon SD 57005
Paul Sanow	1616 Locust Ave. Brandon. SD 57005
Christina Smith	517 N. Morning Rain Ave Brandon, SD 57005
Kim Cerwick	121 E Seth St. Brandon, SD 57005
Jill Meier	105 Cecil St Brandon SD 57005
Art French	Gas Stop Holiday, Splitrock, Brandon, SD
DAVID KUU	408 SUNDAY DR BRANDON SD 57005
Tom Smith	1000 S. Quarrazite Ce SFSD 57110
Rollie Hoeke	48427 Beaver Valley Rd Valley Springs SD 57068
Paul Mantz	Sioux Valley Energy
JANICE GRANNING	SECOG

MINUTES

The Brandon City Council met in regular session at 6:00 p.m. on December 7, 2015 in the Council Chambers at 308 S. Main Avenue, Brandon, South Dakota. Present were Roger Brooks, Barb Fish, Mindy Hansen, Jo Hausman, Blaine Jones, Jon McInerney and Mayor Larry Beesley. Others present were: City Administrator, Bryan H. Read; City Finance Officer, Dennis Olson; City Attorney, Lisa Marso; City Engineer, Paul Sanow, Stockwell Engineers; Police Chief, Dave Kull; and Public Works Director, Rollie Hoeke.

Alderman Jones moved Alderwoman Hausman seconded to approve the agenda. Motion carried.

Alderman Brooks moved Alderwoman Hausman seconded to approve the minutes of the November 12, 2015 briefing meeting and the November 16, 2015 regular meeting. Motion carried.

Alderman Jones moved Alderwoman Fish seconded to approve the following claims. Motion carried.

VENDOR	DESCRIPTION	AMOUNT
Advertising Arts Inc	Police Supplies	337.08
Alliance Communications	Utilities	2,087.24
Allied Oil & Tire Company	Street Repairs	2,758.32
Argus Leader Media	GC Supplies	31.98
Batteries Plus	Police Supplies	51.90
Beal Distributing Inc	GC Resale	74.25
Blaine's Service	Various Dept Supplies	166.15
Boyce Law Firm	October Attorney Fee	6,540.31
Boyer Trucks	Street Repairs	472.95
Brandon Ace Hardware	Various Dept Supplies	764.58
Brandon Golf Course	November Refund	488.08
Brandon Lumber Company	Various Dept Supplies	2,109.77
Brandon Pharmacy	Professional Services	325.00
Brown & Saenger	Various Dept Supplies	1,581.34
Butler Machinery Company	Street Supplies	185.60
BV Chamber of Commerce	Community Promo Supplies	131.00
BV School District	Fuel	2,874.72
C & R Supply Inc	Street Repairs	208.56
Campbell's Supply	Sewer Supplies	89.43
Cardmember Services	Various Dept Supplies	2,684.39
Chris Stewart	Mailbox Refund	65.95
City of Sioux Falls	SDC Charges	351,952.02
Coffee Cup	Fuel	20.75
Constant Rock Art	GC Improvements	16.00
Corson Village Sanitary District	November Refund	868.14
Dakota Beverage	GC Resale	67.25
Dakota Fluid Power Inc	Street Supplies	74.09

Dakota Pump Inc	Sewer Repairs	2,726.76
Dale Kerber	Travel Expense	22.50
Dalyce Clow	Police Supplies	324.00
David Dede Construction	Street Improvements	1,173.58
Dennis Olson	December Premium/Travel	616.16
Dex Media	GC Publications	57.00
DirecTV	Utilities	39.51
Donovan Carpenter	Travel Expense	22.50
DPC Industries Inc	Water Supplies	525.00
Ecolab Inc	GC Rental	118.30
EnviroMaster Inc	GC Supplies	63.00
Fastenal Company	Various Dept Supplies	347.25
G & K Supreme Auto	GC Supplies	160.81
Galls	Police Supplies	195.66
Geotek Engineering	Project Testing	4,438.25
Hawkins Water Treatment	Water Supplies	2,910.79
HD Supply Waterworks	Water Repairs	72.86
InterLakes Community Action	October Bus Expense	9,782.32
Iowa League of Cities	Advertising	65.00
JD's House of Trophies	Community Promo Supplies	66.75
Jerry's Excavating Inc	Park Improvements	2,200.00
KB Sprinklers	Aspen/Sioux Project	553.52
Lacey Construction	Govt Bldg Repairs	408.00
Lacey Rentals Inc	Park Rental	200.00
Larry Bixby	Travel Expense	86.64
Locators & Supplies Inc	Sewer Supplies	123.93
Manley Tire & Oil Service	Park Supplies	555.52
Matt Parrott & Sons	Water Supplies	430.15
MD Engraving	GC Supplies	379.85
Menards Sioux Falls	Community Promo Supplies	303.76
Mills & Miller	Snow Supplies	1,647.45
Minnehaha Community Water Corp	Utilities	42.50
Modern Woodmen of America	Employee Start up	25.00
Mulder Refrigeration ink	GC Repairs	968.67
Myrl & Roy's Paving	Street Supplies	260.52
Neve's Uniforms	Police Supplies	136.90
Newman Traffic Signs	Traffic Supplies	95.96
Northern Truck Equip	Snow Repairs	199.10
Palisades Oil Company	Fuel	3,010.73
Palisades Propane Inc	Utilities	373.21
PING	Pro Shop Resale	141.88
Pizza Ranch of SF	GC Resale	68.50
Pressure Washer Specialist	Park Repairs	135.49
R & L Supply	Water Supplies	65.98
Sanitation Products	Street Repairs	284.92
SD Department of Health	GC License	275.00
SD Department of Revenue	Water Testing	317.00
Sheehan Mack Sales	Street Supplies	319.35
Sioux Falls Humane Society	October Animal Control	194.10
Sioux Falls Utilities	October WW Discharge	54,565.24

Sioux Valley Energy	Utilities	30,336.75
Staples Advantage	Various Dept Supplies	185.43
State of SD	Notary Renewal	30.00
Stockwell Engineers	Professional Services	59,263.37
Sturdevant's Auto Parts	Various Dept Supplies	1,174.66
Sunny Radio	GC Advertising	500.00
Sunshine	Various Dept Supplies	250.68
Sure Test	Professional Services	96.80
Titleist	Pro Shop Resale	588.56
Tony's Catering	GC Caters	1,990.00
Turfwerks	GC Repairs	93.78
USGA	Annual Membership	110.00
Verizon Wireless	Utilities	1,067.63
Vogel Motors	Police Repairs	99.00
Young Broadcasting of SF	Police Advertising	109.00
Zimco Supply Company	GC Supplies	17,400.00
City Administration	November 19, 2015 Payroll	3,385.02
Deputy Finance Officer	November 19, 2015 Payroll	2,159.89
Police	November 19, 2015 Payroll	18,324.00
Building Inspections	November 19, 2015 Payroll	2,828.32
Street Department	November 19, 2015 Payroll	5,187.49
Park Department	November 19, 2015 Payroll	2,780.82
Chamber of Commerce	November 19, 2015 Payroll	1,331.58
Water Department	November 19, 2015 Payroll	6,704.44
Sewer Department	November 19, 2015 Payroll	2,742.44
Golf Course Grounds	November 19, 2015 Payroll	3,155.91
Golf Course Lounge	November 19, 2015 Payroll	2,074.83
Golf Course Pro Shop	November 19, 2015 Payroll	2,462.72
Golf Course Community Room	November 19, 2015 Payroll	1,211.02
941 Payroll Taxes	November 19, 2015 Payroll	17,930.86
Office of Child Support	November 19, 2015 Payroll	76.15
SD Retirement System Supplemental	November 19, 2015 Payroll	562.50
TASC Flex Plan	November 19, 2015 Payroll	1,176.48
SD Retirement System	November Contributions	18,411.54

Alderman Brooks moved Alderman Jones seconded to approve the consent calendar which contained the following items: a plat of Lot 2A, Block 9, The Bluffs Addition; a plat of Lots B & C of Lot 5 in Tract 4, Burkman Industrial Park 2nd Addition; a plat of Lot 1A, Block 5, Country Club Heights 2nd Addition; and a plat of Lots 5, 9 & 12, Block 4, Westview Estates Motion carried.

REVIEW 2016 LIQUOR LICENSE APPLICATIONS

A public hearing was held, as advertised, to review the 2016 Liquor License Application Renewals. Art French, Gas Stop/Holiday, was present for discussion. Mr. French discussed a failure they had this year with an age restricted product sale. Alderman Jones moved Alderwoman Hansen seconded to approve the following liquor license application renewals for 2016. Motion carried.

Brandon Liquor, Inc. Sunshine Foods 117 N. Splitrock Boulevard Brandon, SD 57005-0527	Package (Off-Sale) Liquor
Brandon Spirits Acquisition Inc Brandon Spirits 228 E. Holly Boulevard Brandon, SD 57005	Package (Off-Sale) Liquor
Brandon Steakhouse Inc. Brandon Steakhouse 1308 Rushmore Drive Brandon, SD 57005-1616	Package (Off-Sale) Liquor
Brandon Steakhouse, Inc. Brandon Steakhouse 1308 Rushmore Drive Brandon, SD 57005-1616	Retail (On-Sale) Liquor Including Sunday On-Sale
VFW Post 4726 Three Rivers VFW #4726 321 Main Ave. Brandon, SD 57005-1134	Retail (On-Sale) Liquor Including Sunday On-Sale
MDF, Inc. 212 - The Boiling Point 328 S. Splitrock Blvd. Brandon, SD 57005-1654	Retail (On-Sale) Liquor Including Sunday On-Sale
MFDD, Inc Double D Saloon 325 Main Avenue Brandon, SD 57005-1134	Retail (On-Sale) Liquor Including Sunday On-Sale
DH Ventures Inc Tailgators Bar & Grill 1013 N. Splitrock Boulevard Brandon, SD 57005	Retail (On-Sale) Liquor Including Sunday On-Sale
Dolgen Midwest LLC Dollar General Store #15413 124 E Holly Blvd Brandon, SD 57005	Retail (On-Off Sale) Wine
BRV, LLC Holiday Inn Express & Suites 1103 N. Splitrock Boulevard Brandon, SD 57005	Retail (On-Sale) Liquor Convention License Including Sunday On-Sale

Brandon Cup, Inc. Coffee Cup C Store 1009 N. Splitrock Blvd Brandon, SD 57005	Retail (On/Off Sale) Wine
I-90 Fuel Services Inc The Gas Stop #103 920 N Splitrock Blvd Brandon, SD 57005	Package (Off- Sale) Liquor
Brandon Gas & Goodies Inc Brandon 1st Stop 600 N Splitrock Blvd Brandon, SD 57005	Package (Off-Sale) Liquor
City of Brandon Golf Course Concessions 2100 Aspen Boulevard Brandon, SD 57005-0095	Retail (On-Sale) Liquor Including Sunday On-Sale
City of Brandon Golf Course Concessions 2100 Aspen Boulevard Brandon, SD 57005-0095	Package (Off-Sale) Liquor

ON-OFF SALE WINE & MALT BEVERAGE LICENSE APPLICATION - 112 E. HOLLY BOULEVARD

A public hearing was held, as advertised, to consider an On-Off Sale Wine & On-Off Sale Malt Beverage license application for Marco's Pizza at 112 E. Holly Boulevard. Alderwoman Fish moved Alderman McInerney seconded to approve both the On-Off Sale Wine & On-Off Sale Malt Beverage license for Marco's Pizza at 112 E. Holly Blvd. Motion carried.

RESOLUTION #12-15

Janice Gravning, SECOG, was present to discuss Resolution #12-15. She stated that the City, with SECOG's assistance, will be submitting an application to the Department of Environment & Natural Resources (DENR) for a $2,598,400.00 Clean Water State Revolving Fund (CW-SRF) Loan for the Lift Station Project.

The interest rate for the loan is 3% for a 20 year term. The annual payment for the $2,598,400.00 Clean Water State Revolving Fund (CW-SRF) Loan would be $143,243.00. The City is pledging to repay this loan using project surcharge revenue.

For the Clean Water SRF Loan there is no grant or principal forgiveness awarded for the project so there needs to be a $4.47 project service charge for each user.

Alderwoman Hansen moved Alderman Jones seconded to reaffirm Resolution #12-15. A roll call vote showed Brooks, Fish, Hansen, Hausman, Jones and McInerney voting aye. Motion carried.

RESOLUTION #12-15

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Brandon, South Dakota, (the"City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Sioux Falls Lift Station (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared, and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the Brandon City Council as follows:

1. The City hereby approves the submission of an Application for financial assistance in the amount not to exceed $2,600,000.00 to the South Dakota Board of Water and Natural Resources for the Project.

2. The City Administrator is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The City Administrator is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Dated this 16th day of November, 2015.

_____
Larry D. Beesley
Mayor

ATTEST:

Dennis E. Olson
Municipal Finance Officer

(SEAL)

2016 FIRE SERVICES CONTRACT WITH BRANDON VOLUNTEER FIRE DEPARTMENT

The Golf Course and Police Committee reports were heard. Alderwoman Hansen moved Alderman Brooks seconded to approve the 2016 Fire Services Contract with the Brandon Volunteer Fire Department. Motion carried.

GARBAGE HAULERS LICENSE RENEWALS FOR 2016

The Park & Recreation and Administration Committee reports were heard. Alderman Jones moved Alderman Brooks seconded to approve the following Garbage Haulers License renewals for 2016. Motion carried.

A-OK SANITARY SERVICE
1509 E. Dike Street
PO Box 84912 (57118)
Sioux Falls, SD 57104
605-331-1103

BOLTE'S SUNRISE SANITARY SERVICE
P.O. Box 7 - 47026 Boondocks Court
Worthing, SD 57077
605-361-7936

D & C SOLID WASTE SERVICES
P. O. Box 84722
Sioux Falls, SD 57118
605-339-3853

MARV'S SANITARY SERVICE
P.O. Box 733 - 816 E. Redwood Blvd.
Brandon, SD 57005
605-582-6766

NOVAK SANITARY SERVICE
5000 W. 8TH Street
Sioux Falls, SD 57107
605-338-7126

RBS SANITATION, INC.
46914 Austin Street
Tea, SD 57064
605-647-5371

SIOUX FALLS SANITATION
P.O. Box 88514
Sioux Falls, SD 57109
605-338-8055

SEWER CLEANING LICENSE RENEWALS FOR 2016

Alderman Jones moved Alderman Brooks seconded to approve the following Sewer Cleaning Licenses for 2016. Motion carried.

Hander Plumbing & Heating
2407 W. 5th Street
Sioux Falls, SD 57104
339-9633

Roto-Rooter
901 East 52nd Street North
P.O. Box 623 (57101)
Sioux Falls, SD 57104
605-336-8505

MOVING PERMIT APPLICATION FOR 904 S. SIOUX BOULEVARD.

Alderman Jones moved Alderwoman Hausman seconded to approve the moving permit applications for 2 buildings to be moved off the property located at 904 S. Sioux Boulevard. Motion carried.

The Street and Water & Sewer Committee reports were heard.

At 6:28 p.m. Alderwoman Hausman moved Alderman Brooks seconded to go into executive session to consult with the City Attorney per SDCL 1-25-2(3): Consulting with legal counsel or reviewing communications from legal counsel about proposed or pending litigation or contractual matters. Motion carried. At 6:45 p.m. Mayor Beesley declared the executive session ended.

At 6:46 p.m. on a motion by Alderman Jones seconded by Alderwoman Hausman the meeting was adjourned.

Melissa Labahn
Municipal Recording Clerk

Larry Beesley
Mayor

RECEIVED

JAN 04 2015

Division of Financial
& Technical Assistance

STOCKWELL

TRANSMITTAL

Mike Perkovich		Date:	December 30, 2015
SD DENR		Project No.	8112
523 E. Capitol		Re:	Brandon Wastewater Study
Pierre, SD 57501			Brandon, South Dakota

TRANSMITTED:

- ☐ prints
- ☐ reproducible drawings
- ☐ pay estimate
- ☐ shop drawings
- ☐ specifications
- ☐ disk/CD
- ☐ change order
- ☑ Facility Plan

FOR:

- ☐ approval
- ☐ review & comment
- ☑ your use
- ☐ as requested
- ☐ _____
- ☐ _____

ACTION:

- ☐ none
- ☐ sign ___ copies
- ☐ return ___ copies
- ☐ note markings
- ☐ provide comments
- ☐ _____

Quantity:	Description:
1	Comprehensive Wastewater Collection and Treatment Systems Study

Remarks:

Thank You

Respectfully Submitted:

Erik Case, PE
Project Engineer

If enclosures are not as noted,
kindly notify us at once

cc: SEI Project File: SF8112\Correspondence\Transmittals

Brandon Comprehensive Wastewater Study

July 2013
SEI No. 8112

Brandon
SOUTH DAKOTA
Building a Better Life

STOCKWELL
ENGINEERS

Contact:
Stockwell Engineers, Inc.
600 N. Main Avenue, Suite 100
Sioux Falls, South Dakota 57104
(605) 338-6668 phone
(605) 338-8750 fax

COMPREHENSIVE WASTEWATER COLLECTION AND TREATMENT SYSTEMS STUDY

FOR

THE

CITY OF BRANDON

JULY 2013

SEI NO. 8112

I hereby certify that this report was prepared

by me or under my direct supervision and that

I am a duly Registered Professional Engineer

under the laws of the State of South Dakota.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
9236
GABRIEL G.
LABER
SOUTH DAKOTA
7/10/13

Gabriel G. Laber, P.E.

S.D. Registration No. 9236

STOCKWELL
ENGINEERS

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INTRODUCTION

PURPOSE OF STUDY

The City of Brandon contacted Stockwell Engineers, Inc. (SEI) to investigate their wastewater collection and treatment systems. The City would like to make improvements to the sanitary sewer system. This study identifies the deficiencies that the systems have based on the South Dakota Design Criteria Manual and presents options to fix these deficiencies. The City of Brandon can use this plan to budget for future projects and to obtain grant and loan funding for the proposed improvements.

SCOPE OF STUDY

The scope of the agreement between the City of Brandon and SEI is a follows:

1) Provide existing maps, plans, relevant information, wastewater fund financial records, customer connections, lift station hour meter records, wastewater treatment plant influent records, billed water records and sanitary sewer videos.
2) Provide data on existing and future conditions of the City including land use, growth trends and population estimates.
3) Provide data on existing sewer.
4) Complete a general population analysis.
5) Evaluate sanitary sewer collection system, install flow meter, watch sewer videos, calibrate lift stations, determine infiltration and inflow rates, perform smoke testing and determine existing basin boundaries.
6) Evaluate future west, south, southeast, northeast and northwest basins.
7) Evaluate existing wastewater treatment system to determine required storage for existing and future flow.
8) Provide options for additional storage at existing site or one new site.
9) Provide options for additional aeration at existing site.
10) Identify mechanical plant capacity with preliminary cost estimate.
11) Compare capital cost and long term cost for 100% pumping to Sioux Falls, partial storage with pumping to Sioux Falls and 100% storage with mechanical treatment.
12) Outline need for improvements.
13) Make recommendations for improvements to meet future growth requirements.
14) Prepare "Engineers Estimate" of probable construction cost for project alternatives.
15) Present "draft" study at Council meeting.
16) Address Client's comments and submit final study to the Client.

COMMUNITY INFORMATION

GENERAL

The City of Brandon is a Class 1 municipality located in eastern Minnehaha County on Interstate 90. Minnehaha County is located in southeastern South Dakota. The City is Governed by a Mayor and six member Council. The City has a City Administrator, Finance Officer and Public Works Director that oversee the day-to-day activities. Brandon was incorporated as a city on July 31, 1973. The City encompasses an area of approximately 3,331 acres. The land uses range from low density residential to commercial and industrial properties.

FINANCIAL STATISTICS

Based on the 2000 Census, Brandon has a median household income of $58,421 compared to the state average of $35,282. The 2000 Census also reported that 2.5% of the families in Brandon had incomes below the poverty level compared to the state average of 9.3%.

POPULATION STATISTICS

Based on the 2010 census, Brandon has a population of 8,785. The City has shown strong growth since being incorporated in 1973. Most other communities in South Dakota have seen a decline in recent years. However, Brandon's close proximity to Sioux Falls creates a unique opportunity for people to work in Sioux Falls and live in Brandon. The 2010 census indicated that 7.8% of the people living in Brandon were over the age of 65 compared to 14.3% for the State of South Dakota. It is anticipated that the population will continue to increase due to Brandon's location and their low percentage of people over 65. The population for 2013 was based on the average housing unit size and the number of housing units added since the 2010 census. The projected populations through 2027 were obtained from the Brandon Comprehensive Plan that was prepared by South Eastern Council of Governments (SECOG). Stockwell Engineers estimated the 2033 population.

Table 1 Population Statistics

Year	Population
1980	2,589
1990	3,543
2000	5,693
2010	8,785
2013	9,088
2017 (proj)	10,734
2022 (proj)	12,217
2027 (proj)	13,700
2033 (proj)	15,700

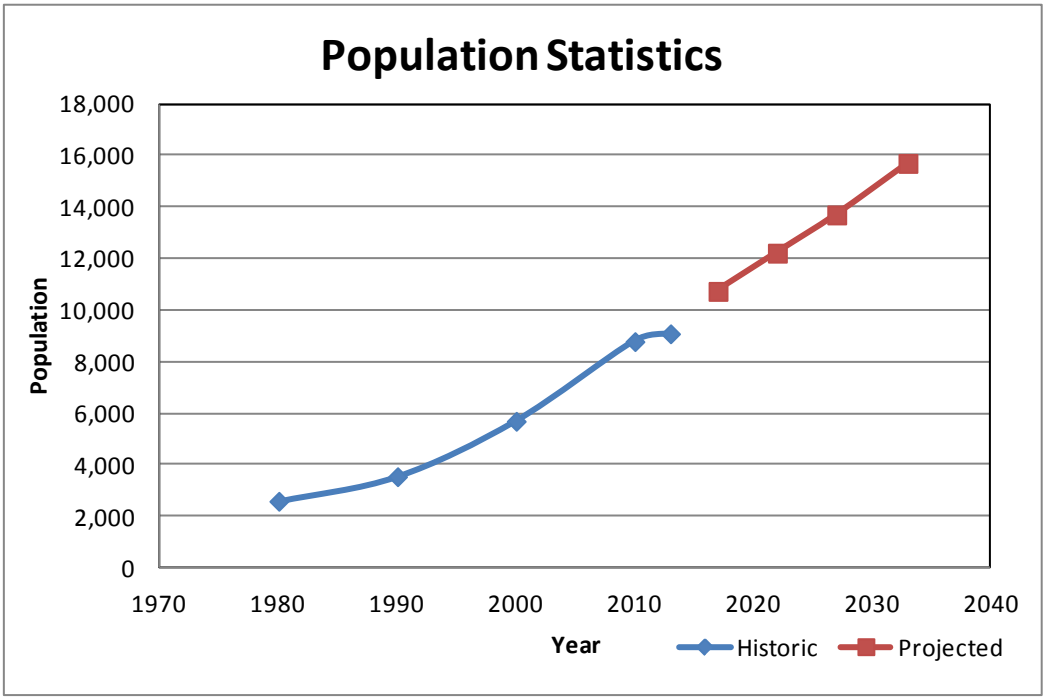

Figure 1 Population Statistics

EXISTING WASTEWATER SYSTEM

GENERAL COLLECTION SYSTEM

The current system consists of 48 miles of vitrified clay pipe (VCP) and polyvinyl chloride (PVC) pipe, 11 lift stations with 10 miles of force main and 839 manholes. There are currently 3,025 users connected to the system with an estimated 212,000 ft of service line.

There are three areas that currently are not served by gravity sewer in the City limits. The McHardy Park soccer complex and the tennis courts both have holding tanks that need to be pumped by the City's jet truck. In addition, there are homes east of Aspen Park along Split Rock Boulevard that have individual septic tanks. The existing system is shown in Figure 4.

EXISTING LIFT STATIONS

The current collection system includes 11 main lift stations and one small grinder pump for the restroom at McHardy Park. These lift stations pump to other areas of the collection system that gravity flow to the treatment system or are pumped by another lift station that gravity flows to the treatment system. On January 9, 2013 SEI helped the City calibrate all the lift station pumps. The lift station calibration determined that some of the pumps needed to be pulled and rebuilt because the flow rates varied drastically between the two pumps. The City provided the hour meter records for all the lift stations for the years of 2009, 2010 and 2011. The hour meter records were used to develop graphs for each lift station showing the average daily pumping. Copies of the graphs are located in Appendix C.

During the lift station calibration it was determined that numerous lift stations have reached their useful life expectancy and need to be replaced. Several of the lift stations do not have cathodic protection and are rusting out. The golf course lift station has been flooded in the past. Pictures of the rusting is shown in the following figures. Information about the lift stations is shown in the following table. The lift station locations are shown in Figure 4.

Table 2 Lift Station Information

Lift Station	Type	Pump #1 (gpm)	Pump #2 (gpm)	Pump Variation %	Discharge Point
Park	Submersible	258	286	11%	Gravity to WWT
Ponderosa	Wet/Dry Well	193	199	3%	Gravity to WWT
Pool	Wet/Dry Well	135	118	12%	Gravity to WWT
Wyams	Wet/Dry Well	68	223	227%	Gravity to WWT
Rushmore	Wet/Dry Well	84	95	14%	Gravity to Wyams LS
Golf Course	Wet/Dry Well	313	336	7%	Gravity to WWT
Pioneer Park	Wet/Dry Well	253	220	13%	Gravity to WWT
West Side	Submersible	268	339	27%	Gravity to WWT
Bethany	Submersible	168	251	50%	Gravity to Golf Course LS
French Creek	Submersible	109	111	1%	Gravity to Industrial LS
Industrial	Wet/Dry Well	169	208	23%	Gravity to WWT

Figure 2 Rust at the Pioneer Lift Station

Figure 3 Rust at the Ponderosa Lift Station

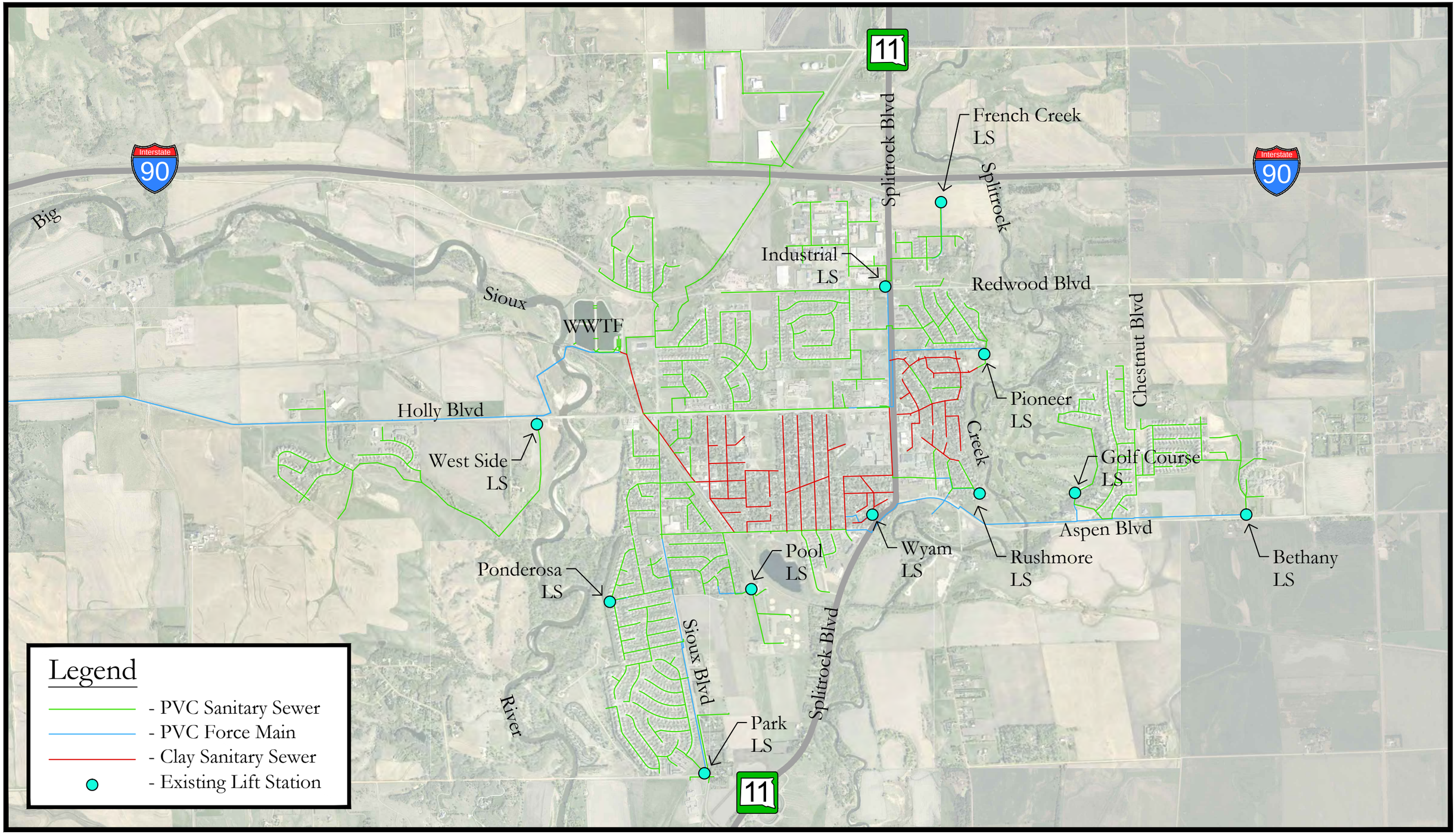

Figure 4 | Existing Wastewater Collection System

0 500 1000 2000

Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

EXISTING BASIN BOUNDARIES AND SERVICE AREA

Brandon's existing collection system can be divided into 12 basins. These basins include 11 lift station basins and one basin that gravity flows to the treatment system. Determining flow in a basin is largely contingent upon the size of the contributing watershed boundary. The watershed boundary is determined by the topography of the basin. It is defined by the area tributary to a given point on a stream and is separated from adjacent basins by a divide, or ridge, that can be traced on topographic maps. Watershed boundaries can be very large depending on the size and location of the stream. Typically they are divided into smaller tributary basins and sub-basins.

The age old method of designing sewer systems generally involves installing trunk line sewers at the lowest point of interception and extending lateral sewers toward higher or more specific locations. Trunk line sewers are typically responsible for capturing all the flow in a primary basin while lateral sewers are dedicated to intercept individual sub-basins. Lateral sewers are typically the direct interceptors for individual properties. It is critical to consider the overall drainage basin when sizing the trunk sewers. However, Brandon's rapid growth in the recent past has caused the City to install area lift stations to service new developments. The number of lift stations could be reduced if deeper trunk sewers were installed along the bottom of the basin. The size of each basin and the number of acres for each zoning classification in each basin is shown in the following table.

Table 3 Existing Basin Information

Basin	Area (acres)	Acres in Each Zoning Classification								
		NRC	R-1	R-2	R-3	CB	GB	LI	HI	PD
French Creek	18	0	14	0	0	0	4	0	0	0
Rushmore	42	0	36	6	0	0	0	0	0	0
Pool	58	51	6	0	0	0	0	0	0	0
Wyams	81	0	46	1	0	0	33	0	0	0
Ponderosa	83	7	76	0	0	0	0	0	0	0
Bethany	87	29	34	24	0	0	0	0	0	0
Park	131	29	94	8	0	0	0	0	0	0
Golf Course	175	31	114	19	0	0	11	0	0	0
West Side	209	108	44	27	0	0	30	0	0	0
Pioneer Park	225	17	139	33	0	0	36	0	0	0
Industrial	246	8	61	18	0	0	41	0	118	0
Core	886	77	591	42	0	6	39	5	126	0
Total	2,239	356	1,256	177	0	6	195	5	244	0

NRC Natural Resource Conservation District

R-1 Single Family Residential District

R-2 Multi-Family Residential District

R-3 Manufactured Housing Residential District

CB Central Business District

GB General Business District

LI Light Industrial District

HI Heavy Industrial District

PD Planned Development District

CLEANING AND TELEVISING

Over the years the City has had A-Tech Sewer Cleaning and Televising of Watertown, South Dakota clean and televised most of the existing collection system. The televising has shown holes, cracks, sags, infiltration, flattened PVC pipe and tree roots. Images of the televising are shown below. In order to verify the quality of new construction, the City has adopted a policy of having new sewer lines televised before they will accept them from the developer.

Figure 5 Tree Roots on 7th Avenue

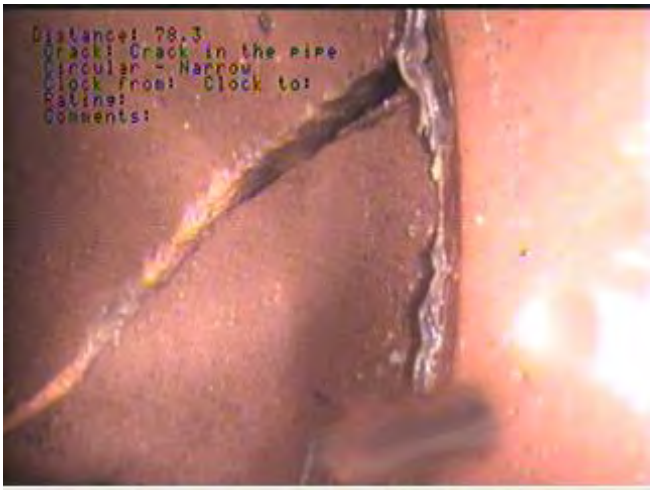

Figure 6 Crack on Sioux Boulevard

SMOKE TESTING

In November 2012 SEI conducted smoke testing of the entire collection system. The smoke testing revealed several deficiencies. The deficiencies include cleanouts that are not capped properly, open pick manholes, several homes that had smoke in them and there were multiple blocks of the VCP in the old core part of town that the smoke wouldn't travel through. Large sags and heavy tree roots will prevent smoke from traveling between manholes. It is recommended these areas be cleaned and televised again to determine the current pipe condition.

Figure 7 Smoke Testing

Figure 8 Smoke From Cracks Around Manhole

WASTEWATER FLOWS

The wastewater flows in a collection system are comprised of domestic water and clear water. Domestic water comes from homes and businesses. Clear water comes from rain water and ground water. Clear water is also called infiltration and inflow (I & I). Infiltration is ground water leaking through joints, cracks in the pipe and manhole walls. Inflow is sump pumps, roof drains, perforated manhole covers and storm sewer that are connected to the sanitary collection system. Every system is subject to some level of I & I. When I & I becomes excessive, there is potential for sewage backups and flooding of basements.

Domestic wastewater flow can be determined using water use records. The SD Design Criteria states that projected wastewater flows for a community could be calculated by using 80% of the actual water consumption. This is typically applied to the winter months of December, January and February. These months are used because there is little water usage that does not reach the collection system. During these winter months it can be assumed that 100% of metered water at the homes reaches the collection system. The City reads the water meters monthly with a radio drive-by system. Based on these records for 2008-2011, the residents of Brandon use an average of 553,388 gallons per day (gpd).

Based on the billed water records, the average daily flow is 65 gallons per capita per day (gpcpd) in the winter months. Chapter I.C.2 of the SD Design Criteria states that an alternate method to determine design capacity could be justified by local water consumption records but shall not be less than 60 gpcpd.

SEI installed a flow meter in the third manhole upstream of the intake structure at the wastewater ponds. The average wastewater flow that was recorded is 535,456 gpd. This flow does not include the West Side lift station, Stone Ridge or the Corson Industrial Park. The daily flow meter readings are shown on the following figure. The figures shows how precipitation increases the flows.

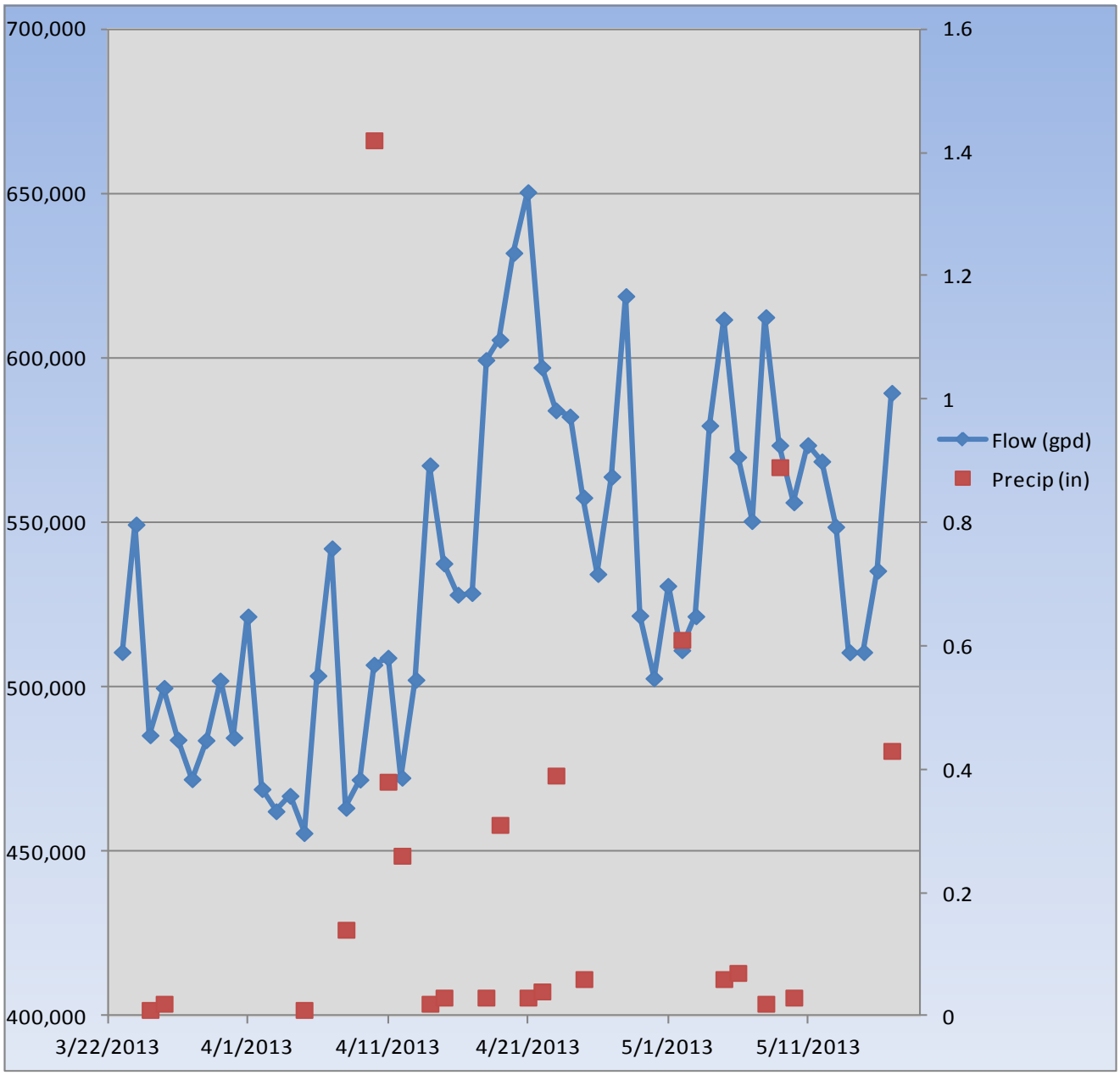

Figure 9 Flow Meter Records

The City of Brandon reads and records the hour meters on the lift station pumps and provided that data to SEI. SEI calibrated the lift station pumps to determine the daily wastewater that was pumped. The City also reads and records the amount of influent at the wastewater ponds. The total wastewater that was pumped by each lift station for 2009, 2010 and 2011 are shown in the following table.

Table 4 Wastewater Flows

Flow Pumped to a Second Lift Station	WW Flow (gal)	WW Flow (gpd)
Rushmore	29,999,252	31,162
Bethany	9,149,317	8,405
French Creek	22,559,331	20,668
Total	61,707,899	60,235
Flow Pumped and Gravity Flows to WWT	**WW Flow (gal)**	**WW Flow (gpd)**
Park	39,142,794	36,205
Ponderosa	48,645,562	44,943
Pool	21,397,621	19,672
Wyams	271,715,349	246,803
Golf Course	61,075,307	56,807
Pioneer Park	98,065,403	90,308
West Side	47,603,132	44,574
Industrial	123,084,217	112,723
Total	710,729,385	652,034
Wastewater Pond Influent	732,916,000	669,330
Core Basin Gravity Flows	22,186,615	17,295

The average daily flow from the lift stations is 652,034 gpd and the wastewater ponds receive 669,330 gpd. The Rushmore, Bethany and French Creek lift stations are not included because they pump to other lift station basins and are included in those flows. The core basin area gravity flows to the wastewater ponds and are be included in the pond influent flow. A graph for the wastewater pond influent is shown in Appendix D. The graph shows how the amount of precipitation really affects the wastewater flows. The amount of I & I can be determined by comparing the calculated domestic wastewater flows to the wastewater pond influent. This results in a average I & I flow rate of 115,942 gpd (669,330 gpd - 553,388 gpd). In comparison, the maximum daily I&I that the

treatment plant experienced was that was 3,640,000 gpd (4,194,000 gpd - 553,388 gpd) on February 11, 2009.

Typically infiltration is considered constant during the winter months because the ground is frozen and the water table is stable. During the summer months wet periods and dry periods can affect the ground water table having a significant effect on the I&I rates. As the ground water table rises, more of the collection system is submerged. Therefore, the amount of infiltration increases. The higher the groundwater table, the higher the pressure is on the sewer, forcing more water into the system. In the case of the City of Brandon, the lift station records show how rainfall events affect the wastewater flows.

The SD Design Criteria Manual states in section I.C.2 that the design allowance for a sewer system shall be 200 gallons per inch of pipe diameter per mile of pipe per day for VCP. Current practice recommends an allowance for PVC of 50 gallons per inch of pipe diameter per mile of pipe per day. Based on this allowance, Brandon's collection system can have a maximum allowable infiltration rate of 43,983 gpd which is lower than the average I&I rate of 115,942 gpd.

Table 5 Allowable Collection System Infiltration

Sanitary Sewer Dia (in)	Pipe Type	Length (ft)	Diameter-Length (in-mile)	Allowable Infiltration (gpd)
4	Clay	39,851	30.2	6,038
6	Clay	5,374	6.1	1,221
8	Clay	36,793	55.7	11,149
10	Clay	443	0.8	168
12	Clay	4,886	11.1	2,221
15	Clay	162	0.5	92
10	Ductile Iron	202	0.4	19
4	PVC	171,731	130.1	6,505
6	PVC	353	0.4	20
8	PVC	173,535	262.9	13,147
10	PVC	16,389	31.0	1,552
12	PVC	13,263	30.1	1,507
15	PVC	1,253	3.6	178
30	PVC	583	3.3	166
			Total =	43,983

The Environmental Protection Agency (EPA) has established guidelines to determine dry weather flow and wet weather flow. The dry weather flow is 120 gpcpd and the wet weather flow is 275 gpcpd. Wastewater flows over these amounts are considered excessive. The dry weather period is

during the winter months when the collection system is subject to domestic flow and infiltration. The wet weather period is during the summer when the collection system is subject to domestic flow, infiltration and inflow. Based on these limits, the City of Brandon should not experience flows over 1,090,560 gpd (120 gpcpd x 9,088) during December, January and February. The wet weather flows should not exceed 2,499,200 gpd (275 gpcpd x 9,088). Records show the wet weather flow was exceeded 4 days and the dry weather flow was exceeded 17 days since January 1, 2009.

WASTEWATER TREATMENT

Brandon's wastewater treatment system was built in 1982 and it is located in the northwest corner of the community west of Redwood Blvd and Sioux Blvd. The wastewater treatment plant consists of an aerated cell followed by three additional storage cells. The system operates under Surface Water Discharge (SWD) Permit #SD0022535 and is permitted to discharge directly into the Big Sioux River. A copy of the permit is located in Appendix A. The aerated cell has a water surface area of 0.68 acres, cell one has a water surface area of 10.5 acres, cell two has a water surface area of 5.5 acres and cell three has a water surface area of 5.5 acres. The aerated cell has an effective storage depth of 10 feet, cell one has an effective storage depth of 5.5 feet and cells two and three have an effective storage depth of 6.5 feet. Typically, the dikes are built with the top three feet for freeboard and the bottom two feet for residual storage resulting in an effective storage depth of three feet. Freeboard is used as a safety factor and the water level should never be into the freeboard. The freeboard also keeps wave action from overtopping the berm and creating a breach of the berm. Brandon's cells are deeper than normal because the aeration allows the effective storage depth to be increased. The existing treatment system is shown in the following figures.

Figure 10 Aerated Cell

Figure 11 Wastewater Treatment

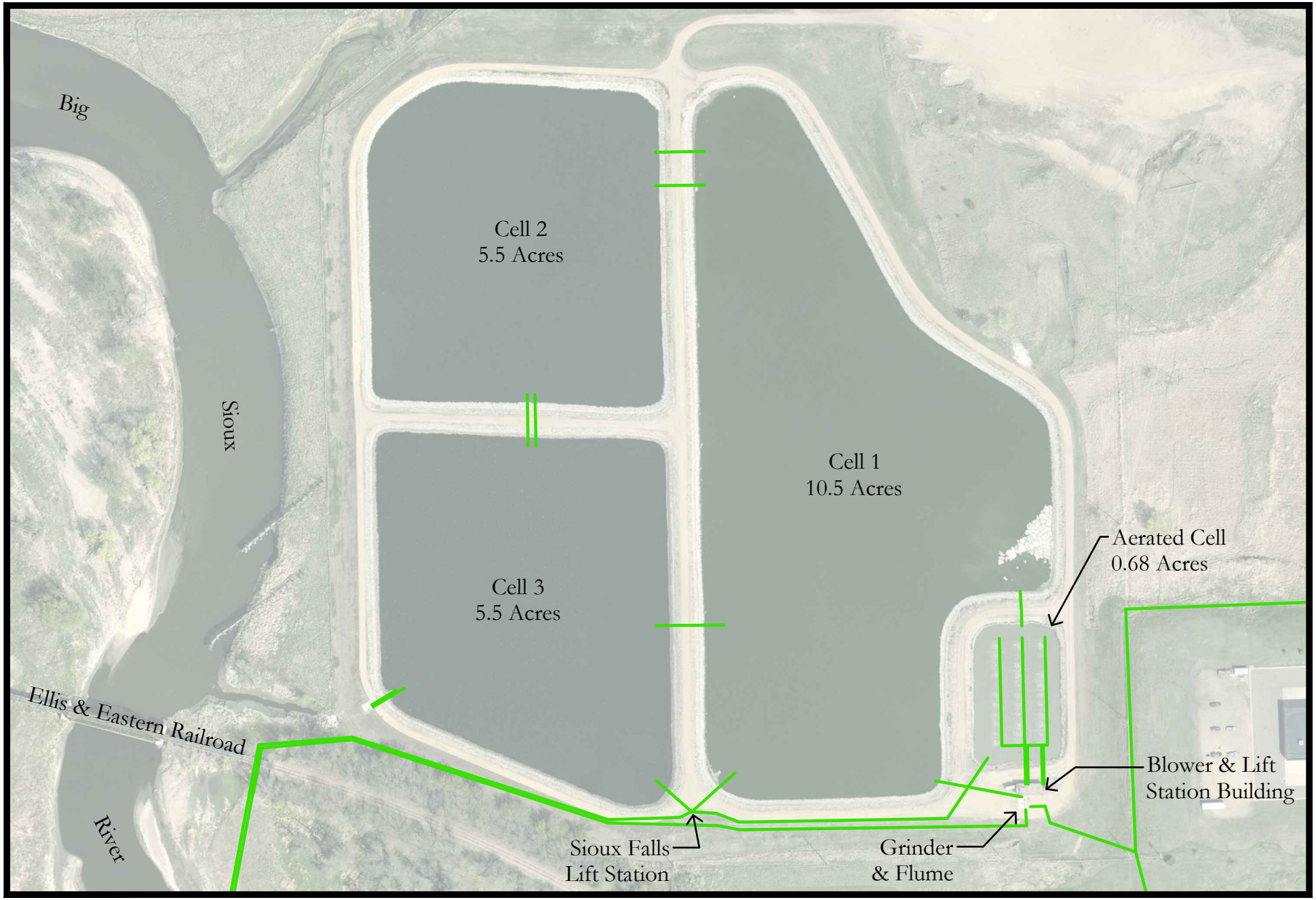

Figure 12 | Existing Treatment System

0 50 100 200

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On June 8, 2012 the SD DENR completed a Surface Water Discharge Compliance Inspection. A copy of the inspection is located in Appendix B. The inspection provided the following requirements:

- Samples must be preserved according to the proper sampling methods.
- The City must look into modifications of its operation to allow for adequate treatment of the wastewater.
- All sample results must be reported on Discharge Monitoring Reports.
- The maximum 7-day average should be reported for BOD_5 and TSS.
- More care should be taken when filling out DMRs.
- DMRs need to be submitted on time.
- The facility should take more care when submitting DMRs via NetDMR.

SLUDGE

In 2012 cell one was dredged to remove the sludge that had accumulated on the cell floor. Approximately 21,400 CY of in place solids were removed from cell one. The sludge was pumped to geotextile tubes to be dewatered. The dewatered sludge will be land applied in 2013. Due to budget constraints all of the sludge could not be removed from cell one. A post construction survey revealed there is approximately 11,900 CY still remaining in cell one. The City should plan to remove this sludge if they decide to make improvements and maintain this site for the next 20 years. This does not include the bottom six inches of sludge because the cutter head could damage the clay liner.

Figure 13 Dredging Machine

Figure 14 Geotextile Tubes

INTAKE STRUCTURE

All of the wastewater flow from the City of Brandon currently flows through an intake structure before entering the aerated cell. This structure consists of a grinder followed by a nine-inch parshall flume with flow meter. The grinder was installed to help break-down the solids entering the treatment system. The grinder is constantly plugged and stops working. In addition, the lift station records indicate that the flow meter is not reading accurately. The lift stations indicate that the total amount of wastewater that was pumped from 2009 - 2011 was 710,729,385 gallons compared to the flow meter measurement of 732,916,000 gallons. The core basin accounts for 40% of the contributing area of the City. The flow meter should be reading substantially more flow than the lift stations to account for the core basin of the City that gravities to the treatment system. The potential reasons for the discrepancy are the flow meter is not installed correctly, the lift station records are not accurate and the wastewater is exfiltrating in the old clay pipes.

SIOUX FALLS LIFT STATION

In 1995 the City of Brandon added a lift station at the treatment system to pump wastewater to the City of Sioux Falls. The lift station was added because the treatment system was overloaded and the City of Sioux Falls was willing to take the additional wastewater that Brandon could not treat. A single pump submersible lift station was added at the southwest corner of cell one. The lift station is capable of pumping from the aerated cell, cell one or cell three. Currently, the City pumps approximately 300,000 gpd to Sioux Falls from the aerated cell during the night. In the summer of 2011 the pump burned up and had to be replaced. Brandon was unable to pump to Sioux Falls for three weeks until a new pump could be installed. During this time the wastewater almost breached the dikes because the City couldn't meet their discharge limits and they couldn't pump to Sioux Falls.

On January 1, 2013 the City of Sioux Falls raised their pumping charge. The current charge is $3.89 per 1,000 gallons. The City of Brandon can receive a $0.43 per 1,000 gallon credit for equalization and $0.54 per 1,000 gallon credit for partial treatment. However, the BOD levels required to get the partial treatment credit need to be lower than Brandon's current discharge limit. It is unlikely that the City of Brandon will receive the partial treatment credit because they have difficulty meeting their BOD discharge limit. The rate will be reviewed every two years. Sioux Falls is also implementing a new System Development Charge "SDC". The City of Brandon will be required to pay the City of Sioux Falls for every new connection after July 11, 2013. The charge will range from $2,931 to $59,772 depending on the water meter size. A history of the pumping charge is shown in the following table.

Table 6 Sioux Falls Charge History

Year	Charge per Thousand Gallons	Annual Cost to Pump to Sioux Falls
2008	$ 0.75	$99,538.83
2009	$ 1.10	$118,292.27
2010	$ 1.10	$119,544.47
2011	$ 1.41	$140,341.00
2012	$ 1.41	$152,662.96
2013	$ 3.89	
2014	$ 3.89	

WASTEWATER TREATMENT HYDRAULIC LOADING

There are two elements to consider when sizing a treatment system. The element that provides the larger size governs. The first way is to calculate the hydraulic loading or the amount of wastewater that is flowing to the treatment system. The following table shows the wastewater flows that the treatment system is experiencing. The table also shows the design and projected hydraulic loading for the treatment system. The current treatment system is overloaded hydraulically as shown by the negative values. The overloading is due to the City's population increasing by 351% since the treatment system was built.

Table 7 Treatment System Hydraulic Loading

	Designed 1982	Current 2013	Projected 2033
Population	2,589	9,088	15,700
Wastewater Flow (gpcpd)	65	65	65
Infiltration & Inflow (gpd)	0	115,942	115,942
Design Storage Time (days)	180	180	180
Total Pond Influent (gal)	30,291,300	127,199,120	204,559,520
Cell 1			
10.5ac x 43560sf/ac x 5.5ac x 7.48	18,817,871	18,817,871	18,817,871
Cell 2			
5.5ac x 43560sf/ac x 6.5ac x 7.48	11,649,158	11,649,158	11,649,158
Cell 3			
5.5ac x 43560sf/ac x 6.5ac x 7.48	11,649,158	11,649,158	11,649,158
Total Storage (gal)	42,116,187	42,116,187	42,116,187
Remaining Storage (gal)	11,824,887	-85,082,932	-162,443,332
Additional Storage Req @ 6' (ac)	0.0	43.5	83.1

WASTEWATER TREATMENT ORGANIC LOADING

The second way to size a treatment system is to calculate the organic loading. The SD Design Criteria states in Section B.1.a of Chapter IV that the maximum design loading on the primary cell shall not exceed 30 pounds of Biochemical Oxygen Demand (BOD_5) per acre. Based on this criteria, the primary pond should receive less than 315 pounds of BOD_5. Furthermore, Section B.1.d states the total organic loading for the total surface area shall not exceed 20 pounds BOD_5 per acre per day. Based on this criteria, the treatment system should receive less than 430 pounds of BOD_5. The SD Design Criteria also states that on average a person will generate 0.17 pounds of BOD_5.

Wastewater sampling completed in October of 2011 indicated the average influent composite BOD sample was 298 mg/L and the average aerated composite sample was 141 mg/L. This results in a per capita loading of .19 lbs per person per day. These samples are used to calculate the actual treatment loading and show the treatment system is overloaded organically in following table.

Table 8 Treatment System Organic Loading

	Designed 1982	Current 2013	Projected 2033
Population	2,589	9,088	15,700
Per Capita Loading (lbs)	0.19	0.19	0.19
Total Loading (lbs)	492	1,727	2,983
Aerated Effluent (lbs)	233	832	2,061
Primary Loading Limit (lbs/ac)	30	30	30
Primary Size Required (ac)	7.8	27.7	68.7
Total System Loading Limit (lbs/ac)	20	20	20
Total System Size Required (ac)	11.7	41.6	103.1

DEVELOPMENT OF WASTEWATER ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

Each of the following alternatives includes an estimate of the total project cost. Included in the total project cost are the construction cost, contingencies, legal and administration, engineering and testing costs. It should be noted that these are only estimates and does not guarantee the cost of actual construction. Field measurements will be taken during the design phase to complete a more accurate estimate. Contract prices can be affected by project location, year built, contractor work load, project size, contract time and the time of year that the project is built. These estimates should be updated on a yearly basis to reflect current industry conditions. Inflation factors have not been included in the estimates.

EQUIVALENT UNIFORM ANNUAL COST

When choosing the most cost effective solution to a problem, you have to consider the initial cost, long term cost and lifetime of the system. The alternative that reflects the cheapest initial cost may not be the least expensive alternative when operation and maintenance cost are taken into account. The capital cost and equivalent uniform annual cost (EUAC) are provided for some of the alternatives. The EUAC is evaluated over 20 years and an interest rate of 3.0% to provide the long term costs. The salvage value at the end of 20 years will be 0% or 60%. The EUAC will provide the owner with the best long term solution.

WASTEWATER COLLECTION ALTERNATIVES

The following alternatives were developed to correct the deficiencies listed below:

1) The VCP has outlived its useful life expectancy and needs to be replaced or rehabilitated.
2) Televising revealed several deficiencies that should be corrected.
3) The system is experiencing excessive I & I.
4) New trunk sewers should be installed to eliminate lift stations.
5) Four lift stations that are not eliminated need to be replaced because they are rusting out or parts are not available.
6) A SCADA system should be installed to closely monitor lift stations and the treatment system closer.

COLLECTION ALTERNATIVE 1: REPLACE VCP WITH PVC

Alternative 1 includes replacement of all the remaining VCP with PVC. The service lines would be replaced from the main line to the property line and the streets would be completely rebuilt. The

new PVC lines would reduce the amount of I&I and correct the deficiencies that the televising revealed.

It should be noted that the cost for this alternative may be reduced if during the design it is determined that sections of the sewer system can be lined. Normally liner is more cost effective because the asphalt surface doesn't need to be replaced. The cost estimate for this alternative is shown in the following table.

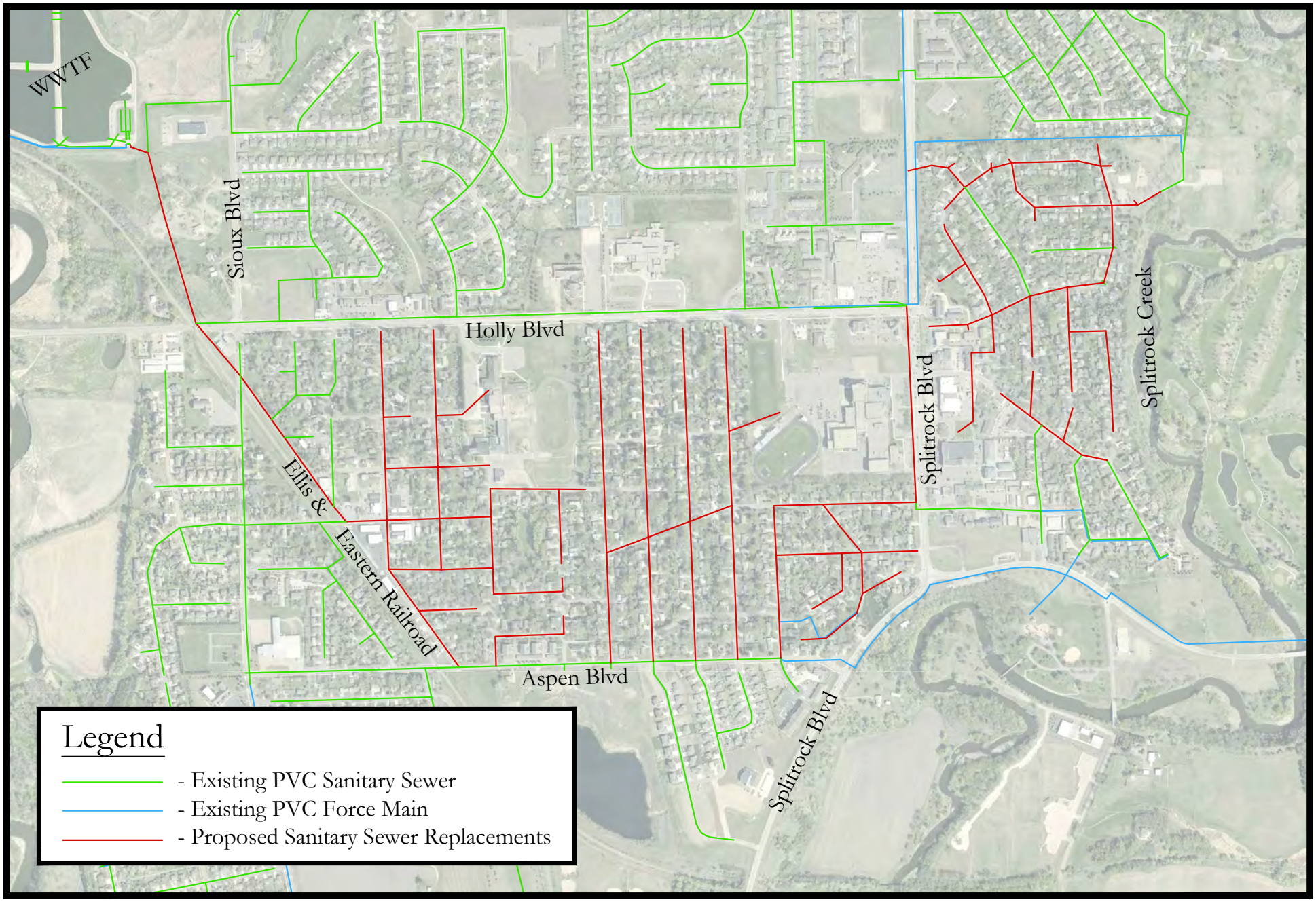

Figure 15 | Collection Alternative 1

0 250 500 1000

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Table 9 Cost Estimate for Collection Alternative 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$1,219,000.00	$1,219,000.00
2	Clearing	1	LS	$15,000.00	$15,000.00
3	Remove Sewer Pipe	47,700	FT	$4.00	$190,800.00
4	Remove Asphalt Concrete Pavement	153,300	SY	$2.50	$383,250.00
5	Remove Existing Manhole	160	EA	$400.00	$64,000.00
6	Remove Concrete Curb & Gutter	95,600	FT	$4.00	$382,400.00
7	Saw Existing Surfacing	1,800	FT	$7.00	$12,600.00
8	Unclassified Excavation	83,600	CY	$6.00	$501,600.00
9	Scarify & Recompact Subgrade	187,900	SY	$1.00	$187,900.00
10	Sanitary Sewer Manhole	140	EA	$3,000.00	$420,000.00
11	Sanitary Sewer Manhole Lined	20	EA	$6,000.00	$120,000.00
12	4" PVC Sanitary Service Line	18,900	FT	$25.00	$472,500.00
13	8" PVC Sanitary Sewer Pipe	42,200	FT	$35.00	$1,477,000.00
14	10" PVC Sanitary Sewer Pipe	500	FT	$40.00	$20,000.00
15	12" PVC Sanitary Sewer Pipe	5,100	FT	$48.00	$244,800.00
16	Sanitary Sewer Pipe Bedding Material	47,800	FT	$6.00	$286,800.00
17	Sewer Wye	570	EA	$300.00	$171,000.00
18	Sewer Fittings	1710	EA	$100.00	$171,000.00
19	Reconnect Sewer Main	50	EA	$500.00	$25,000.00
20	Reconnect Sewer Service	570	EA	$250.00	$142,500.00
21	Salvage & Place Topsoil	37,100	CY	$5.00	$185,500.00
22	Aggregate Base Course (12")	122,600	TON	$12.00	$1,471,200.00
23	Asphalt Concrete Surfacing (4")	35,700	TON	$70.00	$2,499,000.00
24	Concrete Curb & Gutter	95,600	FT	$12.00	$1,147,200.00
25	Geotextile Fabric	187,900	SY	$1.50	$281,850.00
26	6" Concrete Fillet Section	6,560	SY	$45.00	$295,200.00
27	6" Concrete Valley Gutter	7,530	SY	$45.00	$338,850.00
28	4" Concrete Sidewalk	24,000	SF	$4.00	$96,000.00
29	Detectable Warning Surface	1,600	SF	$45.00	$72,000.00
30	Traffic Control	1	LS	$50,000.00	$50,000.00
31	Seeding, Fertilizing & Mulching	222,400	SY	$1.50	$333,600.00
32	Post Televising	47,800	FT	$1.00	$47,800.00
33	Erosion Control	1	LS	$25,000.00	$25,000.00
34	Bypass Pumping	1	LS	$20,000.00	$20,000.00
35	Trench Dewatering	1	LS	$30,000.00	$30,000.00
				Subtotal	$13,400,350.00
				Contingencies (15%)	$2,011,000.00
				Total Estimated Construction Costs	**$15,411,350.00**
				ENGINEERING	**$1,977,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$617,000.00**
				TOTAL ESTIMATED PROJECT COST	**$18,005,350.00**

Table 10 EUAC for Collection Alternative 1

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$1,219,000.00	$0.00	$0.00	$1,219,000.00
Clearing	$15,000.00	$0.00	$0.00	$15,000.00
Remove Sewer Pipe	$190,800.00	$0.00	$0.00	$190,800.00
Remove Asphalt Concrete Pavement	$383,250.00	$0.00	$0.00	$383,250.00
Remove Existing Manhole	$64,000.00	$0.00	$0.00	$64,000.00
Remove Concrete Curb & Gutter	$382,400.00	$0.00	$0.00	$382,400.00
Saw Existing Surfacing	$12,600.00	$0.00	$0.00	$12,600.00
Unclassified Excavation	$501,600.00	$0.00	$0.00	$501,600.00
Scarify & Recompact Subgrade	$187,900.00	$0.00	$0.00	$187,900.00
Sanitary Sewer Manhole	$420,000.00	$252,000.00	$139,526.29	$280,473.71
Sanitary Sewer Manhole Lined	$120,000.00	$72,000.00	$39,864.65	$80,135.35
4" PVC Sanitary Service Line	$472,500.00	$283,500.00	$156,967.08	$315,532.92
8" PVC Sanitary Sewer Pipe	$1,477,000.00	$886,200.00	$490,667.45	$986,332.55
10" PVC Sanitary Sewer Pipe	$20,000.00	$12,000.00	$6,644.11	$13,355.89
12" PVC Sanitary Sewer Pipe	$244,800.00	$146,880.00	$81,323.89	$163,476.11
Sanitary Sewer Pipe Bedding Material	$286,800.00	$0.00	$0.00	$286,800.00
Sewer Wye	$171,000.00	$102,600.00	$56,807.13	$114,192.87
Sewer Fittings	$171,000.00	$102,600.00	$56,807.13	$114,192.87
Reconnect Sewer Main	$25,000.00	$0.00	$0.00	$25,000.00
Reconnect Sewer Service	$142,500.00	$0.00	$0.00	$142,500.00
Salvage & Place Topsoil	$185,500.00	$0.00	$0.00	$185,500.00
Aggregate Base Course (12")	$1,471,200.00	$882,720.00	$488,740.66	$982,459.34
Asphalt Concrete Surfacing (4")	$2,499,000.00	$1,499,400.00	$830,181.43	$1,668,818.57
Concrete Curb & Gutter	$1,147,200.00	$688,320.00	$381,106.10	$766,093.90
Geotextile Fabric	$281,850.00	$0.00	$0.00	$281,850.00
6" Concrete Fillet Section	$295,200.00	$177,120.00	$98,067.05	$197,132.95
6" Concrete Valley Gutter	$338,850.00	$203,310.00	$112,567.82	$226,282.18
4" Concrete Sidewalk	$96,000.00	$57,600.00	$31,891.72	$64,108.28
Detectable Warning Surface	$72,000.00	$43,200.00	$23,918.79	$48,081.21
Traffic Control	$50,000.00	$0.00	$0.00	$50,000.00
Seeding, Fertilizing & Mulching	$333,600.00	$0.00	$0.00	$333,600.00
Post Televising	$47,800.00	$0.00	$0.00	$47,800.00
Erosion Control	$25,000.00	$0.00	$0.00	$25,000.00
Bypass Pumping	$20,000.00	$0.00	$0.00	$20,000.00
Trench Dewatering	$30,000.00	$0.00	$0.00	$30,000.00
Remaining Capital Costs	$4,605,000.00	$0.00	$0.00	$4,605,000.00
Total Construction Cost	**$18,005,350.00**	**$5,409,450.00**	**$2,995,081.31**	**$15,010,268.69**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$2,000.00			$29,754.95
Supplies	$2,000.00			$29,754.95
Utilities	$0.00			$0.00
Labor	$3,000.00			$44,632.42
Total Annual Cost	**$7,000.00**			**$104,142.32**
			Total Net Present Worth	**$15,114,411.02**
			EUAC	**$1,015,925.83**

COLLECTION ALTERNATIVE 2: FUTURE BASIN IMPROVEMENTS

Collection Alternative 2 proposes a long range future basin plan that reduces the number of collection lift stations in Brandon from 11 to 2. This can be accomplished by installing new trunk sewers along the bottom of the basin. These new trunk sewers would be deeper and would extend further to eliminate the need for lift stations. The new trunk sewers would also open up new areas for development. Brandon's rapid growth in the recent past has caused the City to install area lift stations to service new developments instead of being able to construct deeper truck sewers. The proposed basins are shown in Figure 16.

The two main components in the design of trunk sewers are the location and size. Trunk line sewers are typically responsible for capturing all the flow in a primary basin while lateral sewers are dedicated to intercept individual sub-basins. Lateral sewers are typically the direct interceptors for individual properties. It is critical to consider the overall drainage basin when sizing the trunk sewers. The wastewater flow from a basin can be calculated by knowing the size of basin and the land use. The recommended wastewater flows for each land use type is shown in the following table. The land use type is based on the current zoning and the future land use established in the Brandon Comprehensive Plan. It is recommended the City change their current Design Standards to follow the table below.

Table 11 Density Design Table

Districts	A_D Area Density (Units/Acre)	U_D Unit Density (People/Unit)	R Rate (gpcd)	F Flow (gal/ac)
Natural Resource Conservation (NRC)	1	3	100	300
Single Family Residential (R-1)	4	3	100	1,200
Multi-Family Residential (R-2)	12	2	100	2,400
Manufactured Housing Residential (R-3)	6	3	100	1,800
Central Business (CB)	2	10	100	2,000
General Business (GB)	2	10	100	2,000
Light Industrial (LI)	2	3	100	600
Heavy Industrial (HI)	1	15	100	1,500
Planned Development (PD)	2	10	100	2,000

The previous table determines the average daily flow from a basin by multiplying the number of acres from each zoning classification by a unit density and flow rate. The flow of wastewater varies throughout the day and the year. The peak daily flow from a small residential area will typically occur around noon or in the early evening hours and may vary from 200 to 400 percent of the average daily flow. Due to storage and lag time in larger basins, daily peak flows are more

consistent and may only vary 180 to 250 percent of the average daily flow. For this reason a peak daily flow factor or peaking factor is assumed and multiplied by the average daily flow to obtain the peak daily flow. The SD Design Criteria Manual requires a peaking factor of 2.5 for trunk sewers and 4 for lateral sewers. The peak daily flow is typically used in the design and sizing of sanitary sewer mains. The wastewater flows from the future basins are shown in the following table.

Table 12 Future Basin Flows

Basin	Area (acres)	NRC	R-1	R-2	R-3	CB	GB	LI	HI	PD	Average Daily Flow (cfs)	Peaking Factor	Peak Flow (cfs)
Husets	3,629	348	3,078	131	0	0	72	0	0	0	6.6	2.5	16.5
McHardy	496	181	295	13	0	0	7	0	0	0	0.7	2.5	1.8
Bethany	1,756	0	1,673	56	0	0	26	0	0	0	3.4	2.5	8.5
Split Rock	2,765	475	1,787	137	0	0	221	0	146	0	5.1	2.5	12.7
Hidden Valley	1,573	1,573	0	0	0	0	0	0	0	0	0.7	2.5	1.8
Country Gable	379	379	0	0	0	0	0	0	0	0	0.2	2.5	0.4
Parkview	936	367	569	0	0	0	0	0	0	0	1.2	2.5	3.1
Big Sioux Rec	342	267	75	0	0	0	0	0	0	0	0.3	2.5	0.7
West Side	1,470	216	850	32	0	0	203	0	169	0	2.8	2.5	7.0
Core	1,422	257	648	42	0	6	60	5	404	0	2.6	2.5	6.6
Total	14,768	4,061	8,976	411	0	6	590	5	720	0	23.6		59.0

Installing all of the trunk sewers at one time would be a significant financial burden on the City. In addition, development doesn't warrant all of the trunk sewers to be installed at this time. Therefore, Collection Alternative 2 is broken into three phases. Phase A includes installing a lift station in McHardy Park and all of the trunk sewer upstream. This would eliminate seven of the existing lifts stations. The lift station would pump back to the existing treatment system along the railroad tracks. Currently there are holding tanks in McHardy Park for the bathrooms and a grinder lift station for the bathroom on the north side of Split Rock Creek. These two areas would now be served by gravity sewer. Phase A would also open up 496 acres for development in the McHardy Basin.

Phase B would install a new lift station for the Parkview Basin. Three of the existing lift stations would be eliminated and additional area would be opened for development. The lift station would pump along the backside of the properties on the east side of the Big Sioux River. Phase C would eliminate the new lift station that was installed in Phase A and build a new lift station further to the south. This phase would be completed after Phase A and B. This lift station would pump in a new force main that follows Phase B. This would open up 3,629 acres of development in the Husets basin.

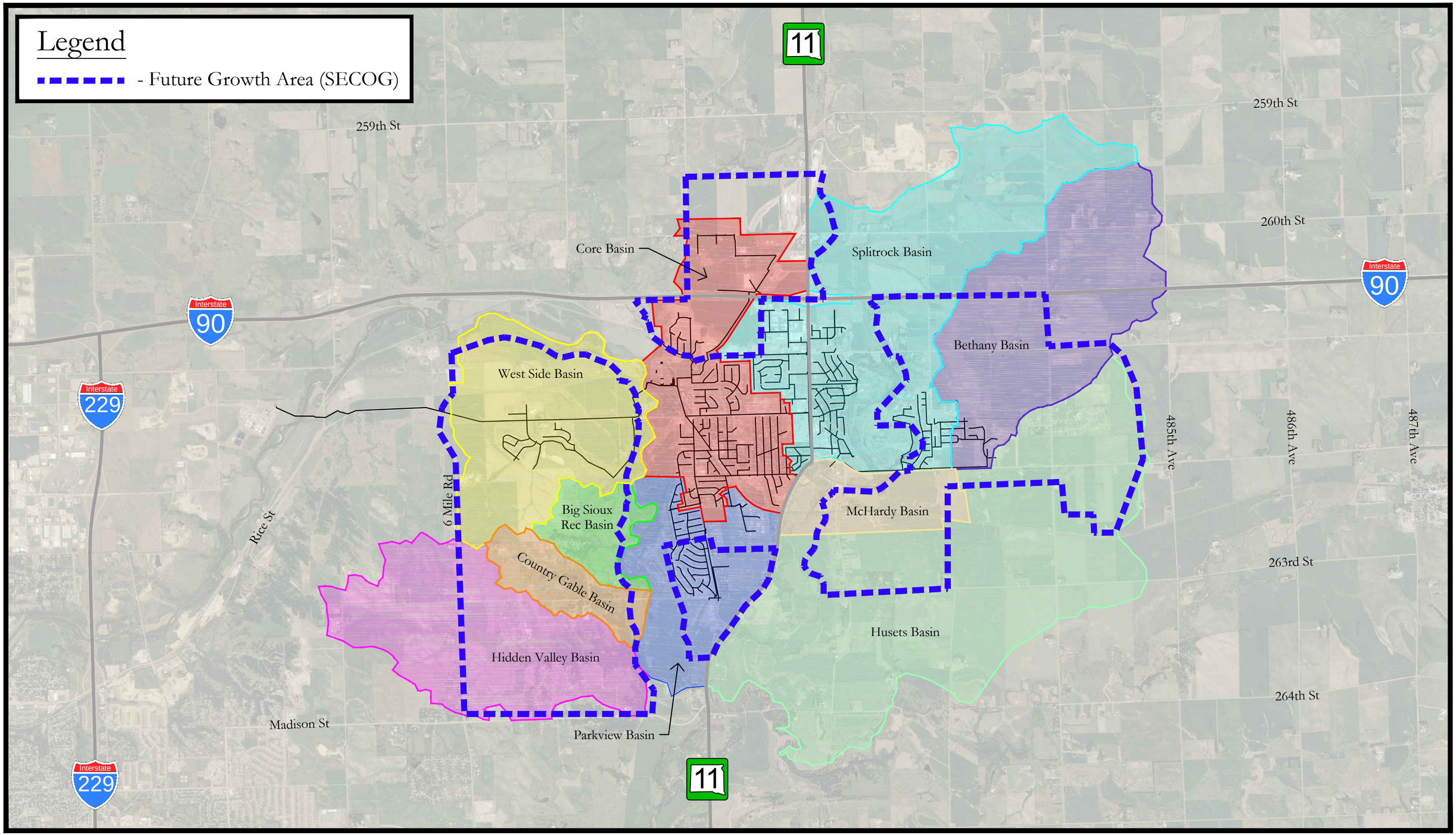

Figure 16 | Future Basins

0 1000 2000 4000

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STOCKWELL ENGINEERS

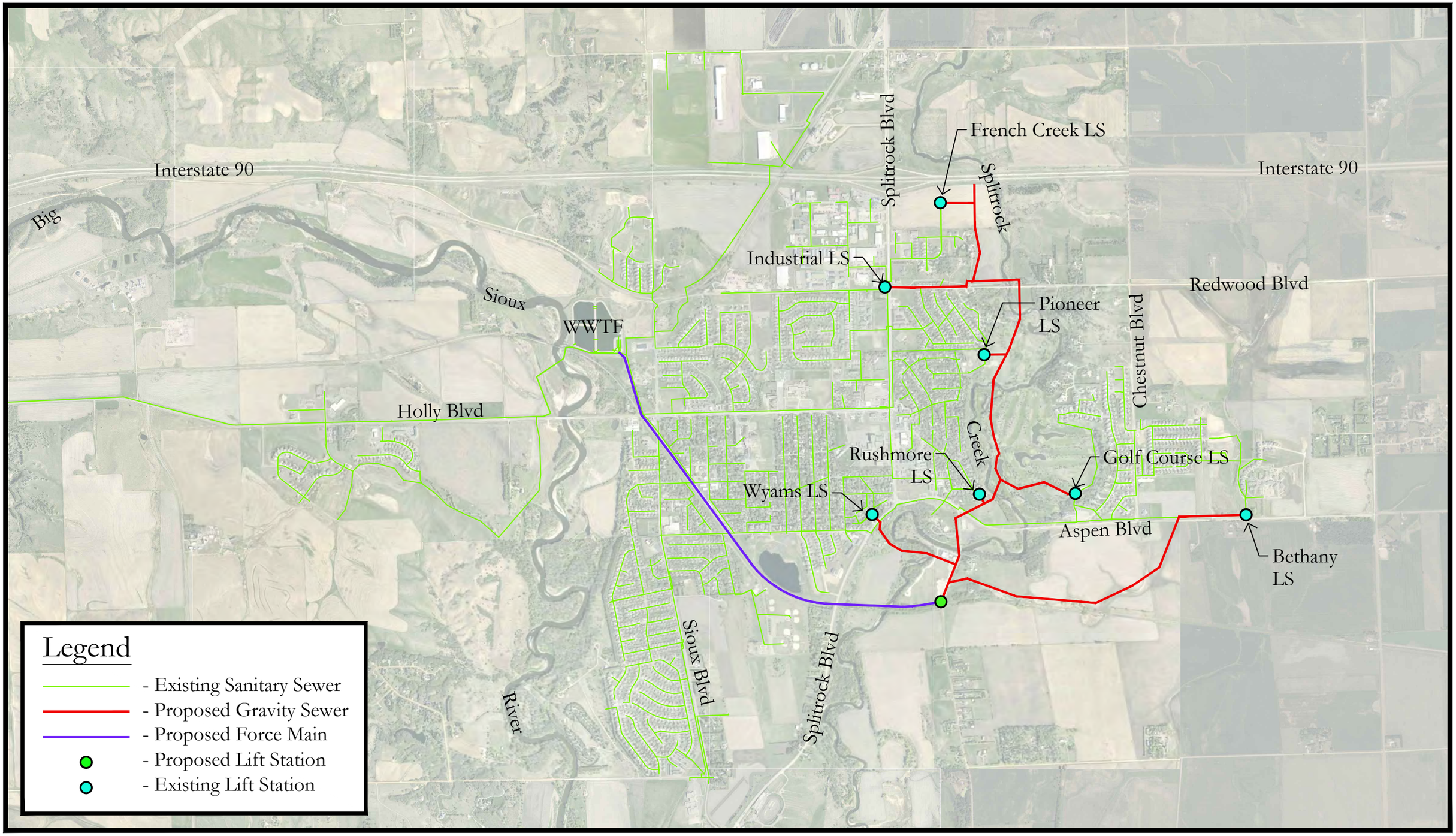

Figure 17 | Collection Alternative 2A

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Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

Table 13 Cost Estimate for Collection Alternative 2A

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$654,000.00	$654,000.00
2	Clearing	1	LS	$20,000.00	$20,000.00
3	Remove Sewer Pipe	700	FT	$4.00	$2,800.00
4	Remove Asphalt Concrete Pavement	12,700	SY	$2.50	$31,750.00
5	Remove Concrete Pavement	300	SY	$4.00	$1,200.00
6	Remove Existing Lift Station	7	EA	$10,000.00	$70,000.00
7	Unclassified Excavation	7,030	CY	$6.00	$42,180.00
8	Scarify & Recompact Subgrade	15,800	SY	$1.00	$15,800.00
9	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
10	Wet/Dry Well Lift Station	1	LS	$734,000.00	$734,000.00
11	Sanitary Sewer Manhole Lined	70	EA	$6,000.00	$420,000.00
12	Air Release Manhole	3	EA	$5,000.00	$15,000.00
13	21" Force Main	20,000	FT	$65.00	$1,300,000.00
14	8" PVC Sanitary Sewer Pipe	5,200	FT	$35.00	$182,000.00
15	10" PVC Sanitary Sewer Pipe	2,600	FT	$40.00	$104,000.00
16	24" PVC Sanitary Sewer Pipe	3,700	FT	$85.00	$314,500.00
17	27" PVC Sanitary Sewer Pipe	11,800	FT	$105.00	$1,239,000.00
18	30" PVC Sanitary Sewer Pipe	2,900	FT	$125.00	$362,500.00
19	42" PVC Sanitary Sewer Pipe	500	FT	$150.00	$75,000.00
20	8" Sanitary Sewer Pipe Bedding Material	5,200	FT	$4.00	$20,800.00
21	10" Sanitary Sewer Pipe Bedding Material	2,600	FT	$5.00	$13,000.00
22	21" Sanitary Sewer Pipe Bedding Material	20,000	FT	$7.00	$140,000.00
23	24" Sanitary Sewer Pipe Bedding Material	3,700	FT	$8.00	$29,600.00
24	27" Sanitary Sewer Pipe Bedding Material	11,800	FT	$9.00	$106,200.00
25	30" Sanitary Sewer Pipe Bedding Material	2,900	FT	$9.00	$26,100.00
26	42" Sanitary Sewer Pipe Bedding Material	500	FT	$10.00	$5,000.00
27	Trench Stabilization Material	13,300	TN	$15.00	$199,500.00
28	River Crossings	7	EA	$20,000.00	$140,000.00
29	Highway Crossing	300	FT	$300.00	$90,000.00
30	Irrigation Repairs	1	LS	$10,000.00	$10,000.00
31	Reconnect Sewer Main	7	EA	$500.00	$3,500.00
32	Salvage & Place Topsoil	20,400	CY	$5.00	$102,000.00
33	Aggregate Base Course (12")	10,400	TN	$12.00	$124,800.00
34	Asphalt Concrete Surfacing (4")	3,000	TN	$70.00	$210,000.00
35	Concrete Surfacing	300	SY	$50.00	$15,000.00
36	Geotextile Fabric	15,800	SY	$1.50	$23,700.00
37	Traffic Control	1	LS	$15,000.00	$15,000.00
38	Seeding, Fertilizing & Mulching	122,400	SY	$1.50	$183,600.00
39	Post Televising	26,700	FT	$1.00	$26,700.00
40	Erosion Control	1	LS	$25,000.00	$25,000.00
41	Bypass Pumping	1	LS	$20,000.00	$20,000.00
42	Trench Dewatering	1	LS	$30,000.00	$30,000.00
				Subtotal	$7,193,230.00
				Contingencies (15%)	$1,079,000.00
				Total Estimated Construction Costs	**$8,272,230.00**
				ENGINEERING	**$1,078,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$331,000.00**
				TOTAL ESTIMATED PROJECT COST	**$9,681,230.00**

Table 14 EUAC for Collection Alternative 2A

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$654,000.00	$0.00	$0.00	$654,000.00
Clearing	$20,000.00	$0.00	$0.00	$20,000.00
Remove Sewer Pipe	$2,800.00	$0.00	$0.00	$2,800.00
Remove Asphalt Concrete Pavement	$31,750.00	$0.00	$0.00	$31,750.00
Remove Concrete Pavement	$1,200.00	$0.00	$0.00	$1,200.00
Remove Existing Lift Station	$70,000.00	$0.00	$0.00	$70,000.00
Unclassified Excavation	$42,180.00	$0.00	$0.00	$42,180.00
Scarify & Recompact Subgrade	$15,800.00	$0.00	$0.00	$15,800.00
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Wet/Dry Well Lift Station	$734,000.00	$440,400.00	$243,838.80	$490,161.20
Sanitary Sewer Manhole Lined	$420,000.00	$252,000.00	$139,526.29	$280,473.71
Air Release Manhole	$15,000.00	$9,000.00	$4,983.08	$10,016.92
21" Force Main	$1,300,000.00	$780,000.00	$431,867.09	$868,132.91
8" PVC Sanitary Sewer Pipe	$182,000.00	$109,200.00	$60,461.39	$121,538.61
10" PVC Sanitary Sewer Pipe	$104,000.00	$62,400.00	$34,549.37	$69,450.63
24" PVC Sanitary Sewer Pipe	$314,500.00	$188,700.00	$104,478.61	$210,021.39
27" PVC Sanitary Sewer Pipe	$1,239,000.00	$743,400.00	$411,602.56	$827,397.44
30" PVC Sanitary Sewer Pipe	$362,500.00	$217,500.00	$120,424.48	$242,075.52
42" PVC Sanitary Sewer Pipe	$75,000.00	$45,000.00	$24,915.41	$50,084.59
8" Sanitary Sewer Pipe Bedding Material	$20,800.00	$0.00	$0.00	$20,800.00
10" Sanitary Sewer Pipe Bedding Material	$13,000.00	$0.00	$0.00	$13,000.00
21" Sanitary Sewer Pipe Bedding Material	$140,000.00	$0.00	$0.00	$140,000.00
24" Sanitary Sewer Pipe Bedding Material	$29,600.00	$0.00	$0.00	$29,600.00
27" Sanitary Sewer Pipe Bedding Material	$106,200.00	$0.00	$0.00	$106,200.00
30" Sanitary Sewer Pipe Bedding Material	$26,100.00	$0.00	$0.00	$26,100.00
42" Sanitary Sewer Pipe Bedding Material	$5,000.00	$0.00	$0.00	$5,000.00
Trench Stabilization Material	$199,500.00	$0.00	$0.00	$199,500.00
River Crossings	$140,000.00	$84,000.00	$46,508.76	$93,491.24
Highway Crossing	$90,000.00	$54,000.00	$29,898.49	$60,101.51
Irrigation Repairs	$10,000.00	$0.00	$0.00	$10,000.00
Reconnect Sewer Main	$3,500.00	$0.00	$0.00	$3,500.00
Salvage & Place Topsoil	$102,000.00	$0.00	$0.00	$102,000.00
Aggregate Base Course (12")	$124,800.00	$74,880.00	$41,459.24	$83,340.76
Asphalt Concrete Surfacing (4")	$210,000.00	$126,000.00	$69,763.15	$140,236.85
Concrete Surfacing	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Geotextile Fabric	$23,700.00	$0.00	$0.00	$23,700.00
Traffic Control	$15,000.00	$0.00	$0.00	$15,000.00
Seeding, Fertilizing & Mulching	$183,600.00	$0.00	$0.00	$183,600.00
Post Televising	$26,700.00	$0.00	$0.00	$26,700.00
Erosion Control	$25,000.00	$0.00	$0.00	$25,000.00
Bypass Pumping	$20,000.00	$0.00	$0.00	$20,000.00
Trench Dewatering	$30,000.00	$0.00	$0.00	$30,000.00
Remaining Capital Costs	$2,488,000.00	$0.00	$0.00	$2,488,000.00
Total Construction Cost	**$9,681,230.00**	**$3,225,480.00**	**$1,785,870.07**	**$7,895,359.93**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$3,000.00			$44,632.42
Supplies	$3,000.00			$44,632.42
Utilities	$4,000.00			$59,509.90
Labor	$4,500.00			$66,948.64
Total Annual Cost	**$14,500.00**			**$215,723.39**
			Total Net Present Worth	**$8,111,083.31**
			EUAC	**$545,192.20**

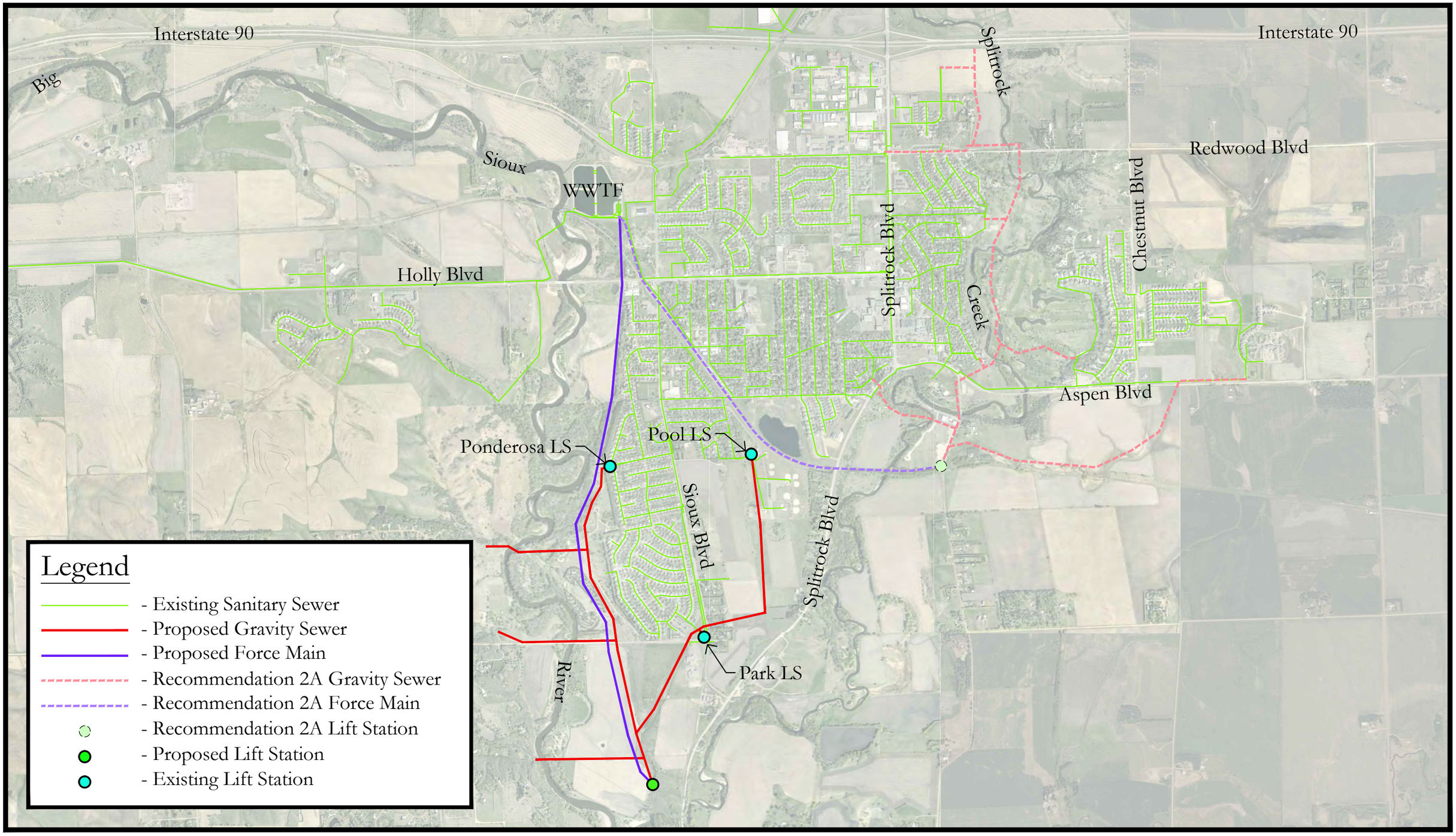

Figure 18 | Collection Alternative 2B

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Table 15 Cost Estimate for Collection Alternative 2B

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$424,000.00	$424,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Sewer Pipe	300	FT	$4.00	$1,200.00
4	Remove Asphalt Concrete Pavement	600	SY	$2.50	$1,500.00
5	Remove Existing Lift Station	3	EA	$10,000.00	$30,000.00
6	Unclassified Excavation	320	CY	$6.00	$1,920.00
7	Scarify & Recompact Subgrade	700	SY	$1.00	$700.00
8	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
9	Wet/Dry Well Lift Station	1	LS	$685,000.00	$685,000.00
10	Sanitary Sewer Manhole Lined	60	EA	$6,000.00	$360,000.00
11	Air Release Manhole	3	EA	$5,000.00	$15,000.00
12	12" Force Main	26,000	FT	$45.00	$1,170,000.00
13	8" PVC Sanitary Sewer Pipe	7,100	FT	$35.00	$248,500.00
14	10" PVC Sanitary Sewer Pipe	7,200	FT	$40.00	$288,000.00
15	12" PVC Sanitary Sewer Pipe	7,400	FT	$48.00	$355,200.00
16	18" PVC Sanitary Sewer Pipe	600	FT	$60.00	$36,000.00
17	21" PVC Sanitary Sewer Pipe	600	FT	$70.00	$42,000.00
18	8" Sanitary Sewer Pipe Bedding Material	7,100	FT	$4.00	$28,400.00
19	10" Sanitary Sewer Pipe Bedding Material	7,200	FT	$5.00	$36,000.00
20	12" Sanitary Sewer Pipe Bedding Material	33,400	FT	$5.00	$167,000.00
21	18" Sanitary Sewer Pipe Bedding Material	600	FT	$6.00	$3,600.00
22	21" Sanitary Sewer Pipe Bedding Material	600	FT	$7.00	$4,200.00
23	Trench Stabilization Material	10,900	TN	$15.00	$163,500.00
24	River Crossings	3	EA	$20,000.00	$60,000.00
25	Highway & Railroad Crossing	300	FT	$250.00	$75,000.00
26	Reconnect Sewer Main	3	EA	$500.00	$1,500.00
27	Salvage & Place Topsoil	20,000	CY	$5.00	$100,000.00
28	Aggregate Base Course (12")	500	TN	$12.00	$6,000.00
29	Asphalt Concrete Surfacing (4")	200	TN	$70.00	$14,000.00
30	Geotextile Fabric	700	SY	$1.50	$1,050.00
31	Traffic Control	1	LS	$10,000.00	$10,000.00
32	Seeding, Fertilizing & Mulching	119,700	SY	$1.50	$179,550.00
33	Post Televising	22,900	FT	$1.00	$22,900.00
34	Erosion Control	1	LS	$25,000.00	$25,000.00
35	Bypass Pumping	1	LS	$10,000.00	$10,000.00
36	Trench Dewatering	1	LS	$30,000.00	$30,000.00
				Subtotal	$4,656,720.00
				Contingencies (15%)	$699,000.00
				Total Estimated Construction Costs	**$5,355,720.00**
				ENGINEERING	**$710,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$215,000.00**
				TOTAL ESTIMATED PROJECT COST	**$6,280,720.00**

Table 16 EUAC for Collection Alternative 2B

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$424,000.00	$0.00	$0.00	$424,000.00
Clearing	$10,000.00	$0.00	$0.00	$10,000.00
Remove Sewer Pipe	$1,200.00	$0.00	$0.00	$1,200.00
Remove Asphalt Concrete Pavement	$1,500.00	$0.00	$0.00	$1,500.00
Remove Existing Lift Station	$30,000.00	$0.00	$0.00	$30,000.00
Unclassified Excavation	$1,920.00	$0.00	$0.00	$1,920.00
Scarify & Recompact Subgrade	$700.00	$0.00	$0.00	$700.00
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Wet/Dry Well Lift Station	$685,000.00	$411,000.00	$227,560.73	$457,439.27
Sanitary Sewer Manhole Lined	$360,000.00	$216,000.00	$119,593.96	$240,406.04
Air Release Manhole	$15,000.00	$9,000.00	$4,983.08	$10,016.92
12" Force Main	$1,170,000.00	$702,000.00	$388,680.38	$781,319.62
8" PVC Sanitary Sewer Pipe	$248,500.00	$149,100.00	$82,553.05	$165,946.95
10" PVC Sanitary Sewer Pipe	$288,000.00	$172,800.00	$95,675.17	$192,324.83
12" PVC Sanitary Sewer Pipe	$355,200.00	$213,120.00	$117,999.38	$237,200.62
18" PVC Sanitary Sewer Pipe	$36,000.00	$21,600.00	$11,959.40	$24,040.60
21" PVC Sanitary Sewer Pipe	$42,000.00	$25,200.00	$13,952.63	$28,047.37
8" Sanitary Sewer Pipe Bedding Material	$28,400.00	$0.00	$0.00	$28,400.00
10" Sanitary Sewer Pipe Bedding Material	$36,000.00	$0.00	$0.00	$36,000.00
12" Sanitary Sewer Pipe Bedding Material	$167,000.00	$0.00	$0.00	$167,000.00
18" Sanitary Sewer Pipe Bedding Material	$3,600.00	$0.00	$0.00	$3,600.00
21" Sanitary Sewer Pipe Bedding Material	$4,200.00	$0.00	$0.00	$4,200.00
Trench Stabilization Material	$163,500.00	$0.00	$0.00	$163,500.00
River Crossings	$60,000.00	$36,000.00	$19,932.33	$40,067.67
Highway & Railroad Crossing	$75,000.00	$45,000.00	$24,915.41	$50,084.59
Reconnect Sewer Main	$1,500.00	$0.00	$0.00	$1,500.00
Salvage & Place Topsoil	$100,000.00	$0.00	$0.00	$100,000.00
Aggregate Base Course (12")	$6,000.00	$3,600.00	$1,993.23	$4,006.77
Asphalt Concrete Surfacing (4")	$14,000.00	$8,400.00	$4,650.88	$9,349.12
Geotextile Fabric	$1,050.00	$0.00	$0.00	$1,050.00
Traffic Control	$10,000.00	$0.00	$0.00	$10,000.00
Seeding, Fertilizing & Mulching	$179,550.00	$0.00	$0.00	$179,550.00
Post Televising	$22,900.00	$0.00	$0.00	$22,900.00
Erosion Control	$25,000.00	$0.00	$0.00	$25,000.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Trench Dewatering	$30,000.00	$0.00	$0.00	$30,000.00
Remaining Capital Costs	$1,624,000.00	$0.00	$0.00	$1,624,000.00
Total Construction Cost	**$6,280,720.00**	**$2,042,820.00**	**$1,131,059.90**	**$5,149,660.10**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$3,000.00			$44,632.42
Supplies	$3,000.00			$44,632.42
Utilities	$4,000.00			$59,509.90
Labor	$4,500.00			$66,948.64
Total Annual Cost	**$14,500.00**			**$215,723.39**
			Total Net Present Worth	**$5,365,383.48**
			EUAC	**$360,638.05**

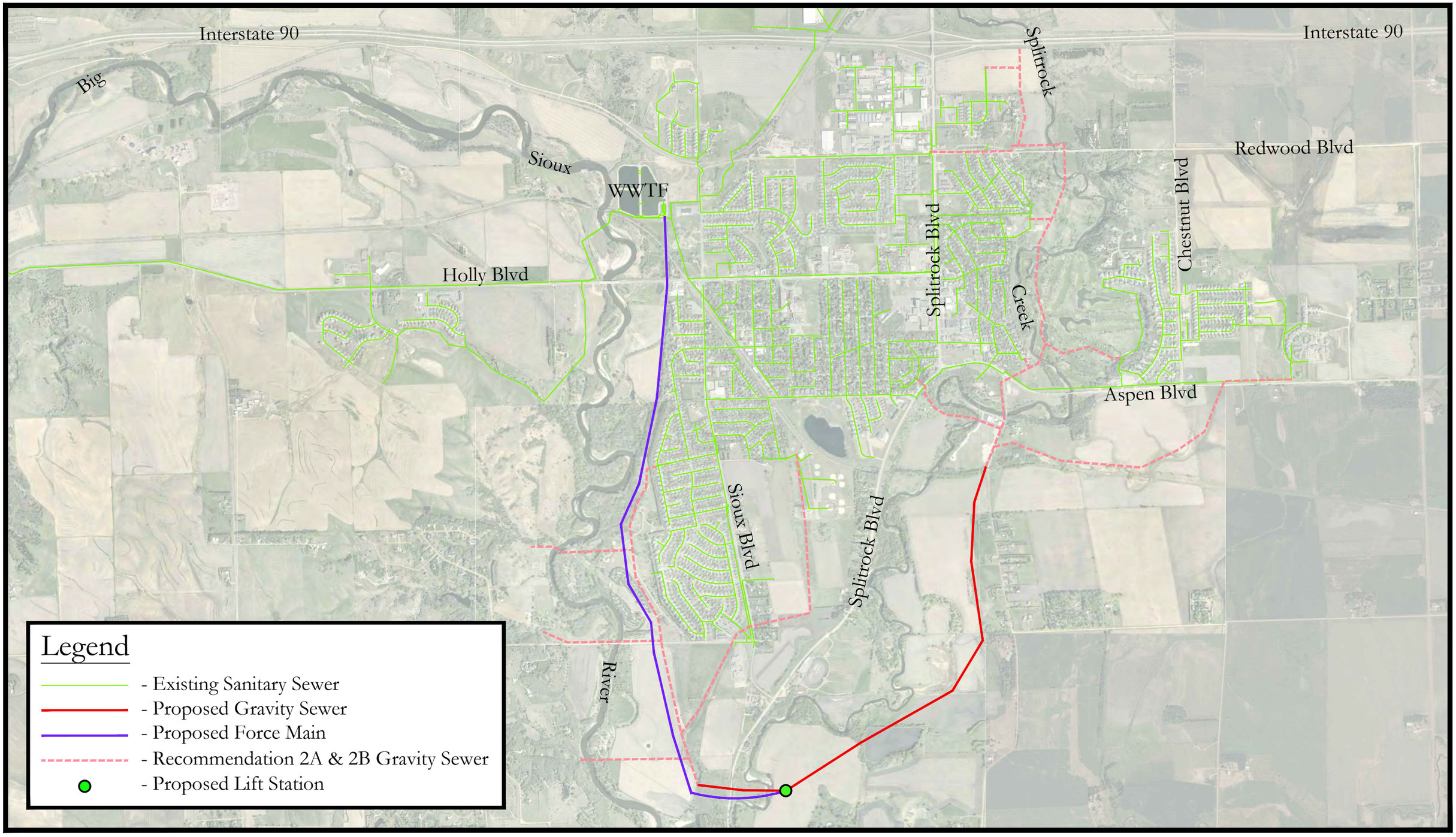

Figure 19 | Collection Alternative 2C

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STOCKWELL ENGINEERS

Table 17 Cost Estimate for Collection Alternative 2C

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$708,000.00	$708,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Remove Sewer Pipe	200	FT	$4.00	$800.00
4	Remove Existing Lift Station	2	EA	$10,000.00	$20,000.00
5	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
6	Wet/Dry Well Lift Station	1	LS	$783,000.00	$783,000.00
7	Sanitary Sewer Manhole Lined	30	EA	$6,000.00	$180,000.00
8	Air Release Manhole	2	EA	$5,000.00	$10,000.00
9	27" Force Main	30,000	FT	$100.00	$3,000,000.00
10	21" PVC Sanitary Sewer Pipe	2,000	FT	$70.00	$140,000.00
11	42" PVC Sanitary Sewer Pipe	5,300	FT	$150.00	$795,000.00
12	54" PVC Sanitary Sewer Pipe	4,400	FT	$180.00	$792,000.00
13	21" Sanitary Sewer Pipe Bedding Material	32,000	FT	$7.00	$224,000.00
14	42" Sanitary Sewer Pipe Bedding Material	5,300	FT	$10.00	$53,000.00
15	54" Sanitary Sewer Pipe Bedding Material	4,400	FT	$11.00	$48,400.00
16	Trench Stabilization Material	29,200	TN	$15.00	$438,000.00
17	River Crossings	2	EA	$20,000.00	$40,000.00
18	Highway & Railroad Crossing	500	FT	$400.00	$200,000.00
19	Reconnect Sewer Main	2	EA	$500.00	$1,000.00
20	Salvage & Place Topsoil	14,900	CY	$5.00	$74,500.00
21	Traffic Control	1	LS	$5,000.00	$5,000.00
22	Seeding, Fertilizing & Mulching	89,000	SY	$1.50	$133,500.00
23	Post Televising	11,700	FT	$1.00	$11,700.00
24	Erosion Control	1	LS	$25,000.00	$25,000.00
25	Bypass Pumping	1	LS	$10,000.00	$10,000.00
26	Trench Dewatering	1	LS	$30,000.00	$30,000.00
				Subtotal	$7,782,900.00
				Contingencies (15%)	$1,168,000.00
				Total Estimated Construction Costs	**$8,950,900.00**
				ENGINEERING	**$1,163,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$359,000.00**
				TOTAL ESTIMATED PROJECT COST	**$10,472,900.00**

Table 18 EUAC for Collection Alternative 2C

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$708,000.00	$0.00	$0.00	$708,000.00
Clearing	$10,000.00	$0.00	$0.00	$10,000.00
Remove Sewer Pipe	$800.00	$0.00	$0.00	$800.00
Remove Existing Lift Station	$20,000.00	$0.00	$0.00	$20,000.00
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Wet/Dry Well Lift Station	$783,000.00	$469,800.00	$260,116.87	$522,883.13
Sanitary Sewer Manhole Lined	$180,000.00	$108,000.00	$59,796.98	$120,203.02
Air Release Manhole	$10,000.00	$6,000.00	$3,322.05	$6,677.95
27" Force Main	$3,000,000.00	$1,800,000.00	$996,616.36	$2,003,383.64
21" PVC Sanitary Sewer Pipe	$140,000.00	$84,000.00	$46,508.76	$93,491.24
42" PVC Sanitary Sewer Pipe	$795,000.00	$477,000.00	$264,103.33	$530,896.67
54" PVC Sanitary Sewer Pipe	$792,000.00	$475,200.00	$263,106.72	$528,893.28
21" Sanitary Sewer Pipe Bedding Material	$224,000.00	$0.00	$0.00	$224,000.00
42" Sanitary Sewer Pipe Bedding Material	$53,000.00	$0.00	$0.00	$53,000.00
54" Sanitary Sewer Pipe Bedding Material	$48,400.00	$0.00	$0.00	$48,400.00
Trench Stabilization Material	$438,000.00	$0.00	$0.00	$438,000.00
River Crossings	$40,000.00	$24,000.00	$13,288.22	$26,711.78
Highway & Railroad Crossing	$200,000.00	$120,000.00	$66,441.09	$133,558.91
Reconnect Sewer Main	$1,000.00	$0.00	$0.00	$1,000.00
Salvage & Place Topsoil	$74,500.00	$0.00	$0.00	$74,500.00
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Seeding, Fertilizing & Mulching	$133,500.00	$0.00	$0.00	$133,500.00
Post Televising	$11,700.00	$0.00	$0.00	$11,700.00
Erosion Control	$25,000.00	$0.00	$0.00	$25,000.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Trench Dewatering	$30,000.00	$0.00	$0.00	$30,000.00
Remaining Capital Costs	$2,690,000.00	$0.00	$0.00	$2,690,000.00
Total Construction Cost	**$10,472,900.00**	**$3,594,000.00**	**$1,989,910.66**	**$8,482,989.34**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$3,000.00			$44,632.42
Supplies	$3,000.00			$44,632.42
Utilities	$4,000.00			$59,509.90
Labor	$4,500.00			$66,948.64
Total Annual Cost	**$14,500.00**			**$215,723.39**
			Total Net Present Worth	**$8,698,712.72**
			EUAC	**$584,690.13**

COLLECTION ALTERNATIVE 3: REPLACE LIFT STATIONS

Collection Alternative 3 proposes that existing lift stations be replaced if the City doesn't proceed with Collection Alternative 2. Currently there are seven wet/dry well lift stations and four of these need immediate attention. The Pioneer and Ponderosa lift stations are rusting out. Parts are no longer available for the pumps in the Wyams lift station and the existing two pumps vary 227% in pumping rate. The golf course lift station has been flooded in the past and should be replaced. The cost to replace these lift stations in shown in the following table.

Table 19 Cost Estimate for Collection Alternative 3

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$87,000.00	$87,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Remove Sewer Pipe	400	FT	$4.00	$1,600.00
4	Remove Asphalt Concrete Pavement	400	SY	$2.50	$1,000.00
5	Remove Existing Lift Station	4	EA	$10,000.00	$40,000.00
6	Unclassified Excavation	230	CY	$6.00	$1,380.00
7	Scarify & Recompact Subgrade	500	SY	$1.00	$500.00
8	Standby Generator & Tank	3	EA	$30,000.00	$90,000.00
9	Wet/Dry Well Lift Station	4	LS	$160,000.00	$640,000.00
10	6" Force Main	200	FT	$25.00	$5,000.00
11	8" PVC Sanitary Sewer Pipe	400	FT	$35.00	$14,000.00
12	Sanitary Sewer Pipe Bedding Material	600	FT	$4.00	$2,400.00
13	Reconnect Sewer Main	4	EA	$500.00	$2,000.00
14	Salvage & Place Topsoil	300	CY	$5.00	$1,500.00
15	Aggregate Base Course (12")	400	TN	$12.00	$4,800.00
16	Asphalt Concrete Surfacing (4")	100	TN	$70.00	$7,000.00
17	Geotextile Fabric	500	SY	$1.50	$750.00
18	Traffic Control	1	LS	$5,000.00	$5,000.00
19	Seeding, Fertilizing & Mulching	1,500	SY	$1.50	$2,250.00
20	Post Televising	400	FT	$1.00	$400.00
21	Erosion Control	1	LS	$5,000.00	$5,000.00
22	Bypass Pumping	4	EA	$5,000.00	$20,000.00
23	Trench Dewatering	4	EA	$5,000.00	$20,000.00
				Subtotal	$956,580.00
				Contingencies (15%)	$144,000.00
				Total Estimated Construction Costs	**$1,100,580.00**
				ENGINEERING	**$174,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$45,000.00**
				TOTAL ESTIMATED PROJECT COST	**$1,319,580.00**

WASTEWATER TREATMENT ALTERNATIVES

The following alternatives were developed to correct the deficiencies listed below:

1) The existing treatment system is overloaded hydraulically.
2) The existing treatment system is overloaded organically and has had several permit violations. The DENR is requiring the City to improvement the wastewater treatment system.
3) The flow meter is not reading correctly.
4) A bar screen needs to be added prior to flows entering the treatment system to remove solids.
5) The lift station that pumps to Sioux Falls needs to be a duplex station with back-up power.

It should be noted that total retention and wetlands will not be considered. These two types of treatment would require a substantial amount of land and storage that would not make them feasible options.

TREATMENT ALTERNATIVE 1: BUILD NEW TREATMENT SYSTEM

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 1 proposes the City build a new treatment system at a new site. Potential sites for the new treatment system are shown in Appendix F. The SD DENR recommends the treatment system be located at least 1/4 mile from a farm house or residence, 1,000 feet from a potable water well, avoid wetlands and has dikes above the 100-year flood elevation. Wind charts have also been included in Appendix G. The new site includes the purchase of 40 acres to allow for future expansion at the site.

This Alternative includes continuous treated discharge and would eliminate the need to pump to Sioux Falls. The proposed treatment system includes aeration cells followed by aerated rock beds. The aerated rock beds maintain adequate treatment even in the winter time when the water temperature drops. UV disinfection has been included in the alternative but it might not be needed. One variable that will change depending on the location is the length of the outfall piping. Cost estimates and a schematic of Treatment Alternative 1 are shown on the following pages. Nutrient removal has been included in the cost estimate to be conservative. The final design will determine what treatment processes are necessary.

Table 25 Cost Estimate for Treatment Alternative 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$864,000.00	$864,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Gravel Surfacing	4,500	TON	$12.00	$54,000.00
4	Unclassified Excavation	273,500	CY	$3.00	$820,500.00
5	Scarify & Recompact Liner	92,580	SY	$1.00	$92,580.00
6	Pond Depth Indicators	3	EA	$4,000.00	$12,000.00
7	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
8	River Discharge Structure	1	EA	$10,000.00	$10,000.00
9	Class B Rip Rap	25,700	TON	$35.00	$899,500.00
10	Type B Drainage Fabric	35,400	SY	$2.50	$88,500.00
11	12" PVC Sanitary Sewer Pipe Outfall	3,000	LF	$53.00	$159,000.00
12	12" Sanitary Bedding Material	3,000	LF	$5.00	$15,000.00
13	Outfall Manholes	8	EA	$5,000.00	$40,000.00
14	12" DIP Piping	240	LF	$65.00	$15,600.00
15	12" Gate Valve & Box	5	EA	$2,500.00	$12,500.00
16	Concrete Water Stop	6	EA	$300.00	$1,800.00
17	Pond Inlet Structure	3	EA	$2,500.00	$7,500.00
18	Pond Outlet Structure	3	EA	$2,000.00	$6,000.00
19	Bar Screen	1	LS	$275,000.00	$275,000.00
20	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
21	Blower & Bar Screen Buildings	2	EA	$70,000.00	$140,000.00
22	SCADA System	1	LS	$75,000.00	$75,000.00
23	Electrical Service	1	LS	$125,000.00	$125,000.00
24	Fine Bubble Aeration System	1	LS	$639,000.00	$639,000.00
25	Woven Wire Fence	6,000	FT	$6.00	$36,000.00
26	Salvage & Place Topsoil	33,100	CY	$3.00	$99,300.00
27	Seeding, Fertilizing & Mulching	56,390	SY	$1.50	$84,585.00
28	Aerated Rock Bed Equipment	1	LS	$1,580,000.00	$1,580,000.00
29	Install Rock Bed Equipment	1	LS	$790,000.00	$790,000.00
30	Clean Graded Rock	79,000	TON	$20.00	$1,580,000.00
31	Mulch Insulation	6,900	CY	$10.00	$69,000.00
32	Geotextile Fabric	37,700	SY	$1.50	$56,550.00
33	HDPE Liner	184,400	SF	$1.25	$230,500.00
34	Aerated Rock Bed Walls	2,900	LF	$16.00	$46,400.00
35	Influent Flow Splitter Structure	1	EA	$15,000.00	$15,000.00
36	Piping, Fittings, Valves	1	LS	$73,000.00	$73,000.00
37	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
38	Aeration Site Piping	2,200	LF	$30.00	$66,000.00
39	Concrete Anchor Posts	30	LF	$200.00	$6,000.00
40	UV Disinfection System	1	LS	$84,000.00	$84,000.00
41	TKN removal with Anoxic SAGR	1	LS	$500,000.00	$500,000.00
42	Phosphorus Removal	1	LS	$909,000.00	$909,000.00
				Subtotal	$10,625,815.00
				Contingencies (15%)	$1,594,000.00
				Total Estimated Construction Costs	**$12,219,815.00**
				ENGINEERING	**$1,575,000.00**
				LAND PURCHASE (40 AC.)	**$800,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$489,000.00**
				TOTAL ESTIMATED PROJECT COST	**$15,083,815.00**

Table 26 EUAC for Treatment Alternative 1

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$864,000.00	$0.00	$0.00	$864,000.00
Clearing	$10,000.00	$0.00	$0.00	$10,000.00
Gravel Surfacing	$54,000.00	$0.00	$0.00	$54,000.00
Unclassified Excavation	$820,500.00	$0.00	$0.00	$820,500.00
Scarify & Recompact Liner	$92,580.00	$0.00	$0.00	$92,580.00
Pond Depth Indicators	$12,000.00	$7,200.00	$3,986.47	$8,013.53
Pond Site Warning Signs	$3,000.00	$1,800.00	$996.62	$2,003.38
River Discharge Structure	$10,000.00	$6,000.00	$3,322.05	$6,677.95
Class B Rip Rap	$899,500.00	$539,700.00	$298,818.80	$600,681.20
Type B Drainage Fabric	$88,500.00	$53,100.00	$29,400.18	$59,099.82
12" PVC Sanitary Sewer Pipe Outfall	$159,000.00	$95,400.00	$52,820.67	$106,179.33
12" Sanitary Bedding Material	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Outfall Manholes	$40,000.00	$24,000.00	$13,288.22	$26,711.78
12" DIP Piping	$15,600.00	$9,360.00	$5,182.41	$10,417.59
12" Gate Valve & Box	$12,500.00	$7,500.00	$4,152.57	$8,347.43
Concrete Water Stop	$1,800.00	$1,080.00	$597.97	$1,202.03
Pond Inlet Structure	$7,500.00	$4,500.00	$2,491.54	$5,008.46
Pond Outlet Structure	$6,000.00	$3,600.00	$1,993.23	$4,006.77
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$140,000.00	$84,000.00	$46,508.76	$93,491.24
SCADA System	$75,000.00	$45,000.00	$24,915.41	$50,084.59
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$639,000.00	$383,400.00	$212,279.28	$426,720.72
Woven Wire Fence	$36,000.00	$0.00	$0.00	$36,000.00
Salvage & Place Topsoil	$99,300.00	$0.00	$0.00	$99,300.00
Seeding, Fertilizing & Mulching	$84,585.00	$0.00	$0.00	$84,585.00
Aerated Rock Bed Equipment	$1,580,000.00	$948,000.00	$524,884.61	$1,055,115.39
Install Rock Bed Equipment	$790,000.00	$0.00	$0.00	$790,000.00
Clean Graded Rock	$1,580,000.00	$948,000.00	$524,884.61	$1,055,115.39
Mulch Insulation	$69,000.00	$0.00	$0.00	$69,000.00
Geotextile Fabric	$56,550.00	$33,930.00	$18,786.22	$37,763.78
HDPE Liner	$230,500.00	$138,300.00	$76,573.36	$153,926.64
Aerated Rock Bed Walls	$46,400.00	$0.00	$0.00	$46,400.00
Influent Flow Splitter Structure	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Piping, Fittings, Valves	$73,000.00	$43,800.00	$24,251.00	$48,749.00
Effluent Level Control MH	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Aeration Site Piping	$66,000.00	$39,600.00	$21,925.56	$44,074.44
Concrete Anchor Posts	$6,000.00	$3,600.00	$1,993.23	$4,006.77
UV Disinfection System	$84,000.00	$50,400.00	$27,905.26	$56,094.74
TKN removal with Anoxic SAGR	$500,000.00	$300,000.00	$166,102.73	$333,897.27
Phosphorus Removal	$909,000.00	$545,400.00	$301,974.76	$607,025.24
Land Purchase	$800,000.00	$800,000.00	$442,940.60	$357,059.40
Remaining Capital Costs	$3,658,000.00	$0.00	$0.00	$3,658,000.00
Total Construction Cost	**$15,083,815.00**	**$5,395,670.00**	**$2,987,451.66**	**$12,096,363.34**

Annual Operation and Maintenance Cost Description	Annual Cost	Net Present Worth
Aeration Blowers	$74,000.00	$1,100,933.14
SAGR Blowers	$73,000.00	$1,086,055.66
Diffuser Membrane Replacement	$7,000.00	$104,142.32
Filter Replacement	$8,000.00	$119,019.80
Alum	$270,000.00	$4,016,918.21
Labor	$17,000.00	$252,917.07
Total Annual Cost	**$449,000.00**	**$6,679,986.21**
	Total Net Present Worth	**$18,776,349.56**
	EUAC	**$1,262,065.62**

TREATMENT ALTERNATIVE 4: AERATION EXPANSION WITH SIOUX FALLS PUMPING

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 4 proposes cell one be divided into two aeration cells. This system would improve the treatment and allow the City to meet the discharge limits easier. However this system would not be continuous discharge and would still need to pump to Sioux Falls to handle the hydraulic loading. The City would not receive the equalization credit and would only receive the partial treatment credit for 10 years due to the low BOD requirement. This alternative allows the City to compare the Sioux Falls pumping cost to other alternatives. The table below illustrates how the pumping charge will increase over time. This table assumes the Sioux Falls charge will increase by 3% annually and electrical cost will increase by 1% annually. It also shows the System Development Charge that Sioux Falls will require. Cost estimates and a schematic of this alternative are shown on the following pages.

Table 31 Future Treatment Cost Projections

Year	Charge per Thousand Gallons	Charge With Credits	Annual Cost to Pump to Sioux Falls	System Development Charge	Annual Sioux Falls Cost
2008	$ 0.75		$99,539		$99,539
2009	$ 1.10		$118,292		$118,292
2010	$ 1.10		$119,544		$119,544
2011	$ 1.41		$140,341		$140,341
2012	$ 1.41		$152,663		$152,663
2013	$ 3.89	$ 3.34	$569,000	$40,647	$609,647
2014	$ 3.89	$ 3.34	$578,000	$81,294	$659,294
2015	$ 4.01	$ 3.46	$639,000	$83,733	$722,733
2016	$ 4.13	$ 3.58	$718,000	$86,245	$804,245
2017	$ 4.25	$ 3.70	$773,000	$88,832	$861,832
2018	$ 4.38	$ 3.83	$826,000	$91,497	$917,497
2019	$ 4.51	$ 3.96	$882,000	$94,242	$976,242
2020	$ 4.64	$ 4.09	$940,000	$97,069	$1,037,069
2021	$ 4.78	$ 4.23	$1,002,000	$99,981	$1,101,981
2022	$ 4.93	$ 4.38	$1,066,000	$102,981	$1,168,981
2023	$ 5.08	$ 4.53	$1,133,000	$106,070	$1,239,070
2024	$ 5.23	$ 5.23	$1,346,000	$109,252	$1,455,252
2025	$ 5.38	$ 5.38	$1,423,000	$112,530	$1,535,530
2026	$ 5.55	$ 5.55	$1,504,000	$115,906	$1,619,906
2027	$ 5.71	$ 5.71	$1,589,000	$119,383	$1,708,383
2028	$ 5.88	$ 5.88	$1,683,000	$122,964	$1,805,964
2029	$ 6.06	$ 6.06	$1,780,000	$126,653	$1,906,653
2030	$ 6.24	$ 6.24	$1,882,000	$130,453	$2,012,453
2031	$ 6.43	$ 6.43	$1,989,000	$134,367	$2,123,367
2032	$ 6.62	$ 6.62	$2,100,000	$138,398	$2,238,398
2033	$ 6.82	$ 6.82	$2,217,000	$142,550	$2,359,550

Table 32 Cost Estimate for Treatment Alternative 4

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$449,000.00	$449,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	2,200	TON	$12.00	$26,400.00
4	On Site Borrow Material	23,900	CY	$3.00	$71,700.00
5	Pond Depth Indicators	2	EA	$4,000.00	$8,000.00
6	Class B Rip Rap	7,600	TON	$35.00	$266,000.00
7	Type B Drainage Fabric	10,400	SY	$2.50	$26,000.00
8	Cell Dewatering	1	LS	$5,000.00	$5,000.00
9	Bar Screen	1	LS	$275,000.00	$275,000.00
10	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
11	Blower & Bar Screen Buildings	2	EA	$90,000.00	$180,000.00
12	SCADA System	1	LS	$20,000.00	$20,000.00
13	Electrical Service	1	LS	$125,000.00	$125,000.00
14	Fine Bubble Aeration System	1	LS	$678,000.00	$678,000.00
15	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
16	Wet/Dry Well Lift Station	1	LS	$734,000.00	$734,000.00
17	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
18	Air Release Manhole	2	EA	$5,000.00	$10,000.00
19	Sludge Removal	11,900	CY	$30.00	$357,000.00
20	12" DIP Piping	190	FT	$65.00	$12,350.00
21	12" PVC Sanitary Sewer Pipe	20	FT	$50.00	$1,000.00
22	21" Sanitary Sewer Force Main	19,000	FT	$65.00	$1,235,000.00
23	21" Sanitary Sewer Pipe Bedding Material	19,000	FT	$7.00	$133,000.00
24	12" Gate Valve & Box	2	EA	$2,500.00	$5,000.00
25	River & Railroad Crossing	5	EA	$20,000.00	$100,000.00
26	Highway Crossing	100	FT	$300.00	$30,000.00
27	Connect to Existing Piping	4	EA	$500.00	$2,000.00
28	Concrete Water Stop	4	EA	$300.00	$1,200.00
29	Pond Inlet Structure	2	EA	$2,500.00	$5,000.00
30	Pond Outlet Structure	2	EA	$2,000.00	$4,000.00
31	Salvage & Place Topsoil	6,100	CY	$3.00	$18,300.00
32	Seeding, Fertilizing & Mulching	36,200	SY	$1.50	$54,300.00
33	Traffic Control	1	LS	$10,000.00	$10,000.00
34	Trench Dewatering	1	LS	$10,000.00	$10,000.00
				Subtotal	$4,937,250.00
				Contingencies (15%)	$741,000.00
				Total Estimated Construction Costs	**$5,678,250.00**
				ENGINEERING	**$751,000.00**
				SF PUMPING CHARGE DURING CONST	**$400,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$228,000.00**
				TOTAL ESTIMATED PROJECT COST	**$7,057,250.00**

Table 33 EUAC for Treatment Alternative 4

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$449,000.00	$0.00	$0.00	$449,000.00
Clearing	$5,000.00	$0.00	$0.00	$5,000.00
Gravel Surfacing	$26,400.00	$15,840.00	$8,770.22	$17,629.78
On Site Borrow Material	$71,700.00	$0.00	$0.00	$71,700.00
Pond Depth Indicators	$8,000.00	$4,800.00	$2,657.64	$5,342.36
Class B Rip Rap	$266,000.00	$159,600.00	$88,366.65	$177,633.35
Type B Drainage Fabric	$26,000.00	$15,600.00	$8,637.34	$17,362.66
Cell Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$180,000.00	$108,000.00	$59,796.98	$120,203.02
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$678,000.00	$406,800.00	$225,235.30	$452,764.70
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Wet/Dry Well Lift Station	$734,000.00	$440,400.00	$243,838.80	$490,161.20
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Air Release Manhole	$10,000.00	$6,000.00	$3,322.05	$6,677.95
Sludge Removal	$357,000.00	$0.00	$0.00	$357,000.00
12" DIP Piping	$12,350.00	$7,410.00	$4,102.74	$8,247.26
12" PVC Sanitary Sewer Pipe	$1,000.00	$600.00	$332.21	$667.79
21" Sanitary Sewer Force Main	$1,235,000.00	$741,000.00	$410,273.73	$824,726.27
21" Sanitary Sewer Pipe Bedding Material	$133,000.00	$0.00	$0.00	$133,000.00
12" Gate Valve & Box	$5,000.00	$3,000.00	$1,661.03	$3,338.97
River & Railroad Crossing	$100,000.00	$60,000.00	$33,220.55	$66,779.45
Highway Crossing	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Connect to Existing Piping	$2,000.00	$0.00	$0.00	$2,000.00
Concrete Water Stop	$1,200.00	$720.00	$398.65	$801.35
Pond Inlet Structure	$5,000.00	$3,000.00	$1,661.03	$3,338.97
Pond Outlet Structure	$4,000.00	$2,400.00	$1,328.82	$2,671.18
Salvage & Place Topsoil	$18,300.00	$0.00	$0.00	$18,300.00
Seeding, Fertilizing & Mulching	$54,300.00	$0.00	$0.00	$54,300.00
Traffic Control	$10,000.00	$0.00	$0.00	$10,000.00
Trench Dewatering	$10,000.00	$0.00	$0.00	$10,000.00
Remaining Capital Costs	$2,120,000.00	$0.00	$0.00	$2,120,000.00
Total Construction Cost	**$7,057,250.00**	**$2,287,170.00**	**$1,266,350.57**	**$5,790,899.43**

Annual Operation and Maintenance Cost Description	Annual Cost	Net Present Worth
Aeration Blowers	$74,000.00	$1,100,933.14
Lift Station Utilities	$10,000.00	$148,774.75
Labor	$9,000.00	$133,897.27
Total Annual Cost	**$93,000.00**	**$1,383,605.16**
	Total Net Present Worth	**$7,174,504.59**
	EUAC	**$482,239.40**

TREATMENT ALTERNATIVE 5: PUMPING ONLY TO SIOUX FALLS

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 5 proposes the City stop running the existing aeration system and pump everything to Sioux Falls. The City would add a new lift station and force main that would pump all of the wastewater to Sioux Falls. This alternative allows the City to compare the Sioux Falls pumping cost to other alternatives. The table below illustrates how the pumping charge will increase over time. This table assumes the Sioux Falls charge will increase by 3.0% annually and electrical cost will increase by 1% annually. It also shows the System Development Charge that Sioux Falls will require. The cost estimate for this alternative is shown on the following page.

Table 34 Future Treatment Cost Projections

Year	Charge per Thousand Gallons	Charge With Credits	Annual Cost to Pump to Sioux Falls	System Development Charge	Annual Sioux Falls Cost
2008	$ 0.75		$99,539		$99,539
2009	$ 1.10		$118,292		$118,292
2010	$ 1.10		$119,544		$119,544
2011	$ 1.41		$140,341		$140,341
2012	$ 1.41		$152,663		$152,663
2013	$ 3.89	$ 3.45	$990,000	$40,647	$1,030,647
2014	$ 3.89	$ 3.45	$1,000,000	$81,294	$1,081,294
2015	$ 4.01	$ 3.57	$1,078,000	$83,733	$1,161,733
2016	$ 4.13	$ 3.69	$1,176,000	$86,245	$1,262,245
2017	$ 4.25	$ 3.81	$1,246,000	$88,832	$1,334,832
2018	$ 4.38	$ 3.94	$1,313,000	$91,497	$1,404,497
2019	$ 4.51	$ 4.07	$1,384,000	$94,242	$1,478,242
2020	$ 4.64	$ 4.20	$1,458,000	$97,069	$1,555,069
2021	$ 4.78	$ 4.34	$1,535,000	$99,981	$1,634,981
2022	$ 4.93	$ 4.49	$1,615,000	$102,981	$1,717,981
2023	$ 5.08	$ 4.64	$1,699,000	$106,070	$1,805,070
2024	$ 5.23	$ 5.23	$1,786,000	$109,252	$1,895,252
2025	$ 5.38	$ 5.38	$1,877,000	$112,530	$1,989,530
2026	$ 5.55	$ 5.55	$1,972,000	$115,906	$2,087,906
2027	$ 5.71	$ 5.71	$2,070,000	$119,383	$2,189,383
2028	$ 5.88	$ 5.88	$2,178,000	$122,964	$2,300,964
2029	$ 6.06	$ 6.06	$2,291,000	$126,653	$2,417,653
2030	$ 6.24	$ 6.24	$2,408,000	$130,453	$2,538,453
2031	$ 6.43	$ 6.43	$2,531,000	$134,367	$2,665,367
2032	$ 6.62	$ 6.62	$2,658,000	$138,398	$2,796,398
2033	$ 6.82	$ 6.82	$2,791,000	$142,550	$2,933,550

Table 35 Cost Estimate for Treatment Alternative 5

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$288,000.00	$288,000.00
2	Bar Screen	1	LS	$275,000.00	$275,000.00
3	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
4	Bar Screen Buildings	1	EA	$90,000.00	$90,000.00
5	Electrical Service	1	LS	$70,000.00	$70,000.00
6	SCADA System	1	LS	$20,000.00	$20,000.00
7	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
8	Wet/Dry Well Lift Station	1	LS	$734,000.00	$734,000.00
9	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
10	Air Release Manhole	2	EA	$5,000.00	$10,000.00
11	12" PVC Sanitary Sewer Pipe	20	FT	$50.00	$1,000.00
12	21" Sanitary Sewer Force Main	19,000	FT	$65.00	$1,235,000.00
13	21" Sanitary Sewer Pipe Bedding Material	19,000	FT	$7.00	$133,000.00
14	River & Railroad Crossing	5	EA	$20,000.00	$100,000.00
15	Highway Crossing	100	FT	$300.00	$30,000.00
16	Connect to Existing Piping	4	EA	$500.00	$2,000.00
17	Aggregate Base Course (8")	100	TON	$25.00	$2,500.00
18	Salvage & Place Topsoil	5,400	CY	$5.00	$27,000.00
19	Seeding, Fertilizing & Mulching	32,000	SY	$1.50	$48,000.00
20	Traffic Control	1	LS	$10,000.00	$10,000.00
21	Trench Dewatering	1	LS	$10,000.00	$10,000.00
				Subtotal	$3,165,500.00
				Contingencies (15%)	$475,000.00
				Total Estimated Construction Costs	**$3,640,500.00**
				ENGINEERING	**$494,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$146,000.00**
				TOTAL ESTIMATED PROJECT COST	**$4,280,500.00**

Table 36 EUAC for Treatment Alternative 5

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$288,000.00	$0.00	$0.00	$288,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Bar Screen Buildings	$90,000.00	$54,000.00	$29,898.49	$60,101.51
Electrical Service	$70,000.00	$42,000.00	$23,254.38	$46,745.62
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Wet/Dry Well Lift Station	$734,000.00	$440,400.00	$243,838.80	$490,161.20
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Air Release Manhole	$10,000.00	$6,000.00	$3,322.05	$6,677.95
12" PVC Sanitary Sewer Pipe	$1,000.00	$600.00	$332.21	$667.79
21" Sanitary Sewer Force Main	$1,235,000.00	$741,000.00	$410,273.73	$824,726.27
21" Sanitary Sewer Pipe Bedding Material	$133,000.00	$0.00	$0.00	$133,000.00
River & Railroad Crossing	$100,000.00	$60,000.00	$33,220.55	$66,779.45
Highway Crossing	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Connect to Existing Piping	$2,000.00	$0.00	$0.00	$2,000.00
Aggregate Base Course (8")	$2,500.00	$1,500.00	$830.51	$1,669.49
Salvage & Place Topsoil	$27,000.00	$0.00	$0.00	$27,000.00
Seeding, Fertilizing & Mulching	$48,000.00	$0.00	$0.00	$48,000.00
Traffic Control	$10,000.00	$0.00	$0.00	$10,000.00
Trench Dewatering	$10,000.00	$0.00	$0.00	$10,000.00
Remaining Capital Costs	$1,115,000.00	$0.00	$0.00	$1,115,000.00
Total Construction Cost	**$4,280,500.00**	**$1,582,500.00**	**$876,191.88**	**$3,404,308.12**

Annual Operation and Maintenance Cost Description	Annual Cost	Net Present Worth
Equipment	$2,000.00	$29,754.95
Supplies	$2,000.00	$29,754.95
Utilities	$15,000.00	$223,162.12
Labor	$3,000.00	$44,632.42
Total Annual Cost	**$22,000.00**	**$327,304.45**
	Total Net Present Worth	**$3,731,612.57**
	EUAC	**$250,822.98**

TREATMENT ALTERNATIVE 6: MECHANICAL TREATMENT

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 6 proposes a mechanical plant be built on a new site. This alternative would be continuous discharge and eliminate the need to pump to Sioux Falls. The cost estimate for this alternative is shown on the following page.

Table 39 Comparison of Wastewater Treatment Alternatives

Treatment Alternatives	Capital Cost	Equivalent Uniform Annual Cost
1: Build New Treatment System	$15,083,815	$1,262,066
2: Add Aerated Rock Beds	$7,624,325	$473,985
3: Rehabilitate Existing Site	$7,944,900	$520,047
4: Aeration Expansion with Sioux Falls Pumping	$7,057,250	$1,689,732
5: Pumping only to Sioux Falls	$4,280,500	$1,978,515
6: Mechanical Treatment	$21,121,420	$1,408,350

Treatment Alternative 1 "Build New Treatment System" is recommended. This alternative is not the lowest capital or EUAC cost. However, the long term planning of the City needs to include moving the treatment system downstream. If the City maintained the existing site then the relocation of the facility in the future will only cost the City more money.

Treatment Alternative 2 "Add Aerated Rock Beds" is not recommended. This alternative has the lowest EUAC. However, the future of the treatment system needs to include moving the facility downstream. It is anticipated that expansion at the current site will have a lot of negative feedback with the adjacent residential areas.

Treatment Alternative 3 "Rehabilitate the Existing Site" is not recommended. Any future expansion will be difficult because the site is land locked. In addition, it would benefit the adjacent residential areas to have the system moved.

Treatment Alternative 4 "Aeration Expansion with Sioux Falls Pumping" is not recommended. The future pumping costs are only going to increase. This alternative can't provide enough treatment to get the partial treatment credit from the City of Sioux Falls or guarantee the City will always be able to meet the discharge limits. In addition, the EUAC shows this is one of the most costly Treatment Alternatives for the City.

Treatment Alternative 5 "Pumping Only to Sioux Falls" is not recommended because it is the highest cost EUAC. In addition, the future rate increases by the City of Sioux Falls can't be determined and the System Development Cost will hurt development in Brandon.

Treatment Alternative 6 "Mechanical Treatment" is not recommended because of the large capital cost and high O&M. The City would have to hire two new employees to run the plant. In addition, these employees would have to have higher certification by the DENR to operate the plant.

COST RECOVERY

Cost recovery is not included in any of these cost estimates. Development will drive the time and amount of cost recovery that the City receives. There are areas shown in the future basins map that the City will be able assess a cost recovery. It is anticipated that the City will incur these cost and it could take several years before these areas develop.

IMPACT ON OWNER'S BUDGET

There are several Alternatives the City needs to implement. Due to budget constraints and priority, the following Alternatives should be implemented immediately. The following figure shows the combined recommendation.

Table 40 Recommended Improvements

Collection Alternative 2A: Future Basin Improvements	$9,682,000.00
Collection Alternative 5: Core Basin Trunk Sewer	$2,903,000.00
Treatment Alternative 1: Build New Treatment System	$15,084,000.00
Combined Project Cost	**$27,669,000.00**

The City provided SEI their sewer revenue and expenses for the last two years. SEI evaluated the budget and the cost of the recommended improvements to determine how the City could fund the project. Based on Brandon's current revenue and expenses, they will have to obtain grant and loan dollars from various funding agencies to finance the project. The loan is based on an interest rate of 3.0% over 20 years. The owner's sewer fees will be used to make the loan payments. The current monthly residential sewer rate is a minimum of $7.21 plus $4.22 per thousand. The sewer bill for 5,000 gallons of water usage is $28.31.

Table 41 Funding Proposed Improvements

Revenue	$1,079,552.90
Expenses	$482,466.94
Current Debt Payment	$0.00
Net Cash From Operations	**$597,085.97**
New Loan Payment	$1,859,791.41
Debt Reserves (10%)	$185,979.14
Net Fund Balance	**-$1,448,684.59**
Monthly Rate Increase	$40.00
Number of Customers	3,025
Annual Revenue Generated	$1,452,000.00
Fund Balance After Increase	**$3,315.41**

The above table shows that the City of Brandon would have to increase their sewer rates to fund the project. The City will try to obtain grant dollars to reduce the loan amount. In order to be eligible for grant dollars the DENR has required a minimum monthly sewer rate of $22.00 for 5,000 gallons. The City of Brandon currently meets this requirement. The City should also consider raising their rates annually by 3%. This will keep up with the cost of inflation and reduce a bigger jump in rates to complete any future projects.

The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table.

Table 42 Potential Grant/Loan Amounts

Grant/Loan	60/40	50/50	40/60	30/70	20/80	10/90
Expenses	$482,467	$482,467	$482,467	$482,467	$482,467	$482,467
Current Debt	$0	$0	$0	$0	$0	$0
Project Cost	$27,669,000	$27,669,000	$27,669,000	$27,669,000	$27,669,000	$27,669,000
Grant Amount	$16,601,400	$13,834,500	$11,067,600	$8,300,700	$5,533,800	$2,766,900
Loan Amount	$11,067,600	$13,834,500	$16,601,400	$19,368,300	$22,135,200	$24,902,100
Annual Loan Payment	$743,917	$929,896	$1,115,875	$1,301,854	$1,487,833	$1,673,812
Debt Reserves	$74,392	$92,990	$111,587	$130,185	$148,783	$167,381
Total Annual Cost	$1,300,775	$1,505,352	$1,709,929	$1,914,506	$2,119,083	$2,323,660
Revenue	$1,079,553	$1,079,553	$1,079,553	$1,079,553	$1,079,553	$1,079,553
Balance After Project	-$221,222	-$425,799	-$630,376	-$834,953	-$1,039,530	-$1,244,108
Minimum Rate Increase	$6.09	$11.73	$17.37	$23.00	$28.64	$34.27
Current Rate (5,000 gal)	$28.31	$28.31	$28.31	$28.31	$28.31	$28.31
Proposed Monthly Rate	$34.40	$40.04	$45.68	$51.31	$56.95	$62.58

SEI has completed rate analysis for the City of Brandon over the last several years. It is recommended that the City include the proposed improvements in the next rate analysis to verify the potential rate increases. The above calculations are very cursory and do not include any increase in customers. The rate analysis is more in depth and will give a more accurate depiction of the impact on rates.

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI will request comments on the proposed improvements prior to construction from various agencies. These comment letters will be provided to the funding agencies.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The City of Brandon will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. The City will work with SEI to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies.

Table 20 EUAC for Collection Alternative 3

Capital Cost		Salvage	Present Worth	Net Present
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$87,000.00	$0.00	$0.00	$87,000.00
Clearing	$5,000.00	$0.00	$0.00	$5,000.00
Remove Sewer Pipe	$1,600.00	$0.00	$0.00	$1,600.00
Remove Asphalt Concrete Pavement	$1,000.00	$0.00	$0.00	$1,000.00
Remove Existing Lift Station	$40,000.00	$0.00	$0.00	$40,000.00
Unclassified Excavation	$1,380.00	$0.00	$0.00	$1,380.00
Scarify & Recompact Subgrade	$500.00	$0.00	$0.00	$500.00
Standby Generator & Tank	$90,000.00	$54,000.00	$29,898.49	$60,101.51
Wet/Dry Well Lift Station	$640,000.00	$384,000.00	$212,611.49	$427,388.51
6" Force Main	$5,000.00	$3,000.00	$1,661.03	$3,338.97
8" PVC Sanitary Sewer Pipe	$14,000.00	$8,400.00	$4,650.88	$9,349.12
Sanitary Sewer Pipe Bedding Material	$2,400.00	$0.00	$0.00	$2,400.00
Reconnect Sewer Main	$2,000.00	$0.00	$0.00	$2,000.00
Salvage & Place Topsoil	$1,500.00	$0.00	$0.00	$1,500.00
Aggregate Base Course (12")	$4,800.00	$2,880.00	$1,594.59	$3,205.41
Asphalt Concrete Surfacing (4")	$7,000.00	$4,200.00	$2,325.44	$4,674.56
Geotextile Fabric	$750.00	$0.00	$0.00	$750.00
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Seeding, Fertilizing & Mulching	$2,250.00	$0.00	$0.00	$2,250.00
Post Televising	$400.00	$0.00	$0.00	$400.00
Erosion Control	$5,000.00	$0.00	$0.00	$5,000.00
Bypass Pumping	$20,000.00	$0.00	$0.00	$20,000.00
Trench Dewatering	$20,000.00	$0.00	$0.00	$20,000.00
Remaining Capital Costs	$363,000.00	$0.00	$0.00	$363,000.00
Total Construction Cost	**$1,319,580.00**	**$456,480.00**	**$252,741.91**	**$1,066,838.09**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$3,000.00			$44,632.42
Supplies	$3,000.00			$44,632.42
Utilities	$11,200.00			$166,627.72
Labor	$4,500.00			$66,948.64
Total Annual Cost	**$21,700.00**			**$322,841.20**
			Total Net Present Worth	**$1,389,679.30**
			EUAC	**$93,408.28**

COLLECTION ALTERNATIVE 4: NEW SCADA SYSTEM

Collection Alternative 4 proposes adding a Supervisory Control and Data Acquisition (SCADA) system for the wastewater treatment system. SCADA allows the remote monitoring of several facilities at one location. The base unit consisting of a computer and radio antenna would be installed at the City Shop. Radios would then be installed at each lift station and the wastewater treatment ponds. The computer screen would show an icon for each site. The screen would show if pumps are running and what the water level is in the wet well. The influent at the wastewater treatment plant could be shown on the screen. All alarm conditions would show up on the screen as well. The installation of a SCADA system would reduce the time spent going to each individual site multiple times a week. In addition, new safety criteria for the City requires confined space entry for the dry well lift stations. The SCADA system would reduce the number of trips down the lift stations with harnesses on for confined space entry.

Table 21 Cost Estimate for Collection Alternative 4

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$20,000.00	$20,000.00
2	SCADA System	1	LS	$172,000.00	$172,000.00
3	Radio Installation	1	LS	$20,000.00	$20,000.00
				Subtotal	$212,000.00
				Contingencies (15%)	$32,000.00
				Total Estimated Construction Costs	**$244,000.00**
				ENGINEERING	**$55,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$10,000.00**
				TOTAL ESTIMATED PROJECT COST	**$309,000.00**

Table 22 EUAC for Collection Alternative 4

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$20,000.00	$0.00	$0.00	$20,000.00
SCADA System	$172,000.00	$0.00	$0.00	$172,000.00
Radio Installation	$20,000.00	$0.00	$0.00	$20,000.00
Remaining Capital Costs	$97,000.00	$0.00	$0.00	$97,000.00
Total Construction Cost	**$309,000.00**	**$0.00**	**$0.00**	**$309,000.00**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$500.00			$7,438.74
Supplies	$500.00			$7,438.74
Utilities	$500.00			$7,438.74
Labor	$500.00			$7,438.74
Total Annual Cost	**$2,000.00**			**$29,754.95**
			Total Net Present Worth	**$338,754.95**
			EUAC	**$22,769.65**

COLLECTION ALTERNATIVE 5: CORE BASIN TRUNK SEWER

Collection Alternative 5 proposes a new trunk sewer be installed along the railroad tracks from the WWTP to north of Aspen Park and across Splitrock Blvd. The trunk sewer would take all the existing gravity sewer that flows to the treatment system and carry the wastewater to the south side of McHardy Park where a new lift station would pump to a new treatment system. This alternative is only needed if the existing wastewater treatment system is abandoned and a new treatment system is built. This alternative would reduce the amount of clay pipe replacement that is part of Collection Alternative 1 because it would be replaced as part of the trunk sewer in this alternative. A figure showing the proposed improvements and cost estimates are shown on the following pages.

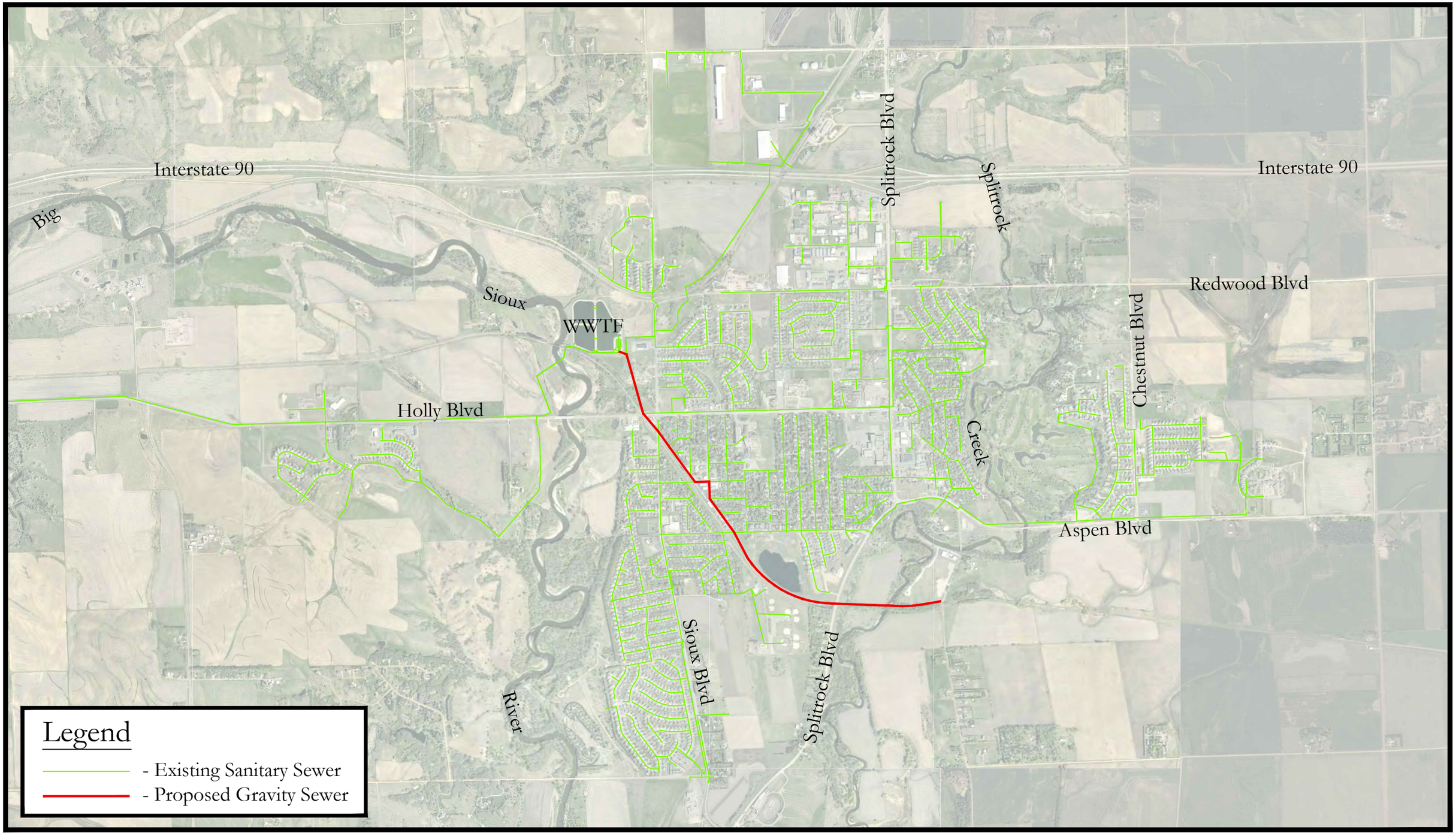

Figure 20 | Collection Alternative 5

0 500 1000 2000

Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

Table 23 Cost Estimate for Collection Alternative 5

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$195,000.00	$195,000.00
2	Clearing	1	LS	$15,000.00	$15,000.00
3	Remove Sewer Pipe	5,140	FT	$4.00	$20,560.00
4	Remove Asphalt Concrete Pavement	6,000	SY	$2.50	$15,000.00
5	Remove Concrete Pavement	300	SY	$4.00	$1,200.00
6	Remove Existing Manhole	20	EA	$400.00	$8,000.00
7	Remove Concrete Curb & Gutter	3,460	FT	$4.00	$13,840.00
8	Saw Existing Surfacing	510	FT	$7.00	$3,570.00
9	Unclassified Excavation	3,430	CY	$6.00	$20,580.00
10	Scarify & Recompact Subgrade	7,700	SY	$1.00	$7,700.00
11	Sanitary Sewer Manhole Lined	30	EA	$6,000.00	$180,000.00
12	4" PVC Sanitary Service Line	700	FT	$25.00	$17,500.00
13	8" PVC Sanitary Sewer Pipe	280	FT	$35.00	$9,800.00
14	24" PVC Sanitary Sewer Pipe	10,100	FT	$85.00	$858,500.00
15	8" Sanitary Sewer Pipe Bedding Material	280	FT	$4.00	$1,120.00
16	24" Sanitary Sewer Pipe Bedding Material	10,100	FT	$8.00	$80,800.00
17	Trench Stabilization Material	7,100	TN	$15.00	$106,500.00
18	River Crossings	1	EA	$20,000.00	$20,000.00
19	Highway Crossing	300	FT	$300.00	$90,000.00
20	Sewer Wye	20	EA	$300.00	$6,000.00
21	Sewer Fittings	60	EA	$100.00	$6,000.00
22	Reconnect Sewer Main	14	EA	$500.00	$7,000.00
23	Reconnect Sewer Service	20	EA	$250.00	$5,000.00
24	Salvage & Place Topsoil	5,800	CY	$5.00	$29,000.00
25	Aggregate Base Course (12")	5,100	TN	$12.00	$61,200.00
26	Asphalt Concrete Surfacing (4")	1,400	TN	$70.00	$98,000.00
27	Concrete Surfacing	300	SY	$50.00	$15,000.00
28	Concrete Curb & Gutter	3,460	FT	$12.00	$41,520.00
29	Geotextile Fabric	7,700	SY	$1.50	$11,550.00
30	6" Concrete Fillet Section	240	SY	$45.00	$10,800.00
31	6" Concrete Valley Gutter	280	SY	$45.00	$12,600.00
32	4" Concrete Sidewalk	6,720	SF	$4.00	$26,880.00
33	Detectable Warning Surface	450	SF	$45.00	$20,250.00
34	Traffic Control	1	LS	$15,000.00	$15,000.00
35	Seeding, Fertilizing & Mulching	34,600	SY	$1.50	$51,900.00
36	Post Televising	10,380	FT	$1.00	$10,380.00
37	Erosion Control	1	LS	$15,000.00	$15,000.00
38	Bypass Pumping	1	LS	$10,000.00	$10,000.00
39	Trench Dewatering	1	LS	$20,000.00	$20,000.00
				Subtotal	$2,137,750.00
				Contingencies (15%)	$321,000.00
				Total Estimated Construction Costs	**$2,458,750.00**
				ENGINEERING	**$345,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$99,000.00**
				TOTAL ESTIMATED PROJECT COST	**$2,902,750.00**

Table 24 EUAC for Collection Alternative 5

Capital Cost		Salvage	Present Worth	Net Present
Description	Price	Value	of Salvage Value	Worth
Mobilization	$195,000.00	$0.00	$0.00	$195,000.00
Clearing	$15,000.00	$0.00	$0.00	$15,000.00
Remove Sewer Pipe	$20,560.00	$0.00	$0.00	$20,560.00
Remove Asphalt Concrete Pavement	$15,000.00	$0.00	$0.00	$15,000.00
Remove Concrete Pavement	$1,200.00	$0.00	$0.00	$1,200.00
Remove Existing Manhole	$8,000.00	$0.00	$0.00	$8,000.00
Remove Concrete Curb & Gutter	$13,840.00	$0.00	$0.00	$13,840.00
Saw Existing Surfacing	$3,570.00	$0.00	$0.00	$3,570.00
Unclassified Excavation	$20,580.00	$0.00	$0.00	$20,580.00
Scarify & Recompact Subgrade	$7,700.00	$0.00	$0.00	$7,700.00
Sanitary Sewer Manhole Lined	$180,000.00	$108,000.00	$59,796.98	$120,203.02
4" PVC Sanitary Service Line	$17,500.00	$10,500.00	$5,813.60	$11,686.40
8" PVC Sanitary Sewer Pipe	$9,800.00	$5,880.00	$3,255.61	$6,544.39
24" PVC Sanitary Sewer Pipe	$858,500.00	$515,100.00	$285,198.38	$573,301.62
8" Sanitary Sewer Pipe Bedding Material	$1,120.00	$0.00	$0.00	$1,120.00
24" Sanitary Sewer Pipe Bedding Material	$80,800.00	$0.00	$0.00	$80,800.00
Trench Stabilization Material	$106,500.00	$0.00	$0.00	$106,500.00
River Crossings	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Highway Crossing	$90,000.00	$54,000.00	$29,898.49	$60,101.51
Sewer Wye	$6,000.00	$3,600.00	$1,993.23	$4,006.77
Sewer Fittings	$6,000.00	$3,600.00	$1,993.23	$4,006.77
Reconnect Sewer Main	$7,000.00	$0.00	$0.00	$7,000.00
Reconnect Sewer Service	$5,000.00	$0.00	$0.00	$5,000.00
Salvage & Place Topsoil	$29,000.00	$0.00	$0.00	$29,000.00
Aggregate Base Course (12")	$61,200.00	$36,720.00	$20,330.97	$40,869.03
Asphalt Concrete Surfacing (4")	$98,000.00	$58,800.00	$32,556.13	$65,443.87
Concrete Surfacing	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Concrete Curb & Gutter	$41,520.00	$24,912.00	$13,793.17	$27,726.83
Geotextile Fabric	$11,550.00	$0.00	$0.00	$11,550.00
6" Concrete Fillet Section	$10,800.00	$6,480.00	$3,587.82	$7,212.18
6" Concrete Valley Gutter	$12,600.00	$7,560.00	$4,185.79	$8,414.21
4" Concrete Sidewalk	$26,880.00	$16,128.00	$8,929.68	$17,950.32
Detectable Warning Surface	$20,250.00	$12,150.00	$6,727.16	$13,522.84
Traffic Control	$15,000.00	$0.00	$0.00	$15,000.00
Seeding, Fertilizing & Mulching	$51,900.00	$0.00	$0.00	$51,900.00
Post Televising	$10,380.00	$0.00	$0.00	$10,380.00
Erosion Control	$15,000.00	$0.00	$0.00	$15,000.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Trench Dewatering	$20,000.00	$0.00	$0.00	$20,000.00
Remaining Capital Costs	$765,000.00	$0.00	$0.00	$765,000.00
Total Construction Cost	**$2,902,750.00**	**$884,430.00**	**$489,687.45**	**$2,413,062.55**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,000.00			$14,877.47
Supplies	$1,000.00			$14,877.47
Utilities	$0.00			$0.00
Labor	$3,000.00			$44,632.42
Total Annual Cost	**$5,000.00**			**$74,387.37**
			Total Net Present Worth	**$2,487,449.93**
			EUAC	**$167,195.71**

WASTEWATER TREATMENT ALTERNATIVES

The following alternatives were developed to correct the deficiencies listed below:

1) The existing treatment system is overloaded hydraulically.
2) The existing treatment system is overloaded organically and has had several permit violations. The DENR is requiring the City to improvement the wastewater treatment system.
3) The flow meter is not reading correctly.
4) A bar screen needs to be added prior to flows entering the treatment system to remove solids.
5) The lift station that pumps to Sioux Falls needs to be a duplex station with back-up power.

It should be noted that total retention and wetlands will not be considered. These two types of treatment would require a substantial amount of land and storage that would not make them feasible options.

TREATMENT ALTERNATIVE 1: BUILD NEW TREATMENT SYSTEM

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 1 proposes the City build a new treatment system at a new site. Potential sites for the new treatment system are shown in Appendix F. The SD DENR recommends the treatment system be located at least 1/4 mile from a farm house or residence, 1,000 feet from a potable water well, avoid wetlands and has dikes above the 100-year flood elevation. Wind charts have also been included in Appendix G. The new site includes the purchase of 40 acres to allow for future expansion at the site.

This Alternative includes continuous treated discharge and would eliminate the need to pump to Sioux Falls. The proposed treatment system includes two aeration cells followed by aerated rock beds. The aerated rock beds maintain adequate treatment even in the winter time when the water temperature drops. UV disinfection has been included in the alternative but it might not be needed. One variable that will change depending on the location is the length of the outfall piping. Cost estimates and a schematic of Treatment Alternative 1 are shown on the following pages.

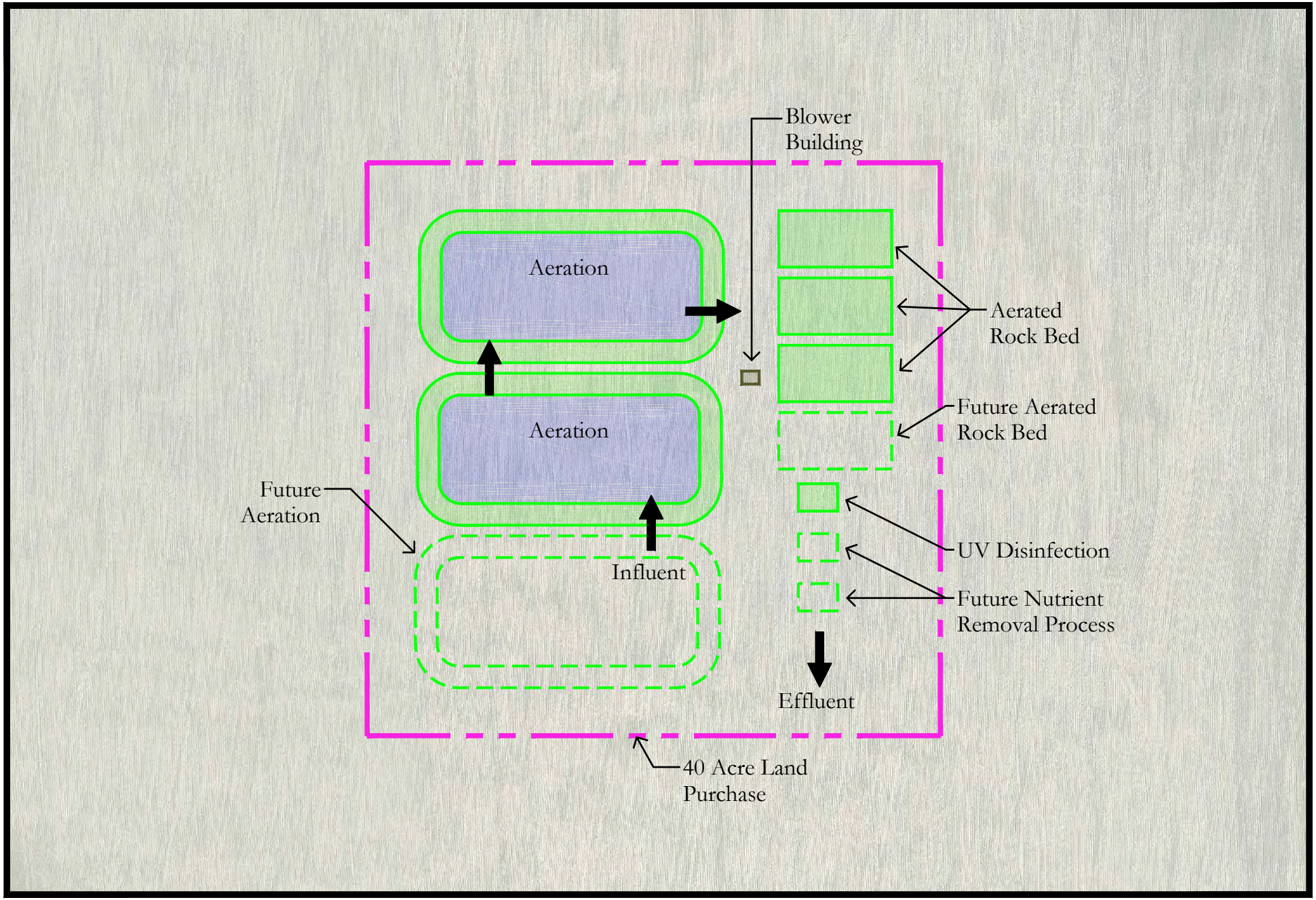

Figure 21 | Treatment Alternative 1

0 75 150 300

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STOCKWELL ENGINEERS

Table 25 Cost Estimate for Treatment Alternative 1

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$658,000.00	$658,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Gravel Surfacing	3,600	TON	$12.00	$43,200.00
4	Unclassified Excavation	171,500	CY	$3.00	$514,500.00
5	Scarify & Recompact Liner	18,800	SY	$1.00	$18,800.00
6	Pond Depth Indicators	2	EA	$4,000.00	$8,000.00
7	Pond Site Warning Signs	20	EA	$150.00	$3,000.00
8	Class B Rip Rap	16,700	TON	$35.00	$584,500.00
9	Type B Drainage Fabric	23,000	SY	$2.50	$57,500.00
10	12" PVC Sanitary Sewer Pipe Outfall	1,000	LF	$53.00	$53,000.00
11	12" DIP Piping	130	LF	$65.00	$8,450.00
12	12" Gate Valve & Box	4	EA	$2,500.00	$10,000.00
13	Concrete Water Stop	4	EA	$300.00	$1,200.00
14	Pond Inlet Structure	2	EA	$2,500.00	$5,000.00
15	Pond Outlet Structure	2	EA	$2,000.00	$4,000.00
16	Bar Screen	1	LS	$275,000.00	$275,000.00
17	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
18	Blower & Bar Screen Buildings	2	EA	$90,000.00	$180,000.00
19	SCADA System	1	LS	$20,000.00	$20,000.00
20	Electrical Service	1	LS	$125,000.00	$125,000.00
21	Fine Bubble Aeration System	1	LS	$678,000.00	$678,000.00
22	4" Fiber Reinforced Concrete	300,000	SF	$3.00	$900,000.00
23	Barb Wire Fence	6,000	FT	$5.00	$30,000.00
24	Salvage & Place Topsoil	10,600	CY	$3.00	$31,800.00
25	Seeding, Fertilizing & Mulching	20,720	SY	$1.50	$31,080.00
Aerated Rock Beds					
26	Aerated Rock Bed Equipment	1	LS	$1,237,500.00	$1,237,500.00
27	Install Rock Bed Equipment	1	LS	$123,750.00	$123,750.00
28	Clean Graded Rock	51,800	TON	$20.00	$1,036,000.00
29	Mulch Insulation	4,600	CY	$10.00	$46,000.00
30	Geotextile Fabric	28,700	SY	$1.50	$43,050.00
31	HDPE Liner	137,300	SF	$1.25	$171,625.00
32	Aerated Rock Bed Walls	2,400	LF	$16.00	$38,400.00
33	Influent Flow Splitter Structure	2	EA	$15,000.00	$30,000.00
34	Piping, Fittings, Valves	1	LS	$73,000.00	$73,000.00
35	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
36	Aeration Site Piping	100	LF	$65.00	$6,500.00
37	Discharge Piping	1,200	LF	$50.00	$60,000.00
38	UV Disinfection System	1	LS	$84,000.00	$84,000.00
				Subtotal	$7,234,855.00
				Contingencies (15%)	$1,086,000.00
				Total Estimated Construction Costs	**$8,320,855.00**
				ENGINEERING	**$1,084,000.00**
				LAND PURCHASE (40 AC.)	**$800,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$333,000.00**
				TOTAL ESTIMATED PROJECT COST	**$10,537,855.00**

Table 26 EUAC for Treatment Alternative 1

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$658,000.00	$0.00	$0.00	$658,000.00
Clearing	$10,000.00	$0.00	$0.00	$10,000.00
Gravel Surfacing	$43,200.00	$25,920.00	$14,351.28	$28,848.72
Unclassified Excavation	$514,500.00	$0.00	$0.00	$514,500.00
Scarify & Recompact Liner	$18,800.00	$0.00	$0.00	$18,800.00
Pond Depth Indicators	$8,000.00	$4,800.00	$2,657.64	$5,342.36
Pond Site Warning Signs	$3,000.00	$1,800.00	$996.62	$2,003.38
Class B Rip Rap	$584,500.00	$350,700.00	$194,174.09	$390,325.91
Type B Drainage Fabric	$57,500.00	$34,500.00	$19,101.81	$38,398.19
12" PVC Sanitary Sewer Pipe Outfall	$53,000.00	$31,800.00	$17,606.89	$35,393.11
12" DIP Piping	$8,450.00	$5,070.00	$2,807.14	$5,642.86
12" Gate Valve & Box	$10,000.00	$6,000.00	$3,322.05	$6,677.95
Concrete Water Stop	$1,200.00	$720.00	$398.65	$801.35
Pond Inlet Structure	$5,000.00	$3,000.00	$1,661.03	$3,338.97
Pond Outlet Structure	$4,000.00	$2,400.00	$1,328.82	$2,671.18
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$180,000.00	$108,000.00	$59,796.98	$120,203.02
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$678,000.00	$406,800.00	$225,235.30	$452,764.70
4" Fiber Reinforced Concrete	$900,000.00	$540,000.00	$298,984.91	$601,015.09
Barb Wire Fence	$30,000.00	$0.00	$0.00	$30,000.00
Salvage & Place Topsoil	$31,800.00	$0.00	$0.00	$31,800.00
Seeding, Fertilizing & Mulching	$31,080.00	$0.00	$0.00	$31,080.00
Aerated Rock Beds				
Aerated Rock Bed Equipment	$1,237,500.00	$742,500.00	$411,104.25	$826,395.75
Install Rock Bed Equipment	$123,750.00	$0.00	$0.00	$123,750.00
Clean Graded Rock	$1,036,000.00	$621,600.00	$344,164.85	$691,835.15
Mulch Insulation	$46,000.00	$0.00	$0.00	$46,000.00
Geotextile Fabric	$43,050.00	$25,830.00	$14,301.44	$28,748.56
HDPE Liner	$171,625.00	$102,975.00	$57,014.76	$114,610.24
Aerated Rock Bed Walls	$38,400.00	$0.00	$0.00	$38,400.00
Influent Flow Splitter Structure	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Piping, Fittings, Valves	$73,000.00	$43,800.00	$24,251.00	$48,749.00
Effluent Level Control MH	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Aeration Site Piping	$6,500.00	$3,900.00	$2,159.34	$4,340.66
Discharge Piping	$60,000.00	$36,000.00	$19,932.33	$40,067.67
UV Disinfection System	$84,000.00	$50,400.00	$27,905.26	$56,094.74
Land Purchase	$800,000.00	$480,000.00	$265,764.36	$534,235.64
Remaining Capital Costs	$2,503,000.00	$0.00	$0.00	$2,503,000.00
Total Construction Cost	**$10,537,855.00**	**$3,919,515.00**	**$2,170,140.42**	**$8,367,714.58**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,500.00			$22,316.21
Supplies	$1,500.00			$22,316.21
Utilities	$51,000.00			$758,751.22
Labor	$10,000.00			$148,774.75
Total Annual Cost	**$64,000.00**			**$952,158.39**
			Total Net Present Worth	**$9,319,872.97**
			EUAC	**$626,441.86**

TREATMENT ALTERNATIVE 2: ADD AERATED ROCK BEDS

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 2 proposes the City add aeration to cell three and constructed aerated rock beds to the north of the existing site. This system would have continuous discharge and eliminate the need to pump to Sioux Falls. UV disinfection has been included in the alternative but it might not be needed. This alternative includes the purchase of 15 acres. Cost estimates and a schematic of this alternative are shown on the following pages.

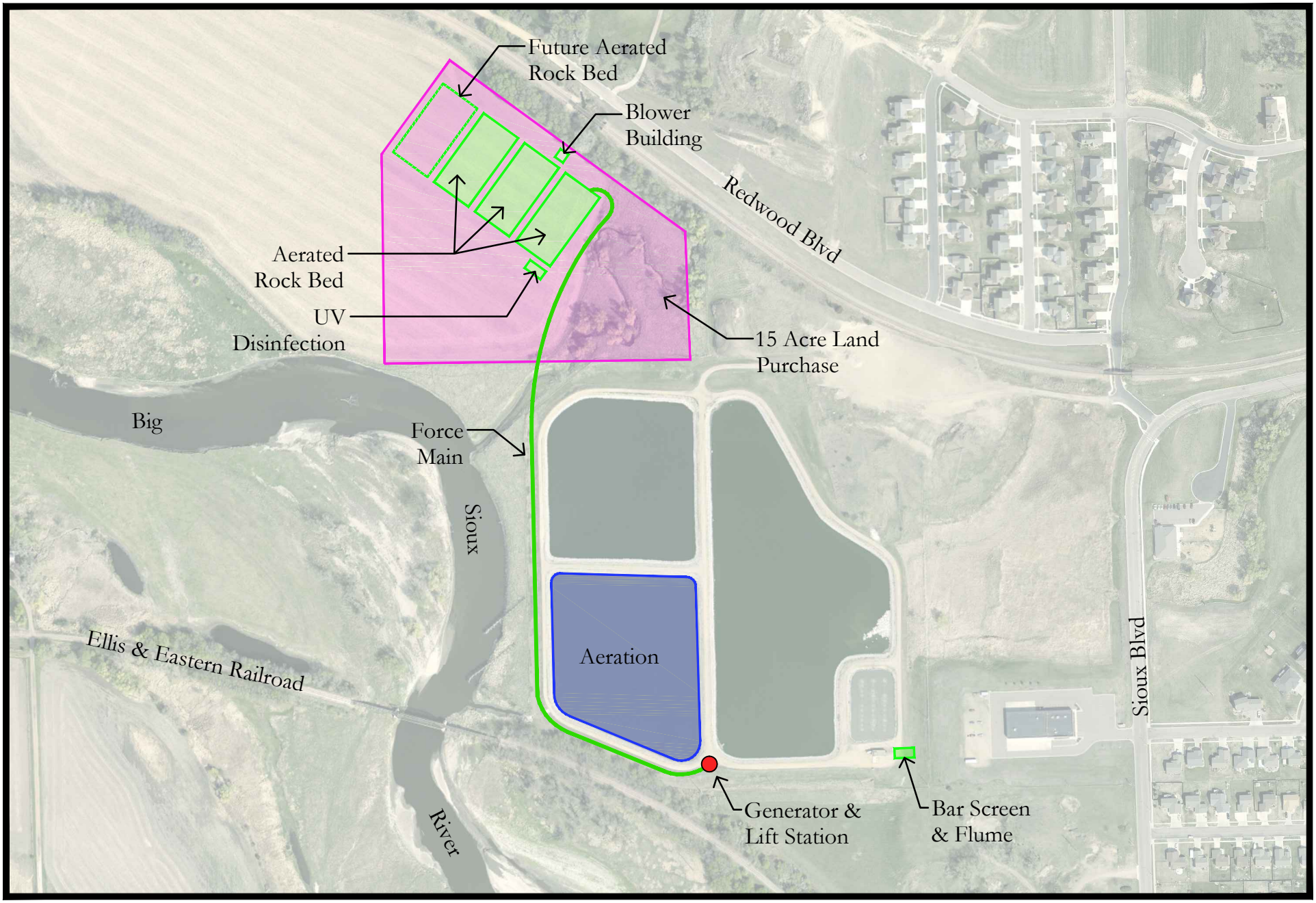

Figure 22 | Treatment Alternative 2

0 100 200 400

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STOCKWELL ENGINEERS

Table 27 Cost Estimate for Treatment Alternative 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$481,000.00	$481,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	2,300	TON	$12.00	$27,600.00
4	Unclassified Excavation	15,600	CY	$3.00	$46,800.00
5	Pond Site Warning Signs	10	EA	$150.00	$1,500.00
6	12" DIP Piping	40	FT	$65.00	$2,600.00
7	12" PVC Sanitary Sewer Pipe	20	FT	$50.00	$1,000.00
8	12" Sanitary Sewer Force Main	1,800	FT	$40.00	$72,000.00
9	Sanitary Sewer Pipe Bedding Material	1,860	FT	$5.00	$9,300.00
10	Trench Dewatering	1	LS	$5,000.00	$5,000.00
11	Bar Screen	1	LS	$275,000.00	$275,000.00
12	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
13	Blower & Bar Screen Buildings	2	EA	$90,000.00	$180,000.00
14	SCADA System	1	LS	$20,000.00	$20,000.00
15	Electrical Service	1	LS	$125,000.00	$125,000.00
16	Fine Bubble Aeration System	1	LS	$255,000.00	$255,000.00
17	Standby Generator & Tank	1	LS	$30,000.00	$30,000.00
18	Wet/Dry Well Lift Station	1	LS	$160,000.00	$160,000.00
19	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
20	Connect to Existing Piping	4	EA	$500.00	$2,000.00
21	Barb Wire Fence	2,000	FT	$5.00	$10,000.00
22	Salvage & Place Topsoil	2,000	CY	$3.00	$6,000.00
23	Seeding, Fertilizing & Mulching	8,000	SY	$1.50	$12,000.00
24	Sludge Removal	11,900	CY	$30.00	$357,000.00
Aerated Rock Beds					
25	Aerated Rock Bed Equipment	1	LS	$1,397,000.00	$1,397,000.00
26	Install Rock Bed Equipment	1	LS	$139,700.00	$139,700.00
27	Clean Graded Rock	53,800	TON	$20.00	$1,076,000.00
28	Mulch Insulation	4,700	CY	$10.00	$47,000.00
29	Geotextile Fabric	28,700	SY	$1.50	$43,050.00
30	HDPE Liner	142,300	SF	$1.25	$177,875.00
31	Aerated Rock Bed Walls	2,400	LF	$16.00	$38,400.00
32	Influent Flow Splitter Structure	2	EA	$15,000.00	$30,000.00
33	Piping, Fittings, Valves	1	LS	$73,000.00	$73,000.00
34	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
35	Aeration Site Piping	100	LF	$65.00	$6,500.00
36	Discharge Piping	900	LF	$50.00	$45,000.00
37	UV Disinfection System	1	LS	$84,000.00	$84,000.00
				Subtotal	$5,286,325.00
				Contingencies (15%)	$793,000.00
		Total Estimated Construction Costs			**$6,079,325.00**
				ENGINEERING	**$801,000.00**
		SF PUMPING CHARGE DURING CONST			**$200,000.00**
		LAND PURCHASE (15 AC.)			**$300,000.00**
		LEGAL, ADMINISTRATION & TESTING (4%)			**$244,000.00**
		TOTAL ESTIMATED PROJECT COST			**$7,624,325.00**

Table 28 EUAC for Treatment Alternative 2

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$481,000.00	$0.00	$0.00	$481,000.00
Clearing	$5,000.00	$0.00	$0.00	$5,000.00
Gravel Surfacing	$27,600.00	$16,560.00	$9,168.87	$18,431.13
Unclassified Excavation	$46,800.00	$0.00	$0.00	$46,800.00
Pond Site Warning Signs	$1,500.00	$900.00	$498.31	$1,001.69
12" DIP Piping	$2,600.00	$1,560.00	$863.73	$1,736.27
12" PVC Sanitary Sewer Pipe	$1,000.00	$600.00	$332.21	$667.79
12" Sanitary Sewer Force Main	$72,000.00	$43,200.00	$23,918.79	$48,081.21
Sanitary Sewer Pipe Bedding Material	$9,300.00	$0.00	$0.00	$9,300.00
Trench Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$180,000.00	$108,000.00	$59,796.98	$120,203.02
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$255,000.00	$153,000.00	$84,712.39	$170,287.61
Standby Generator & Tank	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Wet/Dry Well Lift Station	$160,000.00	$96,000.00	$53,152.87	$106,847.13
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Connect to Existing Piping	$2,000.00	$0.00	$0.00	$2,000.00
Barb Wire Fence	$10,000.00	$0.00	$0.00	$10,000.00
Salvage & Place Topsoil	$6,000.00	$0.00	$0.00	$6,000.00
Seeding, Fertilizing & Mulching	$12,000.00	$0.00	$0.00	$12,000.00
Sludge Removal	$357,000.00	$0.00	$0.00	$357,000.00
Aerated Rock Beds				
Aerated Rock Bed Equipment	$1,397,000.00	$838,200.00	$464,091.02	$932,908.98
Install Rock Bed Equipment	$139,700.00	$0.00	$0.00	$139,700.00
Clean Graded Rock	$1,076,000.00	$645,600.00	$357,453.07	$718,546.93
Mulch Insulation	$47,000.00	$0.00	$0.00	$47,000.00
Geotextile Fabric	$43,050.00	$25,830.00	$14,301.44	$28,748.56
HDPE Liner	$177,875.00	$106,725.00	$59,091.04	$118,783.96
Aerated Rock Bed Walls	$38,400.00	$23,040.00	$12,756.69	$25,643.31
Influent Flow Splitter Structure	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Piping, Fittings, Valves	$73,000.00	$43,800.00	$24,251.00	$48,749.00
Effluent Level Control MH	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Aeration Site Piping	$6,500.00	$3,900.00	$2,159.34	$4,340.66
Discharge Piping	$45,000.00	$27,000.00	$14,949.25	$30,050.75
UV Disinfection System	$84,000.00	$50,400.00	$27,905.26	$56,094.74
Land Purchase	$300,000.00	$180,000.00	$99,661.64	$200,338.36
Remaining Capital Costs	$2,038,000.00	$0.00	$0.00	$2,038,000.00
Total Construction Cost	**$7,624,325.00**	**$2,673,315.00**	**$1,480,149.70**	**$6,144,175.30**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,500.00			$22,316.21
Supplies	$1,500.00			$22,316.21
Utilities	$53,000.00			$788,506.17
Labor	$5,000.00			$74,387.37
Total Annual Cost	**$61,000.00**			**$907,525.97**
			Total Net Present Worth	**$7,051,701.27**

TREATMENT ALTERNATIVE 3: REHABILITATE EXISTING SITE

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 3 proposes the existing site be modified to add aeration to cells one and two and convert cell three to aerated rock beds. This system would have continuous discharge and eliminate the need to pump to Sioux Falls. UV disinfection has been included in the alternative but it might not be needed. This also provides another alternative if the City is unable to purchase land for a new site or expand to the north. Cost estimates and a schematic of this alternative are shown on the following pages.

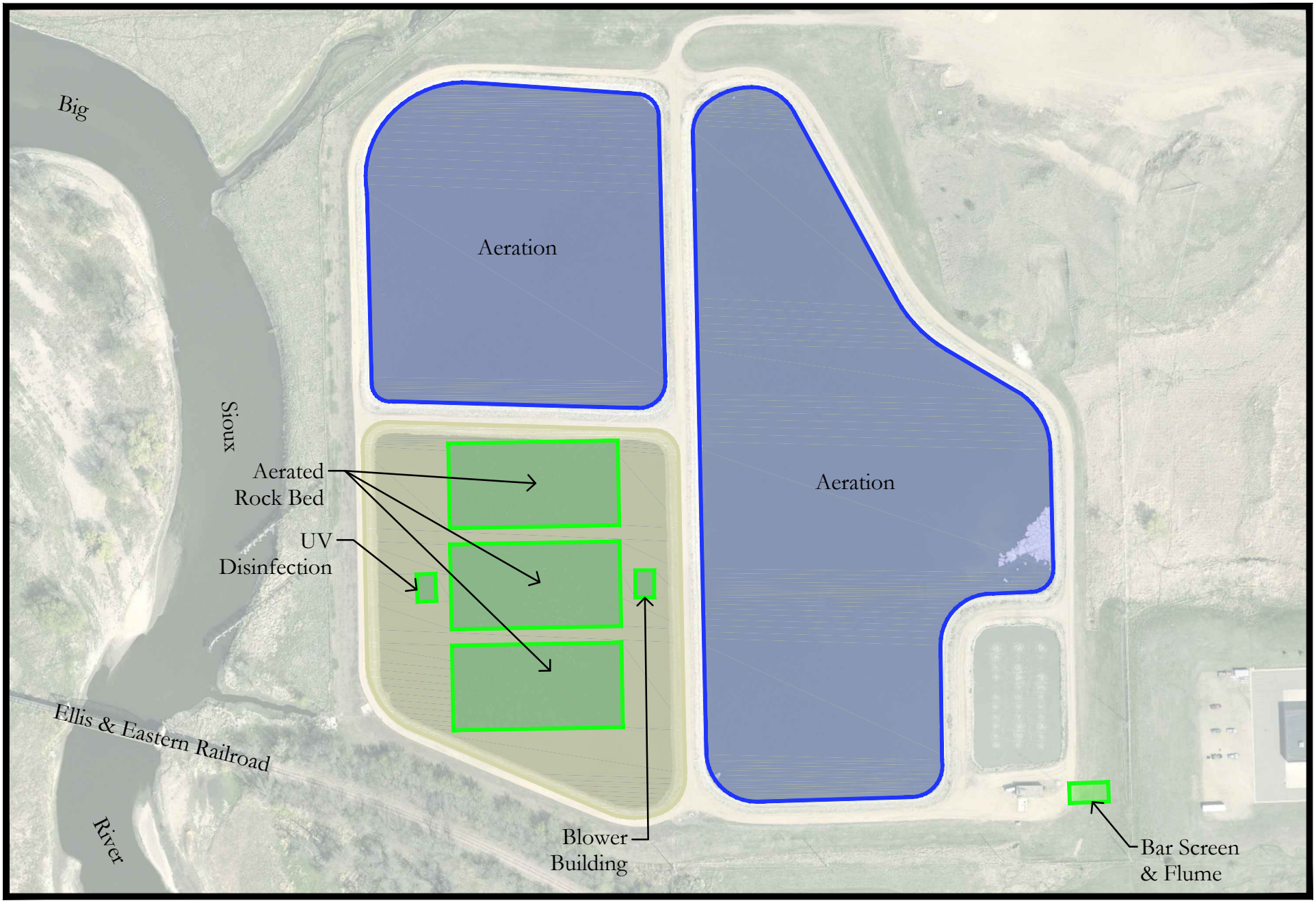

Figure 23 | Treatment Alternative 3

0 50 100 200

Brandon SOUTH DAKOTA *Building a Better Life*

STOCKWELL ENGINEERS

Table 29 Cost Estimate for Treatment Alternative 3

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$496,000.00	$496,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	1,400	TON	$12.00	$16,800.00
4	On Site Borrow Material	30,200	CY	$3.00	$90,600.00
5	Class B Rip Rap	1,400	TON	$35.00	$49,000.00
6	Type B Drainage Fabric	1,800	SY	$2.50	$4,500.00
7	12" DIP Piping	150	FT	$65.00	$9,750.00
8	12" Gate Valve & Box	2	EA	$2,500.00	$5,000.00
9	Cell Dewatering	1	LS	$5,000.00	$5,000.00
10	Bar Screen	1	LS	$275,000.00	$275,000.00
11	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
12	Blower & Bar Screen Buildings	2	EA	$90,000.00	$180,000.00
13	SCADA System	1	LS	$20,000.00	$20,000.00
14	Electrical Service	1	LS	$125,000.00	$125,000.00
15	Fine Bubble Aeration System	1	LS	$690,000.00	$690,000.00
16	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
17	Salvage & Place Topsoil	800	CY	$3.00	$2,400.00
18	Seeding, Fertilizing & Mulching	4,450	SY	$1.50	$6,675.00
19	Sludge Removal	11,900	CY	$30.00	$357,000.00
Aerated Rock Beds					
20	Aerated Rock Bed Equipment	1	LS	$1,331,000.00	$1,331,000.00
21	Install Rock Bed Equipment	1	LS	$133,100.00	$133,100.00
22	Clean Graded Rock	53,800	TON	$20.00	$1,076,000.00
23	Mulch Insulation	4,700	CY	$10.00	$47,000.00
24	Geotextile Fabric	28,700	SY	$1.50	$43,050.00
25	HDPE Liner	142,300	SF	$1.25	$177,875.00
26	Aerated Rock Bed Walls	2,400	LF	$16.00	$38,400.00
27	Influent Flow Splitter Structure	2	EA	$15,000.00	$30,000.00
28	Piping, Fittings, Valves	1	LS	$73,000.00	$73,000.00
29	Effluent Level Control MH	3	EA	$5,000.00	$15,000.00
30	Aeration Site Piping	150	LF	$65.00	$9,750.00
31	Discharge Piping	500	LF	$50.00	$25,000.00
32	UV Disinfection System	1	LS	$84,000.00	$84,000.00
				Subtotal	$5,450,900.00
				Contingencies (15%)	$818,000.00
				Total Estimated Construction Costs	**$6,268,900.00**
				ENGINEERING	**$825,000.00**
				SF PUMPING CHARGE DURING CONST	**$600,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$251,000.00**
				TOTAL ESTIMATED PROJECT COST	**$7,944,900.00**

Table 30 EUAC for Treatment Alternative 3

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$496,000.00	$0.00	$0.00	$496,000.00
Clearing	$5,000.00	$0.00	$0.00	$5,000.00
Gravel Surfacing	$16,800.00	$10,080.00	$5,581.05	$11,218.95
On Site Borrow Material	$90,600.00	$0.00	$0.00	$90,600.00
Class B Rip Rap	$49,000.00	$29,400.00	$16,278.07	$32,721.93
Type B Drainage Fabric	$4,500.00	$2,700.00	$1,494.92	$3,005.08
12" DIP Piping	$9,750.00	$5,850.00	$3,239.00	$6,511.00
12" Gate Valve & Box	$5,000.00	$3,000.00	$1,661.03	$3,338.97
Cell Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$180,000.00	$108,000.00	$59,796.98	$120,203.02
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$690,000.00	$414,000.00	$229,221.76	$460,778.24
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Salvage & Place Topsoil	$2,400.00	$0.00	$0.00	$2,400.00
Seeding, Fertilizing & Mulching	$6,675.00	$0.00	$0.00	$6,675.00
Sludge Removal	$357,000.00	$0.00	$0.00	$357,000.00
Aerated Rock Beds				
Aerated Rock Bed Equipment	$1,331,000.00	$798,600.00	$442,165.46	$888,834.54
Install Rock Bed Equipment	$133,100.00	$0.00	$0.00	$133,100.00
Clean Graded Rock	$1,076,000.00	$645,600.00	$357,453.07	$718,546.93
Mulch Insulation	$47,000.00	$0.00	$0.00	$47,000.00
Geotextile Fabric	$43,050.00	$25,830.00	$14,301.44	$28,748.56
HDPE Liner	$177,875.00	$106,725.00	$59,091.04	$118,783.96
Aerated Rock Bed Walls	$38,400.00	$23,040.00	$12,756.69	$25,643.31
Influent Flow Splitter Structure	$30,000.00	$18,000.00	$9,966.16	$20,033.84
Piping, Fittings, Valves	$73,000.00	$43,800.00	$24,251.00	$48,749.00
Effluent Level Control MH	$15,000.00	$9,000.00	$4,983.08	$10,016.92
Aeration Site Piping	$9,750.00	$5,850.00	$3,239.00	$6,511.00
Discharge Piping	$25,000.00	$15,000.00	$8,305.14	$16,694.86
UV Disinfection System	$84,000.00	$50,400.00	$27,905.26	$56,094.74
Remaining Capital Costs	$2,494,000.00	$0.00	$0.00	$2,494,000.00
Total Construction Cost	**$7,944,900.00**	**$2,578,875.00**	**$1,427,860.56**	**$6,517,039.44**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,500.00			$22,316.21
Supplies	$1,500.00			$22,316.21
Utilities	$74,000.00			$1,100,933.14
Labor	$5,000.00			$74,387.37
Total Annual Cost	**$82,000.00**			**$1,219,952.94**
			Total Net Present Worth	**$7,736,992.38**
			EUAC	**$520,047.42**

TREATMENT ALTERNATIVE 4: AERATION EXPANSION WITH SIOUX FALLS PUMPING

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 4 proposes cell one be divided into two aeration cells. This system would improve the treatment and allow the City to meet the discharge limits easier. However this system would not be continuous discharge and would still need to pump to Sioux Falls to handle the hydraulic loading. The City would not receive the second credit for partial treatment due to the low BOD requirement. This alternative allows the City to compare the Sioux Falls pumping cost to other alternatives. The table below illustrates how the pumping charge will increase over time. This table assumes the Sioux Falls charge will increase by 1.5% annually and electrical cost will increase by 1% annually. It also shows the System Development Charge that Sioux Falls will require. Cost estimates and a schematic of this alternative are shown on the following pages.

Table 31 Future Treatment Cost Projections

Year	Charge per Thousand Gallons	Charge With Credits	Annual Cost to Pump to Sioux Falls	System Development Charge	WWT Utility Costs	Annual Treatment Cost
2008	$ 0.75		$99,539		$50,000	$149,539
2009	$ 1.10		$118,292		$51,000	$169,292
2010	$ 1.10		$119,544		$52,000	$171,544
2011	$ 1.41		$140,341		$53,000	$193,341
2012	$ 1.41		$152,663		$55,000	$207,663
2013	$ 3.89	$ 3.46	$589,000	$40,647	$55,550	$685,197
2014	$ 3.89	$ 3.46	$598,000	$81,294	$56,106	$735,400
2017	$ 4.07	$ 3.64	$760,000	$88,610	$57,806	$906,416
2022	$ 4.38	$ 3.95	$962,000	$101,902	$60,754	$1,124,656
2027	$ 4.72	$ 4.29	$1,194,000	$117,187	$63,853	$1,375,041
2033	$ 5.16	$ 4.73	$1,538,000	$138,281	$67,782	$1,744,063

Figure 24 | Treatment Alternative 4

0 50 100 200

Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

Table 32 Cost Estimate for Treatment Alternative 4

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$322,000.00	$322,000.00
2	Clearing	1	LS	$5,000.00	$5,000.00
3	Gravel Surfacing	2,200	TON	$12.00	$26,400.00
4	On Site Borrow Material	23,900	CY	$3.00	$71,700.00
5	Pond Depth Indicators	2	EA	$4,000.00	$8,000.00
6	Class B Rip Rap	7,600	TON	$35.00	$266,000.00
7	Type B Drainage Fabric	10,400	SY	$2.50	$26,000.00
8	Cell Dewatering	1	LS	$5,000.00	$5,000.00
9	Bar Screen	1	LS	$275,000.00	$275,000.00
10	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
11	Blower & Bar Screen Buildings	2	EA	$90,000.00	$180,000.00
12	SCADA System	1	LS	$20,000.00	$20,000.00
13	Electrical Service	1	LS	$125,000.00	$125,000.00
14	Fine Bubble Aeration System	1	LS	$678,000.00	$678,000.00
15	4" Fiber Reinforced Concrete	300,000	SF	$3.00	$900,000.00
16	Standby Generator & Tank	1	LS	$40,000.00	$40,000.00
17	Wet/Dry Well Lift Station	1	LS	$160,000.00	$160,000.00
18	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
19	Sludge Removal	11,900	CY	$30.00	$357,000.00
20	12" DIP Piping	190	FT	$65.00	$12,350.00
21	12" PVC Sanitary Sewer Pipe	20	FT	$50.00	$1,000.00
22	12" Sanitary Sewer Force Main	20	FT	$40.00	$800.00
23	Sanitary Sewer Pipe Bedding Material	230	FT	$5.00	$1,150.00
24	12" Gate Valve & Box	2	EA	$2,500.00	$5,000.00
25	Concrete Water Stop	4	EA	$300.00	$1,200.00
26	Pond Inlet Structure	2	EA	$2,500.00	$5,000.00
27	Pond Outlet Structure	2	EA	$2,000.00	$4,000.00
28	Salvage & Place Topsoil	800	CY	$3.00	$2,400.00
29	Seeding, Fertilizing & Mulching	4,500	SY	$1.50	$6,750.00
30	Trench Dewatering	1	LS	$5,000.00	$5,000.00
				Subtotal	$3,539,750.00
				Contingencies (15%)	$531,000.00
		Total Estimated Construction Costs			**$4,070,750.00**
				ENGINEERING	**$548,000.00**
				SF PUMPING CHARGE DURING CONST	**$400,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$163,000.00**
		TOTAL ESTIMATED PROJECT COST			**$5,181,750.00**

Table 33 EUAC for Treatment Alternative 4

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$322,000.00	$0.00	$0.00	$322,000.00
Clearing	$5,000.00	$0.00	$0.00	$5,000.00
Gravel Surfacing	$26,400.00	$15,840.00	$8,770.22	$17,629.78
On Site Borrow Material	$71,700.00	$0.00	$0.00	$71,700.00
Pond Depth Indicators	$8,000.00	$4,800.00	$2,657.64	$5,342.36
Class B Rip Rap	$266,000.00	$159,600.00	$88,366.65	$177,633.35
Type B Drainage Fabric	$26,000.00	$15,600.00	$8,637.34	$17,362.66
Cell Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Blower & Bar Screen Buildings	$180,000.00	$108,000.00	$59,796.98	$120,203.02
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Fine Bubble Aeration System	$678,000.00	$406,800.00	$225,235.30	$452,764.70
4" Fiber Reinforced Concrete	$900,000.00	$540,000.00	$298,984.91	$601,015.09
Standby Generator & Tank	$40,000.00	$24,000.00	$13,288.22	$26,711.78
Wet/Dry Well Lift Station	$160,000.00	$96,000.00	$53,152.87	$106,847.13
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Sludge Removal	$357,000.00	$0.00	$0.00	$357,000.00
12" DIP Piping	$12,350.00	$7,410.00	$4,102.74	$8,247.26
12" PVC Sanitary Sewer Pipe	$1,000.00	$600.00	$332.21	$667.79
12" Sanitary Sewer Force Main	$800.00	$480.00	$265.76	$534.24
Sanitary Sewer Pipe Bedding Material	$1,150.00	$0.00	$0.00	$1,150.00
12" Gate Valve & Box	$5,000.00	$3,000.00	$1,661.03	$3,338.97
Concrete Water Stop	$1,200.00	$720.00	$398.65	$801.35
Pond Inlet Structure	$5,000.00	$3,000.00	$1,661.03	$3,338.97
Pond Outlet Structure	$4,000.00	$2,400.00	$1,328.82	$2,671.18
Salvage & Place Topsoil	$2,400.00	$0.00	$0.00	$2,400.00
Seeding, Fertilizing & Mulching	$6,750.00	$0.00	$0.00	$6,750.00
Trench Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Remaining Capital Costs	$1,642,000.00	$0.00	$0.00	$1,642,000.00
Total Construction Cost	**$5,181,750.00**	**$1,652,250.00**	**$914,810.76**	**$4,266,939.24**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,000.00			$14,877.47
Supplies	$1,000.00			$14,877.47
Utilities	$55,000.00			$818,261.12
Labor	$4,000.00			$59,509.90
Total Annual Cost	**$61,000.00**			**$907,525.97**
			Total Net Present Worth	**$5,174,465.20**
			EUAC	**$347,805.34**

TREATMENT ALTERNATIVE 5: PUMPING ONLY TO SIOUX FALLS

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 5 proposes the City stop running the existing aeration system and pump everything to Sioux Falls. The City would add a new lift station that would pump all of the wastewater to Sioux Falls. This alternative allows the City to compare the Sioux Falls pumping cost to other alternatives. The table below illustrates how the pumping charge will increase over time. This table assumes the Sioux Falls charge will increase by 1.5% annually and electrical cost will increase by 1% annually. It also shows the System Development Charge that Sioux Falls will require. The cost estimate for this alternative is shown on the following page.

Table 34 Future Treatment Cost Projections

Year	Charge per Thousand Gallons	Annual Cost to Pump to Sioux Falls	System Development Charge	Lift Station Cost	Annual Treatment Cost
2008	$ 0.75	$99,539		$4,400	$103,939
2009	$ 1.10	$118,292		$4,500	$122,792
2010	$ 1.10	$119,544		$4,600	$124,144
2011	$ 1.41	$140,341		$4,800	$145,141
2012	$ 1.41	$152,663		$4,900	$157,563
2013	$ 3.89	$990,000	$40,647	$5,000	$1,035,647
2014	$ 3.89	$1,000,000	$81,294	$5,050	$1,086,344
2017	$ 4.07	$1,192,000	$88,610	$5,203	$1,285,813
2022	$ 4.38	$1,436,000	$101,902	$5,468	$1,543,370
2027	$ 4.72	$1,711,000	$117,187	$5,747	$1,833,935
2033	$ 5.16	$2,112,000	$138,281	$6,101	$2,256,382

Figure 25 | Treatment Alternative 5

0 50 100 200

Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

Table 35 Cost Estimate for Treatment Alternative 5

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$70,000.00	$70,000.00
2	Bar Screen	1	LS	$275,000.00	$275,000.00
3	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
4	Bar Screen Buildings	1	EA	$90,000.00	$90,000.00
5	Electrical Service	1	LS	$70,000.00	$70,000.00
6	SCADA System	1	LS	$20,000.00	$20,000.00
7	Standby Generator & Tank	1	LS	$40,000.00	$40,000.00
8	Wet/Dry Well Lift Station	1	LS	$160,000.00	$160,000.00
9	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
10	12" PVC Sanitary Sewer Pipe	20	FT	$50.00	$1,000.00
11	12" Sanitary Sewer Force Main	20	FT	$40.00	$800.00
12	Sanitary Sewer Pipe Bedding Material	41	FT	$5.00	$205.00
13	Connect to Existing Piping	4	EA	$500.00	$2,000.00
14	Aggregate Base Course (8")	100	TON	$25.00	$2,500.00
15	Salvage & Place Topsoil	100	CY	$5.00	$500.00
16	Seeding, Fertilizing & Mulching	300	SY	$1.50	$450.00
17	Trench Dewatering	1	LS	$5,000.00	$5,000.00
				Subtotal	$767,455.00
				Contingencies (15%)	$116,000.00
				Total Estimated Construction Costs	**$883,455.00**
				ENGINEERING	**$146,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$36,000.00**
				TOTAL ESTIMATED PROJECT COST	**$1,065,455.00**

Table 36 EUAC for Treatment Alternative 5

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$70,000.00	$0.00	$0.00	$70,000.00
Bar Screen	$275,000.00	$165,000.00	$91,356.50	$183,643.50
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Bar Screen Buildings	$90,000.00	$54,000.00	$29,898.49	$60,101.51
Electrical Service	$70,000.00	$42,000.00	$23,254.38	$46,745.62
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Standby Generator & Tank	$40,000.00	$24,000.00	$13,288.22	$26,711.78
Wet/Dry Well Lift Station	$160,000.00	$96,000.00	$53,152.87	$106,847.13
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
12" PVC Sanitary Sewer Pipe	$1,000.00	$600.00	$332.21	$667.79
12" Sanitary Sewer Force Main	$800.00	$480.00	$265.76	$534.24
Sanitary Sewer Pipe Bedding Material	$205.00	$0.00	$0.00	$205.00
Connect to Existing Piping	$2,000.00	$0.00	$0.00	$2,000.00
Aggregate Base Course (8")	$2,500.00	$1,500.00	$830.51	$1,669.49
Salvage & Place Topsoil	$500.00	$0.00	$0.00	$500.00
Seeding, Fertilizing & Mulching	$450.00	$0.00	$0.00	$450.00
Trench Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Remaining Capital Costs	$298,000.00	$0.00	$0.00	$298,000.00
Total Construction Cost	**$1,065,455.00**	**$407,580.00**	**$225,667.16**	**$839,787.84**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,000.00			$14,877.47
Supplies	$1,000.00			$14,877.47
Utilities	$5,000.00			$74,387.37
Labor	$3,000.00			$44,632.42
Total Annual Cost	**$10,000.00**			**$148,774.75**
			Total Net Present Worth	**$988,562.58**
			EUAC	**$66,446.93**

TREATMENT ALTERNATIVE 6: MECHANICAL TREATMENT

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 6 proposes a mechanical plant be built on a new site. This alternative would be continuous discharge and eliminate the need to pump to Sioux Falls. The cost estimate for this alternative is shown on the following page.

Table 37 Cost Estimate for Treatment Alternative 6

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$1,414,000.00	$1,414,000.00
2	Clearing	1	LS	$10,000.00	$10,000.00
3	Gravel Surfacing	1,000	TON	$12.00	$12,000.00
4	Unclassified Excavation	19,400	CY	$3.00	$58,200.00
5	12" PVC Sanitary Sewer Pipe Outfall	1,000	LF	$53.00	$53,000.00
6	Sanitary Manhole	3	EA	$3,000.00	$9,000.00
7	Mechanical Treatment Plant	1	LS	$13,638,000.00	$13,638,000.00
8	Sanitary Sewer Pipe Bedding Material	1,000	FT	$5.00	$5,000.00
9	SCADA System	1	LS	$40,000.00	$40,000.00
10	Electrical Service	1	LS	$125,000.00	$125,000.00
11	Standby Generator & Tank	1	LS	$50,000.00	$50,000.00
12	Barb Wire Fence	3,000	FT	$5.00	$15,000.00
13	Salvage & Place Topsoil	9,700	CY	$3.00	$29,100.00
14	Seeding, Fertilizing & Mulching	58,080	SY	$1.50	$87,120.00
				Subtotal	$15,545,420.00
				Contingencies (15%)	$2,332,000.00
				Total Estimated Construction Costs	**$17,877,420.00**
				ENGINEERING	**$2,288,000.00**
				LAND PURCHASE (12 AC.)	**$240,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$716,000.00**
				TOTAL ESTIMATED PROJECT COST	**$21,121,420.00**

Table 38 EUAC for Treatment Alternative 6

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$1,414,000.00	$0.00	$0.00	$1,414,000.00
Clearing	$10,000.00	$0.00	$0.00	$10,000.00
Gravel Surfacing	$12,000.00	$7,200.00	$3,986.47	$8,013.53
Unclassified Excavation	$58,200.00	$0.00	$0.00	$58,200.00
12" PVC Sanitary Sewer Pipe Outfall	$53,000.00	$31,800.00	$17,606.89	$35,393.11
Sanitary Manhole	$9,000.00	$5,400.00	$2,989.85	$6,010.15
Mechanical Treatment Plant	$13,638,000.00	$8,182,800.00	$4,530,617.96	$9,107,382.04
Sanitary Sewer Pipe Bedding Material	$5,000.00	$0.00	$0.00	$5,000.00
SCADA System	$40,000.00	$24,000.00	$13,288.22	$26,711.78
Electrical Service	$125,000.00	$75,000.00	$41,525.68	$83,474.32
Standby Generator & Tank	$50,000.00	$30,000.00	$16,610.27	$33,389.73
Barb Wire Fence	$15,000.00	$0.00	$0.00	$15,000.00
Salvage & Place Topsoil	$29,100.00	$0.00	$0.00	$29,100.00
Seeding, Fertilizing & Mulching	$87,120.00	$0.00	$0.00	$87,120.00
Land Purchase	$240,000.00	$144,000.00	$79,729.31	$160,270.69
Remaining Capital Costs	$5,336,000.00	$0.00	$0.00	$5,336,000.00
Total Construction Cost	**$21,121,420.00**	**$8,500,200.00**	**$4,706,354.65**	**$16,415,065.35**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$5,000.00			$74,387.37
Supplies	$5,000.00			$74,387.37
Utilities	$75,000.00			$1,115,810.61
Sludge Disposal	$20,000.00			$297,549.50
Labor (two new employees)	$200,000.00			$2,975,494.97
Total Annual Cost	**$305,000.00**			**$4,537,629.83**
			Total Net Present Worth	**$20,952,695.19**
			EUAC	**$1,408,350.23**

IMPLEMENTATION OF ALTERNATIVES

WASTEWATER COLLECTION

Collection Alternative 1 "Replace VCP with PVC" should be implemented by the City. However, due to the large capital cost the City should break the project into multiple phases and begin to budget for the first phase. These improvements will reduce the amount of I&I and correct the deficiencies that were discovered during televising. This alternative will also replace streets that are beyond their useful life and can be combined with water line and storm sewer improvements.

Collection Alternative 2 "Future Basin Improvements" should be implemented by the City. The City should start with Phase "A" and eliminate seven lift stations. These improvements will reduce the annual O&M amount because lift stations will be eliminated. This alternative will also open up future areas for development. Future development will drive the need for the City to complete Phases B and C.

Collection Alternative 3 "Replace Lift Station" should be completed if the City decides not to implemented Collection Alternative 2. There are lift stations that need replacement if they are not abandoned by new trunk sewers.

Collection Alternative 4 "New SCADA System" should be implemented by the City. The new SCADA system will improve monitoring of the system. The cost of this alternative will depend on what lift stations are eliminated or replaced. This alternative will also allow the maintenance staff to address other needs and not travel to the lift stations as often to inspect them because they can be monitored remotely from the shop.

Collection Alternative 5 "Core Basin Trunk Sewer" should be implemented if the City decides to relocate the treatment system to a new site along Splitrock Creek. The City will need to have the wastewater flow that is going to the current site and have it flow to the new site.

WASTEWATER TREATMENT

The EUAC needs to be compared in order to determine the most cost effective long term solution for the wastewater treatment system. The following table compares the capital cost and EUAC for all of the treatment alternatives.

Table 39 Comparison of Wastewater Treatment Alternatives

Treatment Alternatives	Capital Cost	Equivalent Uniform Annual Cost
1: Build New Treatment System	$10,537,855	$626,442
2: Add Aerated Rock Beds	$7,624,325	$473,985
3: Rehabilitate Existing Site	$7,944,900	$520,047
4: Aeration Expansion with Sioux Falls Pumping	$5,181,750	$1,499,858
5: Pumping only to Sioux Falls	$1,065,455	$1,538,657
6: Mechanical Treatment	$21,121,420	$1,408,350

Treatment Alternative 1 "Build New Treatment System" is recommended. This alternative is not the lowest capital or EUAC cost. However, the long term planning of the City needs to include moving the treatment system downstream. If the City maintained the existing site then the relocation of the facility in the future will only cost the City more money.

Treatment Alternative 2 "Add Aerated Rock Beds" is not recommended. This alternative has the lowest EUAC. However, the future of the treatment system needs to include moving the facility downstream. It is anticipated that expansion at the current site will have a lot of negative feedback with the adjacent residential areas.

Treatment Alternative 3 "Rehabilitate the Existing Site" is not recommended. Any future expansion will be difficult because the site is land locked. In addition, it would benefit the adjacent residential areas to have the system moved.

Treatment Alternative 4 "Aeration Expansion with Sioux Falls Pumping" is not recommended. The future pumping costs are only going to increase. This alternative can't provide enough treatment to get the partial treatment credit from the City of Sioux Falls or guarantee the City will always be able to meet the discharge limits. In addition, the EUAC shows this is one of the most costly Treatment Alternatives for the City.

Treatment Alternative 5 "Pumping Only to Sioux Falls" is not recommended because it is the highest cost EUAC. In addition, the future rate increases by the City of Sioux Falls can't be determined and the System Development Cost will hurt development in Brandon.

Treatment Alternative 6 "Mechanical Treatment" is not recommended because of the large capital cost and high O&M. The City would have to hire two new employees to run the plant. In addition, these employees would have to have higher certification by the DENR to operate the plant.

COST RECOVERY

Cost recovery is not included in any of these cost estimates. Development will drive the time and amount of cost recovery that the City receives. There are areas shown in the future basins map that the City will be able assess a cost recovery. It is anticipated that the City will incur these cost and it could take several years before these areas develop.

IMPACT ON OWNER'S BUDGET

There are several Alternatives the City needs to implement. Due to budget constraints and priority, the following Alternatives should be implemented immediately. The following figure shows the combined recommendation.

Table 40 Recommended Improvements

Collection Alternative 2A: Future Basin Improvements	$9,681,230.00
Collection Alternative 5: Core Basin Trunk Sewer	$2,902,750.00
Treatment Alternative 1: Build New Treatment System	$10,537,855.00
Combined Project Cost	**$23,121,835.00**

The City provided SEI their sewer revenue and expenses for the last two years. SEI evaluated the budget and the cost of the recommended improvements to determine how the City could fund the project. Based on Brandon's current revenue and expenses, they will have to obtain grant and loan dollars from various funding agencies to finance the project. The loan is based on an interest rate of 3.0% over 20 years. The owner's sewer fees will be used to make the loan payments. The current monthly residential sewer rate is a minimum of $7.21 plus $4.22 per thousand. The sewer bill for 5,000 gallons of water usage is $28.31.

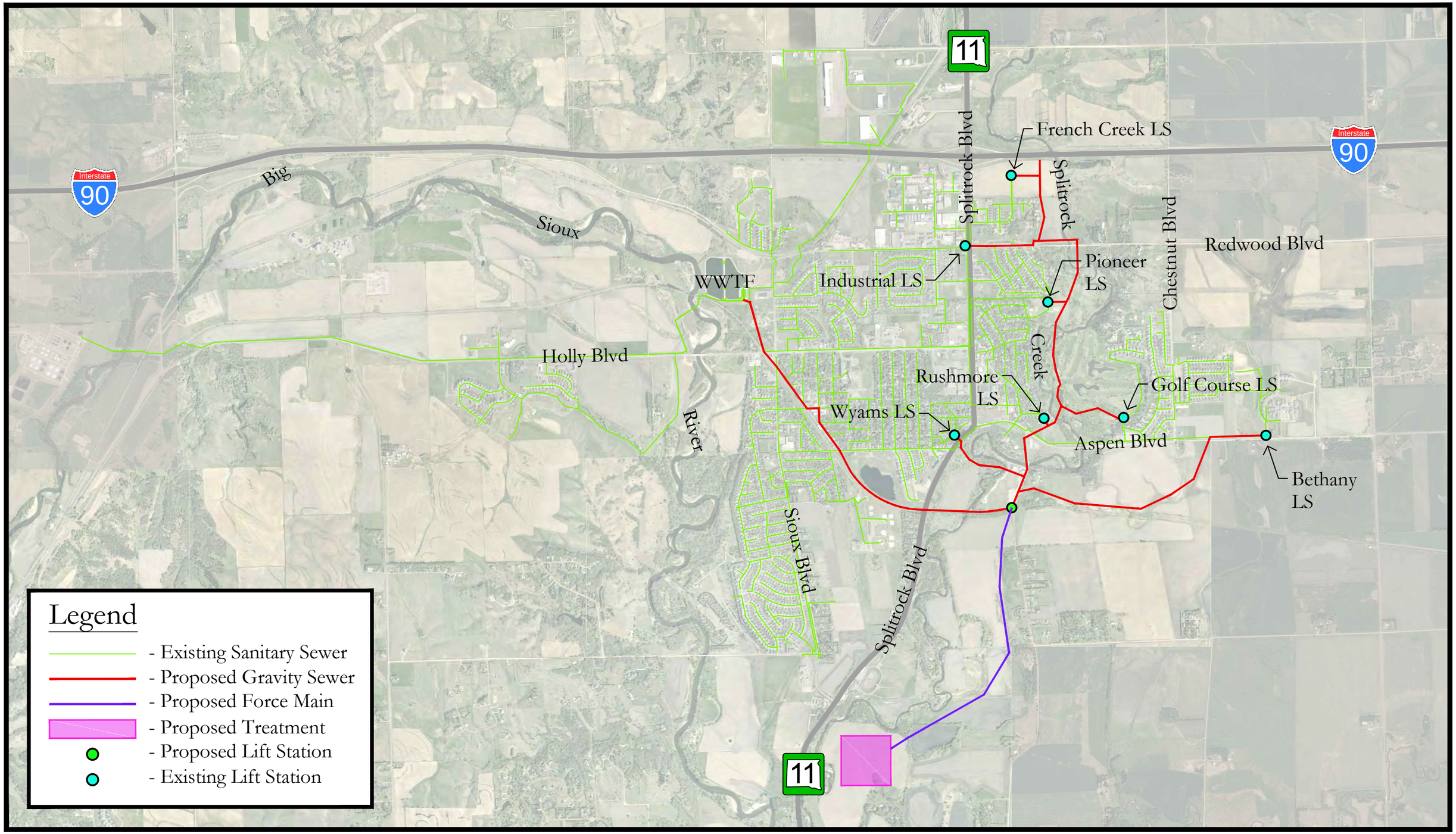

Figure 26 | Combined Collection & Treatment Alternatives

0 600 1200 2400

Brandon SOUTH DAKOTA *Building a Better Life*

STOCKWELL ENGINEERS

Table 41 Funding Proposed Improvements

Revenue	$1,079,552.90
Expenses	$482,466.94
Current Debt Payment	$0.00
Net Cash From Operations	**$597,085.97**
New Loan Payment	$1,554,150.50
Debt Reserves (10%)	$155,415.05
Net Fund Balance	**-$1,112,479.59**
Monthly Rate Increase	$47.00
Number of Customers	3,025
Annual Revenue Generated	$1,706,100.00
Fund Balance After Increase	**$593,620.41**

The above table shows that the City of Brandon would have to increase their sewer rates to fund the project. The City will try to obtain grant dollars to reduce the loan amount. In order to be eligible for grant dollars the DENR has required a minimum monthly sewer rate of $22.00 for 5,000 gallons. The City of Brandon currently meets this requirement. The City should also consider raising their rates annually by 3%. This will keep up with the cost of inflation and reduce a bigger jump in rates to complete any future projects.

The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table.

Table 42 Potential Grant/Loan Amounts

Grant/Loan	60/40	50/50	40/60	30/70	20/80	10/90
Expenses	$482,467	$482,467	$482,467	$482,467	$482,467	$482,467
Current Debt	$0	$0	$0	$0	$0	$0
Project Cost	$23,121,835	$23,121,835	$23,121,835	$23,121,835	$23,121,835	$23,121,835
Grant Amount	$13,873,101	$11,560,918	$9,248,734	$6,936,551	$4,624,367	$2,312,184
Loan Amount	$9,248,734	$11,560,918	$13,873,101	$16,185,285	$18,497,468	$20,809,652
Annual Loan Payment	$621,660	$777,075	$932,490	$1,087,905	$1,243,320	$1,398,735
Debt Reserves	$62,166	$77,708	$93,249	$108,791	$124,332	$139,874
Total Annual Cost	$1,166,293	$1,337,250	$1,508,206	$1,679,163	$1,850,119	$2,021,076
Revenue	$1,079,553	$1,079,553	$1,079,553	$1,079,553	$1,079,553	$1,079,553
Balance After Project	-$86,740	-$257,697	-$428,653	-$599,610	-$770,566	-$941,523
Minimum Rate Increase	$2.39	$7.10	$11.81	$16.52	$21.23	$25.94
Current Rate (5,000 gal)	$28.31	$28.31	$28.31	$28.31	$28.31	$28.31
Proposed Monthly Rate	$30.70	$35.41	$40.12	$44.83	$49.54	$54.25

SEI has completed rate analysis for the City of Brandon over the last several years. It is recommended that the City include the proposed improvements in the next rate analysis to verify the potential rate increases. The above calculations are very cursory and do not include any increase in customers. The rate analysis is more in depth and will give a more accurate depiction of the impact on rates.

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI will request comments on the proposed improvements prior to construction from various agencies. These comment letters will be provided to the funding agencies.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The City of Brandon will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. The City will work with SEI to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies.

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

This Comprehensive Study identified several deficiencies with the sewer system that do not meet current SD Design Criteria Standards. The alternatives will bring the system into compliance and provide an improved system to adequately handle growth.

DESIGN OF SELECTED PLAN

The alternatives will be designed by the City of Brandon's engineer. All construction plans and specifications will be reviewed and approved by the SD DENR. All state bid laws will be followed for the bidding process.

The SD DENR was contacted during this study to discuss current and future permit limits. The DENR stated that nutrient limits for phosphorus and nitrogen could be added requirements in the future. However, it could be at least five years until the DENR adopts limits and at least another five years until those limits could be implemented. An area should be set aside during the design to add the nutrient removal process in the future, if it is required.

It is more likely that tougher ammonia limits would be implemented before the nutrient requirements. In addition the ammonia limit would be somewhere between 0.4 and 1.0 mg/L if the City discharged to Split Rock Creek. It is anticipated that the other limits would not change.

LAND ACQUISITION

Land acquisition, temporary construction easements and permanent easements will be necessary to complete the improvements. Land acquisition costs have been included in the estimates. All easements will be obtained before construction is started.

IMPLEMENTATION SCHEDULE

The City should implement the recommended improvements as soon as possible. Funding application should be submitted for the first round of DENR funding in 2014. The earliest construction could begin is 2015.

REFERENCES

Brown, Jon., (2010). East Side Sanitary Sewer Analysis, (Sioux Falls, SD: Stockwell Engineers).

National Weather Service Forecast Office, Sioux Falls, SD, 11 December 2012 <http://www.weather.gov/climate/index.php?wfo=fsd>.

South Dakota Department of Environment and Natural Resources, (March 1991). Recommended Design Criteria Manual Wastewater Collection and Treatment Facilities, Pierre, SD: Division of Environmental Services.

Appendix A
Surface Water Discharge Permit

Permit No.: SD-0022535

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3181

AUTHORIZATION TO DISCHARGE UNDER THE

SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Chapters 74:52:01 through 74:52:11,

the city of Brandon

is authorized to discharge from its wastewater treatment facility in Minnehaha County, located northwest of the city (Section 33, Township 102 North, Range 48 West) Latitude 43° 36' 00", Longitude 96° 35' 48"

to the Big Sioux River,

in accordance with discharge point(s), effluent limits, monitoring requirements and other conditions set forth herein. Authorization for discharge is limited to those outfalls specifically listed in the permit.

This permit shall become effective **April 1, 2000**.

This permit and the authorization to discharge shall expire at midnight, **March 31, 2005**.

Signed this 29th day of March, 2000.

Nettie H. Myers

Authorized Permitting Official

Nettie H. Myers
Secretary
Department of Environment and Natural Resources

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A. Definitions (Continued)

8. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

9. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. "Secretary" means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

11. "SDDENR" means the South Dakota Department of Environment and Natural Resources.

12. "Sewage Sludge" is any solid, semi-solid or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

I. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

A. Definitions.

1. The "30-day (and monthly) average," other than for fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

2. The "7-day (and weekly) average" is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limits. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

3. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single sample or instantaneous measurement.

4. "Composite samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

5. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

6. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

7. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Description of Discharge Points

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a SWD permit is a violation of the South Dakota Water Pollution Control Act and could subject the person{s} responsible for such discharge to penalties under Section 34A-2-75 of the Act. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from the first learning of an unauthorized discharge could subject such person to criminal penalties as provided under the South Dakota Water Pollution Control Act.

Outfall Serial Number	Description of Discharge Point
001	Any discharge to the Big Sioux River from the discharge structure located at the southwest corner of cell 3 (Latitude 43° 35' 57", Longitude 96° 35' 56")

C. Specific Limits and Self-Monitoring Requirements

1. Effluent Limits

Effective immediately and lasting through the life of this permit, the quality of effluent discharged by the facility shall, as a minimum, meet the limits as set forth below:

Effluent Characteristic	Effluent Limit		
	30-Day Average [1]	7-Day Average [1]	Daily Maximum [1]
BOD_5, mg/L	30	45	N/A
Total Suspended Solids, mg/L	90	135	N/A
Fecal Coliforms, no./100 mL [2] (May 1 - September 30)	200	N/A	400
Ammonia-Nitrogen, lbs/day (as N)			
Spring (April - May)	37	N/A	65
Summer (June - August)	76		133
Fall (September - October)	83		145
Winter (November - March)	83		145
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	N/A	N/A	0.019
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 in any sample.			

[1] See Definitions, Part I.A.

[2] Fecal Coliform organisms from May 1 to September 30 may not exceed a concentration of 200 per 100 milliliters as a geometric mean based on a minimum of 5 samples obtained during separate 24-hour periods for any 30-day period, and they may not exceed this value in more than 20 percent of the samples examined in this 30-day period. They may not exceed 400 per 100 milliliters in any one sample from May 1 to September 30.

C. Specific Limits and Self-Monitoring Requirements

2. Self-Monitoring Requirements - **Outfall 001**

As a minimum, upon the effective date of this permit, the following parameters shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Reporting Values [1]	Sample Type [1]
Rate of Discharge, MGD	Three times per week or weekly [2]	daily maximum; 30-day average; [3]	Instantaneous
pH, standard units [6]	Three times per week or weekly [2]	daily minimum; daily maximum	Instantaneous [4]
BOD_5, mg/L	Three times per week or weekly [2]	7-day average; 30-day average	Grab
Total Suspended Solids, mg/L	Three times per week or weekly [2]	7-day average; 30-day average	Grab
Fecal Coliform, no./100 mL	[5]	daily maximum; 30-day geometric mean	Grab
Ammonia-Nitrogen, mg/L (as N)[6]	Three times per week or weekly [2]	daily maximum; 30-day average[7]	Grab

[1] See definitions, Part I.A.

[2] A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week. All of the samples collected during the 7-day or 30-day period are to be used in determining the averages. If only one sample is collected during the period, it must be considered the same as the average for that period. The permittee always has the option of collecting additional samples if appropriate.

[3] In addition to reporting the daily maximum and 30-day average flow rates, the total flow (million gallons) during the reporting period shall be reported. The date and time of the start and termination of each discharge shall also be reported.

[4] pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment.

[5] For fecal coliform, if a minimum of 5 samples are collected in a 30-day period, all of the samples collected are to be used in determining the geometric mean. Samples are to be collected at the same time BOD_5, TSS, etc. Additional samples are to be collected during any other separate 24-hour periods. If less than five samples are taken during any 30-day period, the maximum limit still applies. ***This sampling protocol for fecal coliform only applies if the discharge occurs between May 1 and September 30.***

[6] The pH and temperature of the effluent shall be determined when ammonia samples are collected.

[7] SDDENR considers the analytical detection limit for ammonia to be 0.01 mg/L and for total residual chlorine to be 0.05 mg/L. If the effluent value is less than the analytical detection limit, "0" shall be used for reporting and averaging purposes.

C. Specific Limits and Self-Monitoring Requirements

2. Self-Monitoring Requirements - **Outfall 001**

Effluent Characteristic	Frequency	Reporting Values [1]	Sample Type [1]
Ammonia-Nitrogen, lbs/day (as N) [8]	As sample results are received	daily maximum; 30-day average	Calculated
Total Residual Chlorine, mg/L (Required only if the effluent is chlorinated)	Three times per week or weekly [2]	daily maximum [7]	Grab
Water Temperature, °C [6]	Three times per week or weekly [2]	daily maximum; 30-day average	Instantaneous [9]
Five-Day Carbonaceous Biochemical Oxygen Demand, mg/L	Quarterly	30-day average	Grab
Nitrates, mg/L (as N)	Quarterly	30-day average	Grab

[8] Daily ammonia-nitrogen loading (lbs/day) shall be calculated by multiplying the discharge flow rate (million gallons per day) by the measured pollutant concentration (mg/L) times 8.34 (a conversion factor). 30-day average nitrogen loading (lbs/day) shall be calculated by averaging the computed daily nitrogen loadings (lbs/day) for the monitoring period.

[9] The water temperature of the effluent shall be taken as a field measurement. Measurement shall be made with a mercury-filled, or dial type thermometer, or a thermistor. Readings shall be reported to the nearest whole degree Celsius.

C. Specific Limits and Self-Monitoring Requirements

3. Inspection Requirements: The permittee shall inspect its wastewater treatment facility on at least a **monthly** basis. During a discharge, the permittee shall inspect the facility on at least a **weekly** basis. The inspection shall be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. In addition, the inspection shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility. The permittee shall maintain a notebook recording information obtained during the inspection. At a minimum, the notebook shall include the following:

1. Date and time of the inspection;
2. Name of the inspector(s);
3. The facility's discharge status;
4. The measured amount of pond freeboard at the outlet works;
5. Identification of operational problems and/or maintenance problems;
6. Recommendations, as appropriate, to remedy identified problems;
7. A brief description of any actions taken with regard to problems identified; and
8. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the notebook available for inspection, upon request, by the Secretary or the U.S. Environmental Protection Agency.

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part I shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under ARSD 74:52:03:06, a.b.r. 40 CFR, Part 136, unless other test procedures have been specified in this permit.

C. Penalties for Tampering. Any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a Class 1 misdemeanor. In addition to a jail sentence authorized by SDCL 22-6-2, a Class 1 misdemeanor imposed by SDCL, Chapter 34A-2, is subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, for damages to the environment of this state.

D. Reporting of Monitoring Results. Effluent monitoring results obtained during the previous three (3) months shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part IV), and submitted to the Secretary at the following address:

original to: South Dakota Department of
Environment and Natural Resources
Surface Water Quality Program
Joe Foss Building
523 East Capitol Avenue
Pierre, South Dakota 57501-3181

E. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under ARSD 74:52:03:06, a.b.r. 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated.

G. Records Contents. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The time analyses was initiated;

5. The initials or name(s) of individual(s) who performed the analyses;

6. References and written procedures, when available, for the analytical techniques or methods used; and,

7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Discharge Monitoring Reports, a copy of this SWD permit and copies of any Unauthorized Release of Wastewater forms must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the State of South Dakota at (605) 773-3231 and the EPA, Region VIII, Emergency Response Branch at (303) 293-1788.

2. The following occurrences of noncompliance shall be reported by telephone to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. - 4:30 p.m. Central Time) following the day the permittee became aware of the circumstances:

a. Any unanticipated bypass which exceeds any effluent limit in the permit (See Part III.G., Bypass of Treatment Facilities.);

b. Any upset which exceeds any effluent limit in the permit (See Part III.H., Upset Conditions.); or,

c. Violation of a maximum daily discharge limit for any of the pollutants listed in the permit to be reported within 24 hours.

I. Twenty-four Hour Notice of Noncompliance Reporting. (Continued)

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted to the addresses in Part II.D., Reporting of Monitoring Results.

J. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part II.D. are submitted. The reports shall contain the information listed in Part II.I.3.

K. Inspection and Entry. The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the director advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance.

B. Penalties for Violations of Permit Conditions. Any person who violates a permit condition shall, upon conviction, be punished by a Class 1 misdemeanor. In addition to a jail sentence authorized by SDCL 22-6-2, a Class 1 misdemeanor imposed by SDCL, Chapter 34A-2, is subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, for damages to the environment of this state. Except as provided in permit conditions on Part III.G., Bypass of Treatment Facilities and Part III.H., Upset Conditions, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

F. Removed Substances. Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. These materials may be landfilled at a municipal solid waste landfill. Sludge/digestor supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state.

G. Bypass of Treatment Facilities:

1. Bypass not exceeding limits. The permittee may allow any bypass to occur which does not cause effluent limits to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. and 3. of this section.

2. Notice:

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 60 days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part II.I., Twenty-four Hour Notice of Noncompliance Reporting.

G. Bypass of Treatment Facilities: (Continued)

3. Prohibition of bypass.

a. Bypass is prohibited and the Secretary may take enforcement action against a permittee for a bypass, unless:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

(3) The permittee submitted notices as required under paragraph 2. of this section.

b. The Secretary may approve an anticipated bypass, after considering its adverse effects, if the Secretary determines that it will meet the three conditions listed above in paragraph 3.a. of this section.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limits if the requirements of paragraph 2. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limits).

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required under Part II.I., Twenty-four Hour Notice of Noncompliance Reporting; and,

d. The permittee complied with any remedial measures required under Part III.D., Duty to Mitigate.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Industrial Wastes

1. The permittee has the responsibility to protect the Publicly Owned Treatment Works (POTW) from pollutants which would inhibit, interfere, or otherwise be incompatible with operation of the treatment works including interference with the use or disposal of municipal sludge.

2. Each significant industrial user must be identified as to qualitative and quantitative characteristics of the discharge as well as production data. A significant industrial user is defined as an industrial user discharging to a publicly owned treatment works (POTW) that satisfies any of the following: (1)has a process wastewater flow of 25,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its waste a toxic pollutant in toxic amounts as defined under Section 307(a) of the Federal Clean Water Act of 1977, as amended, or is otherwise subject to Categorical Pretreatment Standards developed under Section 307(b) of the Federal Clean Water Act and 40 CFR chapter I and subchapter N; or, (4) is found by the permit issuing authority to have a significant impact on the treatment works or the quality of effluent from the POTW.

3. The permittee must notify the permitting authority of any new introductions by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user. Such notice must contain the information described in paragraph 1. above and be forwarded no later than sixty (60) days following the introduction or change.

4. Pretreatment Standards [ARSD 74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the waste treatment system from any source of nondomestic discharge:

   (a) Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including but not limited to, wastestreams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in ARSD 74:28:22:01, a.b.r. 40 CFR 261.21;

   (b) Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

   (c) Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

   (d) Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW;

   (e) Heat in amounts which will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit);

   (f) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   (g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

   (h) Any trucked or hauled pollutants, except at discharge points designated by the POTW;

   (i) Any pollutant which causes pass through or interference;

I. Industrial Wastes

(j) In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information); and,

(k) Any specific pollutant which exceeds a local limit established by the permittee in accordance with ARSD 74:52:11:01 a.b.r. 40 CFR 403.5(c) and (d)

5. The permittee shall provide adequate notice to the Secretary of:

(a) Any new introduction of pollutants into the treatment works from an indirect discharger (i.e., industrial user) which would be subject to Sections 301 or 306 of the Federal Clean Water Act if it were directly discharging those pollutants;

(b) Any substantial change in the volume or character of pollutants being introduced into the treatment works by an industrial user introducing pollutants into the treatment works at the time of application of the SWD permit; and,

(c) For the purposes of this section, adequate notice shall include information on:

(1) The quality and quantity of effluent to be introduced into such treatment works; and,

(2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from such publicly owned treatment works.

6. At such time as a specific pretreatment limit becomes applicable to an industrial user of the permittee, the Secretary may, as appropriate, do the following:

(a) Amend the permittee's SWD discharge permit to specify the additional pollutant(s) and corresponding effluent limit(s) consistent with the applicable national pretreatment limit;

(b) Require the permittee to specify, by ordinance, permit, or similar means, the type of pollutant(s) and the maximum amount which may be discharged to the permittee's facility for treatment. Such requirement shall be imposed in a manner consistent with the POTW program development requirements of the General Pretreatment Regulations at [ARSD 74:52:11:01, a.b.r. 40 CFR 403]; and/or,

(c) Require the permittee to monitor its discharge for any pollutant which may likely be discharged from the permittee's facility, should the industrial user fail to properly pretreat its waste.

7. The Secretary retains, at all times, the right to take legal action against any source of nondomestic discharge, whether directly or indirectly controlled by the permittee, for violations of a permit, order, or similar enforceable mechanism issued by the permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards as required in ARSD 74:52:11:01 a.br. 40 CFR, chapter I, subchapter N. In those cases where a SWD permit violation has occurred because of the failure of the permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the POTW, the Secretary shall hold the permittee and/or the industrial user responsible and may take legal action against the permittee as well as the Industrial User(s) contributing to the permit violation.

IV. GENERAL REQUIREMENTS

A. Planned Changes. The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged. This notification applies to pollutants which are not subject to effluent limits in the permit. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source (see ARSD, Chapter 74:52:01:01(30)).

B. Anticipated Noncompliance. The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.

E. Duty to Provide Information. The permittee shall furnish to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Secretary, it shall promptly submit such facts or information.

G. Signatory Requirements. All applications, reports or information submitted to the Secretary shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under paragraph IV.G.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph IV.G.2. must be submitted to the Secretary prior to or together with any reports, information, or applications to be signed by an authorized representative.

G. Signatory Requirements. (Continued)

4. Certification. Any person signing a document under this section shall make the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. Penalties for Falsification of Reports. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a Class 1 misdemeanor. In addition to a jail sentence authorized by SDCL 22-6-2, a Class 1 misdemeanor imposed by SDCL, Chapter 34A-2, is subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, for damages to the environment of this state, or both.

I. Availability of Reports. Except for data determined to be confidential under ARSD 74:52:02:17, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of SDDENR and EPA. Permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Federal Clean Water Act.

K. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

L. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Secretary does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2. above.

N. Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limits (and compliance schedule, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.

2. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA.

3. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limits than contained in this permit.

4. Sludge: To include sludge conditions required when EPA delegates the 503 sludge program to the state.

O. Toxicity Limit-Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity limits if whole effluent toxicity is detected in the discharge.

Appendix B
Surface Water Discharge Compliance Inspection

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

July 2, 2012

The Honorable Larry Beesley
Mayor, City of Brandon
PO Box 95
Brandon, SD 57005

RE: Surface Water Discharge Offsite Review (SWD Permit Number: SD0022535)

Dear Mayor Beesley,

The South Dakota Department of Environment and Natural Resources conducted a Surface Water Discharge Offsite Review of the city's wastewater treatment facility on June 8, 2012.

I have attached an inspection summary of the report. Please pay special attention to the Inspection Summary tables and implement the required corrective actions as soon as possible. All corrective actions taken will be reviewed during our next inspection at your facility. **By August 3, 2012, please submit a summary of the corrective actions taken to the department at the address listed in the letterhead.**

Thank you for your continued efforts to protect the environment and natural resources of South Dakota. Please review this report for accuracy, and respond within thirty days with any needed corrections. If you have any questions about this letter or the inspection reports, please contact me at (605) 773-3351.

Sincerely,

Tina Piroutek
Engineer II
Surface Water Quality Program
Enclosures

cc: Rollie Hoeke, Public Works Director, City of Brandon
Seth Draper, EPA Region 8, 8ENF-W-NP
SWD File - Pierre

INSPECTION SUMMARY

Facility: City of Brandon

SWD Permit: SD0022535

Inspection Date: June 8, 2012

The following comments detail violations of the permit that were identified during the inspection. Corrective actions are ***required*** for the city to come into compliance with its surface water discharge permit.

COMMENTS	REQUIRED CORRECTIVE ACTIONS
Numerous samples were not properly preserved or had too high of temperatures upon arriving at the lab, therefore were an invalid sample.	Samples must be preserved according to the proper sampling methods. Enough ice needs to be packed with the samples to ensure that the sample is not received at the lab at a temperature over 6 °C.
The city of Brandon had experienced several BOD_5 and fecal coliform effluent violations. BOD_5 violations occurred in September 2010, March 2011, June 2011, and July 2011. There was a fecal coliform violation in September 2010. ***Warning letters have been sent to the facility concerning these violations.***	The city **must** look into modifications of its operation to allow for adequate treatment of the wastewater. These violations are not acceptable and can lead to enforcement actions which can include fines and penalties. Please contact the department if you wish to have assistance from the state with these modifications.
State Health Lab data shows that the facility has been sampling for CBOD and nitrates on a quarterly basis as required by the permit, however, the city has not been reporting quarterly samples on DMRs.	All sample results must be reported on DMRs. More care should be taken when filling out DMRs. The October 2011 and March 2011 DMRs are being returned to the city for correction. Please resubmit these DMRs to DENR by **August 3, 2012.**

COMMENTS	REQUIRED CORRECTIVE ACTIONS
In several of the DMRs reviewed, it was found that the daily maximum is being reported instead of the maximum 7-day average for BOD_5 and TSS. Also, the last sample in the June 2011 discharge was taken in a week where the Saturday was in July. The sample results for that week should have been reported on the July 2011 DMR.	The maximum **7-day average** should be reported for BOD_5 and TSS. A 7-day average is based on a calendar week; Sunday – Saturday. During the last week of the month, the calendar week will often span the end of the current month and the beginning of the next month. This can result in confusion on how to properly report this 7-day average. In these cases, the 7-day average must be reported for the month where the week **ends** (i.e. – the month where the Saturday falls). The following DMRs are being returned to the city for correction: October 2010, December 2010, March 2011, June 2011, July 2011, and October 2011. Please resubmit these DMRs with the corrections by **August 3, 2012.** The March 2012 DMR, which was submitted via Net DMR, also needs to be corrected. The city needs to access this DMR in NetDMR to correct it. Please contact DENR if you have any questions about filling out DMRs. DMR calculation forms, showing the calculations are being sent with this inspection.
The September 2010 DMR was reviewed and it was found that the city is reporting a 30-day geometric mean for fecal coliform when less than 5 samples a month are taken.	More care should be taken when filling out DMRs. If less than five fecal coliform samples are taken in a month, the 30-day geometric mean should be reported as "NR" for Not Required. The September 2010 DMR is being returned for correction. Please resubmit the DMR with the correction by **August 3, 2012.**

COMMENTS	REQUIRED CORRECTIVE ACTIONS
The January 2011 DMR was submitted late.	Page 10 of your SWD Permit states under Reporting: *Effluent monitoring results obtained during the previous <u>three (3)</u> months shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period.* Failure to submit the DMRs is a violation of your permit. DMRs shall be submitted in accordance with the following schedule: • January – March: Due April 28th • April – June: Due July 28th • July – September: Due October 28th • October – December: Due January 28th
The city was approved to submit DMRs via NetDMR on March 19, 2012. The facility correctly submitted the March 2012 DMR prior to April 28th. When the facility submitted the April and May DMRs on June 1, 2012, they accidentally submitted the January through March DMRs again and changed the March 2012 DMR to no discharge.	The facility should take more care when submitting DMRs via NetDMR. The March 2012 DMR with all of the discharge data should be resubmitted in NetDMR. The facility also needs to unsubmit the January and February 2012 DMRs on NetDMR as an original paper version of the DMR was submitted to DENR. Please contact Tim Flor or Andrew Renner at DENR if you have any questions regarding NetDMR. *Note: The facility corrected the NetDMR submission errors on June 22, 2012.*

SWD PERMIT OFF-SITE EVALUATION CHECKLIST

South Dakota Department of Environment and Natural Resources

I. GENERAL INFORMATION

Facility Name	City of Brandon		
SWD Permit No.	SD0022535		
Reviewer / Title	Tina Piroutek/ Engineer II		
Review Date	June 8, 2012	**Last Inspection Date**	June 16, 2010
Permit Effective Date	April 1, 2000	**Expiration Date**	March 31, 2005

Industries Potentially Served by the Facility (Review Phone Book, Internet, Industrial Guide, etc.): Berquist Company, Crimson Fire, Front Line Chemicals, Luverne Truck Equipment, Pace Manufacturing, Total Fire Protection Inc.

Population Served 8,785 (2010 census)

Date Facility Began Operation 1983 **Date of Facility Upgrade(s)** 1991, 2002

II. PERMIT VERIFICATION

	Yes	No	N/A
1. DENR has been notified of any new, different, or increased loading to the WWTF. **According to previous onsite inspection, influent flows have been remaining constant.**		X	
2. Name of receiving water(s) and classification. **Big Sioux River 5, 7, 8, 9, 10**			
3. Names, address, location, and phone number are correct in the database and ICIS. If not, indicate correct information below.		X	
4. Are any changes to the permit necessary?		X	
5. Is the permit properly coded (Review Limit Summary in ICIS)?	X		
6. Is a follow-up letter to the facility required?	X		

Comments: *The Public Works Director, Rollie Hoeke, was added to the database and ICIS as a facility contact. DENR is waiting to reissue the permit until a TMDL of the watershed has been completed. Several monitoring requirements in the permit are written in old permit language and will need to be changed upon permit reissuance. Several parameters are coded using old codes. These will be fixed upon permit reissuance. A follow up letter will be sent to address calculation errors in DMRs, DMR reporting errors, the temperature of samples received at the State Health lab, and the number of violations since the last inspection.*

For office use only:	*OMA*	*OME*	*SEV*	*ENF*
	Yes ☐ No ☒	Yes ☐ No ☒	Yes ☐ No ☒	Yes ☐ No ☒

III. RECORDKEEPING AND REPORTING EVALUATION

1. The following information shall be reviewed where reasonably available:
   a. Lab results (Review Health Lab results, if applicable)
   b. Discharge Monitoring Reports (DMRs – Review last 2 years of DMRs)
   c. Emergency Discharge Forms
   d. Compliance Schedule Reports
   e. Other: ***Previous Inspection Report***
   f. Other: _____

	Yes	No	N/A
2. The facility is required to obtain permission from the department before discharging.		X	
a. If yes, has the facility requested permission for discharges			X
b. If yes, has the facility received permission for discharges			X
3. The facility is approved for NetDMR (If so, there will be no DMRs in the file after approval)	X		
4. The DMRs and/or Emergency Release Forms have been submitted on time		X	
5. The DMRs and/or Emergency Release Forms have been completed properly		X	
a. Monitoring for required parameters is performed at least as frequently as required by the permit		X	
b. Monitoring is performed for all required parameters	X		
c. Minimum, maximum, and average columns are properly completed		X	
d. The number of exceedances column (NO. EX) is completed properly	X*		
e. The permit signatory or authorized representative is signing the DMRs	X		
f. Each page of the DMRs is signed and dated	X		

Comments: *The facility is not required to receive permission to discharge. The facility does take a pre discharge sample to ensure that the wastewater meets the parameter limits. The facility was approved for NetDMR on March 19, 2012. The January 2011 DMR was submitted late to the department. The facility also accidentally resubmitted January through March 2012 DMRs on NetDMR and marked them all as no discharge. A discharge did occur in March 2012. All DMRs since June 2010, including the initial March 2012 DMR, were reviewed during this review and the DMR calculation forms can be found in Attachment 1. The facility is reporting the daily maximum values instead of the maximum 7-day averages for BOD_5 and TSS. The facility took a sample during the last week of June. Due to the "Saturday Rule", these results should have been reported for the maximum 7-day average on the July 2011 DMR. Also in September 2010, the facility calculated a geometric mean with only four sample results. The facility has also occasionally forgotten to report results for their quarterly testing of CBOD and nitrates. The number of exceedances column is being filled out correctly, however, because the facility had some calculation errors, the facility reported a couple of exceedances that were not violations. In September 2010, the fecal coliform 30-day geometric mean was counted as an exceedance, when it should have been reported as not required. In June 2011, the facility incorrectly calculated the BOD_5 maximum 7-day average as a violation, when the actual value was under the city's permit limit. Also, there should have been a violation reported on the July 2011 DMR for BOD_5 maximum7-day average. Numerous samples have been received at the State Health Lab above the maximum allowable temperatures of ≤6 °C for BOD_5, TSS, CBOD, and nitrates and <10 °C for fecal coliform.*

IV. COMPLIANCE EVALUATION

Facility Performance

		Yes	No	N/A
1. Facility has reported a discharge since last inspection. If yes, how many?	9	X		
2. Facility is in compliance with all effluent limits since last inspection.			X	
a. Effluent BOD_5 violations? If yes, how many?	6	X		
b. Effluent TSS violations? If yes, how many?			X	
c. Effluent pH violations? If yes, how many?			X	
d. Effluent ammonia violations? If yes, how many?			X	
e. Effluent fecal coliform violations? If yes, how many?	1	X		
f. Effluent total coliform violations? If yes, how many?				X
g. Effluent temperature violations? If yes, how many?				X

h.	Effluent TRC violations? If yes, how many?			X	
i.	Other effluent violations?			X	
3.	Department has received complaints (Describe below)			X	

Comments: *The facility had two daily maximum violations and a 30-day average violation for BOD_5 in September 2010. The facility also had a daily maximum fecal coliform violation in September 2010. The facility also reported a fecal coliform 30-day geometric mean violation, however they only took four fecal coliform samples during the month and a geometric mean is not appropriate. The facility had a 30-day average violation of BOD_5 in both March 2011 and June 2011. The facility also reported a maximum 7-day average violation on the June 2011 DMR. Due to the "Saturday Rule", this violation should have been reported on the July 2011 DMR.*

Enforcement/Compliance Schedule Evaluation

		Yes	No	N/A
1.	Has the facility received an enforcement action in the last 5 years?		X	
a.	Has the facility complied with the Order for Compliance?			X
b.	Have similar violations occurred?			X
c.	Were facility modifications or construction necessary to meet the Order?			X
2.	Is the facility subject to a compliance schedule either in its permit or in an enforcement action? If yes, note date and type of schedule.		X	
3.	List milestones that remain in the schedule:			
4.	Facility has missed milestone dates, but will still meet the final compliance date.			X

Comments: *DENR has sent warning letters to the facility on January 31, 2011, July 14, 2011, and June 6, 2012 concerning effluent violations.*

Sanitary Sewer Overflow Evaluation

Review file and SSO database for the following questions

		Yes	No	N/A
1.	Facility has reported sanitary sewer overflows or bypasses (internal, collection system, total). Describe in detail, including dates, total volumes, receiving waters: ***On September 24, 2010, there was an SSO at the Golf Course lift station due to the flooding of Splitrock Creek. An unknown amount of water was discharged into Splitrock Creek. The SSO was stopped by 10:30 am on September 25, 2010.***	X		
2.	DENR was properly notified of any bypasses/overflows (24-hr verbal notice plus written notification) or unauthorized releases (treated and/or untreated). If no, why not?	X		
3.	Samples were collected for all bypasses and/or overflows. If yes, summarize sampling results. If no, why not? ***The facility took 3 samples during the SSO: one upstream of the overflow, one at the overflow point, and one downstream of the overflow point. Samples were analyzed at the City of Sioux Falls Water Reclamation Plant. Attachment 2 contains the sample results.***	X		

Comments: *Facility had one SSO since the last inspection. DENR was notified within 24 hours of the SSO. The facility sent a letter to DENR with the sample results of the SSO the following month.*

Land Application Evaluation

		Yes	No	N/A
1.	Is the facility approved to land apply wastewater?		X	
2.	Has land application of wastewater occurred?			X
3.	Has the facility followed the sampling and reporting requirements for land application			X

Comments: *Facility has been interested in land applying sludge from the lagoon. A letter dated June 30, 2011 was sent to the city's public works director outline one-time sludge removal requirements. A second letter dated June 5, 2012 was sent to the city's engineer outlining the same requirements.*

Attachment 1- DMR Calculation Forms

***Notes for DMR Calculation Forms*:**

Data was obtained through the State Health Lab. Flow rate; temperature, pH, and ammonia are taken onsite on a daily basis. Therefore, not all values are provided to the state health lab and calculations on these parameters were not done in this review.

Highlighted cells = parameters filled out on the DMR incorrectly.

NA=Not applicable. The facility used this to fill out several fields that were not required. It is also used by DENR in this review to denote calculations that are not applicable because of the Saturday rule.

ND=No discharge.

NR=Not required.

NS= Not sampled.

Month of **July 2010**

Week 1 (July 4-10)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
7/6/2010	**15**	**36**	**9**	**<0.2**	**10**	**14**
7/7/2010	**16**	**30**	**NS**	**NS**	**40**	**10**
7/8/2010	**17**	**31**	**NS**	**NS**	**10**	**9**
Week Total	**48**	**97**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**16**	**32.33**	----------	----------	----------	----------
Week 2 (July 11-17)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
7/12/2010	**21**	**50**	**NS**	**NS**	**10**	**9**
Week Total	**21**	**50**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**21**	**50**	----------	----------	----------	----------
Week 3 (July 18-24)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
7/19/2010	**28**	**59**	**NS**	**NS**	**120**	**11**
Week Total	**28**	**59**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**28**	**59**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	**120**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**28**	**59**	----------	----------	----------	----------
Month Total	**97**	**206**	**9**	**<0.2**	----------	----------
÷ # of Samples	**5**	**5**	**1**	**1**	----------	----------
=30-Day Avg.	**19.4**	**41.2**	**9**	**<0.9**	**Geo=21.69**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	120	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	28	59	----------	----------	----------	----------
30-Day Avg.	19.45	41.2	9	<0.2	21.69	----------

Month of **September 2010**

Week 1 (September 12-18)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
9/13/2010	**34**	**47**	**NS**	**NS**	**<10**	**11**
9/14/2010	**44**	**42**	**NS**	**NS**	**10**	**7**
9/15/2010	**66**	**44**	**NS**	**NS**	**130**	**8**
Week Total	**144**	**133**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**48**	**44.33**	----------	----------	----------	----------
Week 2 (September 19-25)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
9/20/2010	**106**	**55**	**NS**	**NS**	**910**	**10**
Week Total	**106**	**55**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**106**	**55**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**910**	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	**106**	**55**	----------	----------	---------	----------
Month Total	**250**	**188**	**NR**	**NR**	---------	----------
÷ # of Samples	**4**	**4**	**0**	**0**	---------	----------
=30-Day Avg.	**62.50**	**47**	**NR**	**NR**	**Geo=NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	910	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	106	55	----------	----------	---------	----------
30-Day Avg.	62.50	47	NA	NA	265	----------

Month of **October 2010**

Week 1 (October 24-30)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
10/25/2010	**12**	**33**	**8**	**1.4**	**NR**	**8**
10/26/2010	**35**	**28**	**NS**	**NS**	**NR**	**7**
10/27/2010	**38**	**40**	**NS**	**NS**	**NR**	**5**
Week Total	**85**	**101**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**28.33**	**33.67**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**28.33**	**33.67**	----------	----------	----------	----------
Month Total	**85**	**101**	**8**	**1.4**	----------	----------
÷ # of Samples	**3**	**3**	**1**	**1**	----------	----------
=30-Day Avg.	**28.33**	**33.67**	**8**	**1.4**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	38	40	----------	----------	----------	----------
30-Day Avg.	28.33	33.67	8	1.4	NR	----------

Month of **December 2010**

Week 1 (December 5-11)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
12/6/2010	**24**	**27**	**NS**	**NS**	**NS**	**4**
12/7/2010	**17**	**21**	**NS**	**NS**	**NS**	**5**
12/8/2010	**18**	**22**	**NS**	**NS**	**NS**	**4**
Week Total	**59**	**70**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**19.67**	**23.33**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**19.67**	**23.3**	----------	----------	----------	----------
Month Total	**59**	**70**	**NR**	**NR**	----------	----------
÷ # of Samples	**3**	**3**	**0**	**0**	----------	----------
=30-Day Avg.	**19.67**	**23.33**	**NR**	**NR**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	19.67	27	----------	----------	----------	----------
30-Day Avg.	19.67	23.33	NA	NA	NR	----------

Month of **March 2011**

Week 1 (March 20-26)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
3/21/2011	**34**	**20**	**24**	**<0.2**	**NR**	**5**
3/22/2011	**37**	**20**	**NS**	**NS**	**NR**	**6**
3/23/2011	**39**	**20**	**NS**	**NS**	**NR**	**6**
Week Total	**110**	**60**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**36.67**	**20**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**36.67**	**20**	----------	----------	----------	----------
Month Total	**110**	**60**	**24**	**<0.2**	----------	----------
÷ # of Samples	**3**	**3**	**1**	**1**	----------	----------
=30-Day Avg.	**36.67**	**20**	**24**	**<0.2**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (°C)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	39	20	----------	----------	----------	----------
30-Day Avg.	36.67	20	na	na	NR	----------

Month of **April 2011**

Week 1 (April 17-23)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
4/18/2011	**13**	**18**	**NS**	**NS**	**NR**	**8**
4/19/2011	**12**	**17**	**NS**	**NS**	**NR**	**7**
4/20/2011	**14**	**15**	**NS**	**NS**	**NR**	**8**
Week Total	**39**	**50**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**13**	**16.67**	----------	----------	----------	----------
Week 2 (April 24-30)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
4/25/2011	**16**	**27**	**11**	**<0.2**	**NR**	**3**
Week Total	**16**	**27**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**16**	**27**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**16**	**27**	----------	----------	----------	----------
Month Total	**55**	**77**	**11**	**<0.2**	----------	----------
÷ # of Samples	**4**	**4**	**1**	**1**	----------	----------
=30-Day Avg.	**13.75**	**19.25**	**11**	**<0.2**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	16	27	----------	----------	----------	----------
30-Day Avg.	13.75	19.25	11	<0.2	NR	----------

Month of **June 2011**

Week 1 (June 5-11)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
6/6/2011	**64**	**27**	**NS**	**NS**	**40**	**8**
6/7/2011	**25**	**29**	**NS**	**NS**	**90**	**9**
6/8/2011	**16**	**25**	**NS**	**NS**	**30**	**7**
Week Total	**105**	**81**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**35**	**27**	----------	----------	----------	----------
Week 2 (June 12-18)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
6/13/2011	**18**	**62**	**NS**	**NS**	**40**	**5**
Week Total	**18**	**62**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**18**	**62**	----------	----------	----------	----------
Week 3 (June 19- 25)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
6/20/2011	**34**	**58**	**NS**	**NS**	**10**	**10**
Week Total	**34**	**58**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**34**	**58**	----------	----------	----------	----------
Week 4 (June 26- July 2)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
6/29/2011	**78**	**65**	**NS**	**NS**	**130**	**4**
Week Total	**NA**	**NA**	----------	----------	----------	----------
÷ # of Samples	**NA**	**NA**	----------	----------	----------	----------
=7-Day Avg.	**NA**	**NA**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**130**	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	**35**	**62**	----------	----------	---------	----------
Month Total	**235**	**266**	**NR**	**NR**	---------	----------
÷ # of Samples	**6**	**6**	**0**	**0**	---------	----------
=30-Day Avg.	**39.17**	**44.33**	**NR**	**NR**	**Geo=42.16**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	130	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	78	65	----------	----------	---------	----------
30-Day Avg.	39.17	44.33	NA	NA	42.16	----------

Month of **July 2011**

Week 1 (June 26- July 2)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
6/29/2011	**78**	**65**	**NS**	**NS**	**130**	**4**
Week Total	**78**	**65**	----------	----------	----------	----------
÷ # of Samples	**1**	**1**	----------	----------	----------	----------
=7-Day Avg.	**78**	**65**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	**78**	**65**	----------	----------	----------	----------
Month Total	**NR**	**NR**	**NR**	**NR**	----------	----------
÷ # of Samples	**NR**	**NR**	**NR**	**NR**	----------	----------
=30-Day Avg.	**NR**	**NR**	**NR**	**NR**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	ND	----------
Daily Min.	----------	----------	----------	----------	----------	----------
Max. 7-day Avg.	78	65	----------	----------	----------	----------
30-Day Avg.	ND	ND	ND	ND	ND	----------

Month of **October 2011**

Week 1(October 16-22)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
10/17/2011	**13**	**48**	**8**	**1.0**	**NR**	**5**
10/18/2011	**35**	**43**	**NS**	**NS**	**NR**	**8**
10/19/2011	**37**	**43**	**NS**	**NS**	**NR**	**8**
Week Total	**85**	**134**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**28.33**	**44.67**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	**28.33**	**44.67**	----------	----------	---------	----------
Month Total	**85**	**134**	**8**	**1.0**	---------	----------
÷ # of Samples	**3**	**3**	**1**	**1**	---------	----------
=30-Day Avg.	**28.33**	**44.67**	**8**	**1.0**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	37	48	----------	----------	---------	----------
30-Day Avg.	28.33	44.67	8	NA	NR	----------

Month of **March 2012**

Week 1 (March 4-10)						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
3/5/2012	**27**	**28**	**24**	**0.4**	**NR**	**6**
3/6/2012	**22**	**23**	**NS**	**NS**	**NR**	**6**
3/7/2012	**26**	**33**	**NS**	**NS**	**NR**	**5**
Week Total	**75**	**84**	----------	----------	----------	----------
÷ # of Samples	**3**	**3**	----------	----------	----------	----------
=7-Day Avg.	**25**	**28**	----------	----------	----------	----------
Monthly Summary						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	**NR**	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	**25**	**28**	----------	----------	---------	----------
Month Total	**75**	**84**	**24**	**0.4**	---------	----------
÷ # of Samples	**3**	**3**	**1**	**1**	---------	----------
=30-Day Avg.	**25**	**28**	**24**	**0.4**	**NR**	----------
Reported on DMR						
Date	BOD (mg/L)	TSS (mg/L)	CBOD (mg/L)	Nitrates (mg/L)	Fecal (#/100mL)	Temp rec'd (ºC)
Daily Max.	----------	----------	----------	----------	NR	----------
Daily Min.	----------	----------	----------	----------	---------	----------
Max. 7-day Avg.	27	33	----------	----------	---------	----------
30-Day Avg.	25	28	NA	NA	NR	----------

Attachment 2- SSO Sampling Results

Upstream Results

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CITY OF SIOUX FALLS

AN EQUAL OPPORTUNITY EMPLOYER

Water Reclamation Laboratory

4500 North Sycamore Avenue • Sioux Falls, SD 57104-6407 • (605) 367-8188 • FAX (605) 367-8484

Report Number
10-10-002

REPORT OF ANALYSIS

Mail to: City of Brandon
304 Main Avenue
Brandon, SD 57005

Attn: Rollie Hoeke

Date Reported: 10/1/2010
Date Received: 9/24/2010

Purpose: Sanitary Sewer Overflow

Sample Point: City of Brandon
Receiving Stream, upstream of SSO

Sample ID	Parameter	Level Found	Units	Method Detection Limit	Units	Method	Analyst/Date
1009241645	Biochemical Oxygen Demand (BOD_5)	8.0	mg/L	0.1	mg/L	SM 5210 B	KK/9-25-10
	Total Suspended Solids (TSS)	84	mg/l	0.1	mg/L	SM 2540 D	KK/9-25-10
	pH	7.4	SU	NA		EPA 150.1	KK/9-25-10
	Fecal Coliforms	10,700	per 100mL	714	per 100mL	SM 9222 D	CB/9-24-10
	Ammonia Nitrogen (electrode)	0.11	mg/L	0.01	mg/L	SM 4500-NH3 F	KK/9-25-10

The method prefix "SM" refers to the 18th edition of Standard Methods for the Examination of Water and Wastewater.

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Submitted by:

Curt Brynjulson
Chemist

SSO-Outfall Results

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Water Reclamation Laboratory
4500 North Sycamore Avenue • Sioux Falls, SD 57104-6407 • (605) 367-8188 • FAX (605) 367-8484

Report Number
10-10-001

REPORT OF ANALYSIS

Mail to: City of Brandon
304 Main Avenue
Brandon, SD 57005

Attn: Rollie Hoeke

Date Reported: 10/1/2010
Date Received: 9/24/2010

Purpose: Sanitary Sewer Overflow

Sample Point: City of Brandon
SSO Source

Sample ID	Parameter	Level Found	Units	Method Detection Limit	Units	Method	Analyst/Date
1009241641	Biochemical Oxygen Demand (BOD_5)	29.3	mg/L	0.1	mg/L	SM 5210 B	KK/9-25-10
	Total Suspended Solids (TSS)	256	mg/l	0.1	mg/L	SM 2540 D	KK/9-25-10
	pH	7.5	SU	NA		EPA 150.1	KK/9-25-10
	Fecal Coliforms	647,000	per 100mL	2,270	per 100mL	SM 9222 D	CB/9-24-10
	Ammonia Nitrogen (electrode)	1.74	mg/L	0.01	mg/L	SM 4500-NH3 F	KK/9-25-10

The method prefix "SM" refers to the 18th edition of Standard Methods for the Examination of Water and Wastewater.

Submitted by:

Curt Brynjulson
Chemist

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Downstream Results

PUBLIC WORKS

CITY OF SIOUX FALLS

AN EQUAL OPPORTUNITY EMPLOYER

Water Reclamation Laboratory

4500 North Sycamore Avenue • Sioux Falls, SD 57104-6407 • (605) 367-8188 • FAX (605) 367-8484

Report Number
10-10-003

REPORT OF ANALYSIS

Mail to: City of Brandon
304 Main Avenue
Brandon, SD 57005

Attn: Rollie Hoeke

Date Reported: 10/1/2010
Date Received: 9/24/2010

Purpose: Sanitary Sewer Overflow

Sample Point: City of Brandon
Receiving Stream, downstream of SSO

Sample ID	Parameter	Level Found	Units	Method Detection Limit	Units	Method	Analyst/Date
1009241646	Biochemical Oxygen Demand (BOD_5)	5.1	mg/L	0.1	mg/L	SM 5210 B	KK/9-25-10
	Total Suspended Solids (TSS)	202	mg/l	0.1	mg/L	SM 2540 D	KK/9-25-10
	pH	7.8	SU	NA		EPA 150.1	KK/9-25-10
	Fecal Coliforms	10,000	per 100mL	714	per 100mL	SM 9222 D	CB/9-24-10
	Ammonia Nitrogen (electrode)	0.11	mg/L	0.01	mg/L	SM 4500-NH3 F	KK/9-25-10

The method prefix "SM" refers to the 18th edition of Standard Methods for the Examination of Water and Wastewater.

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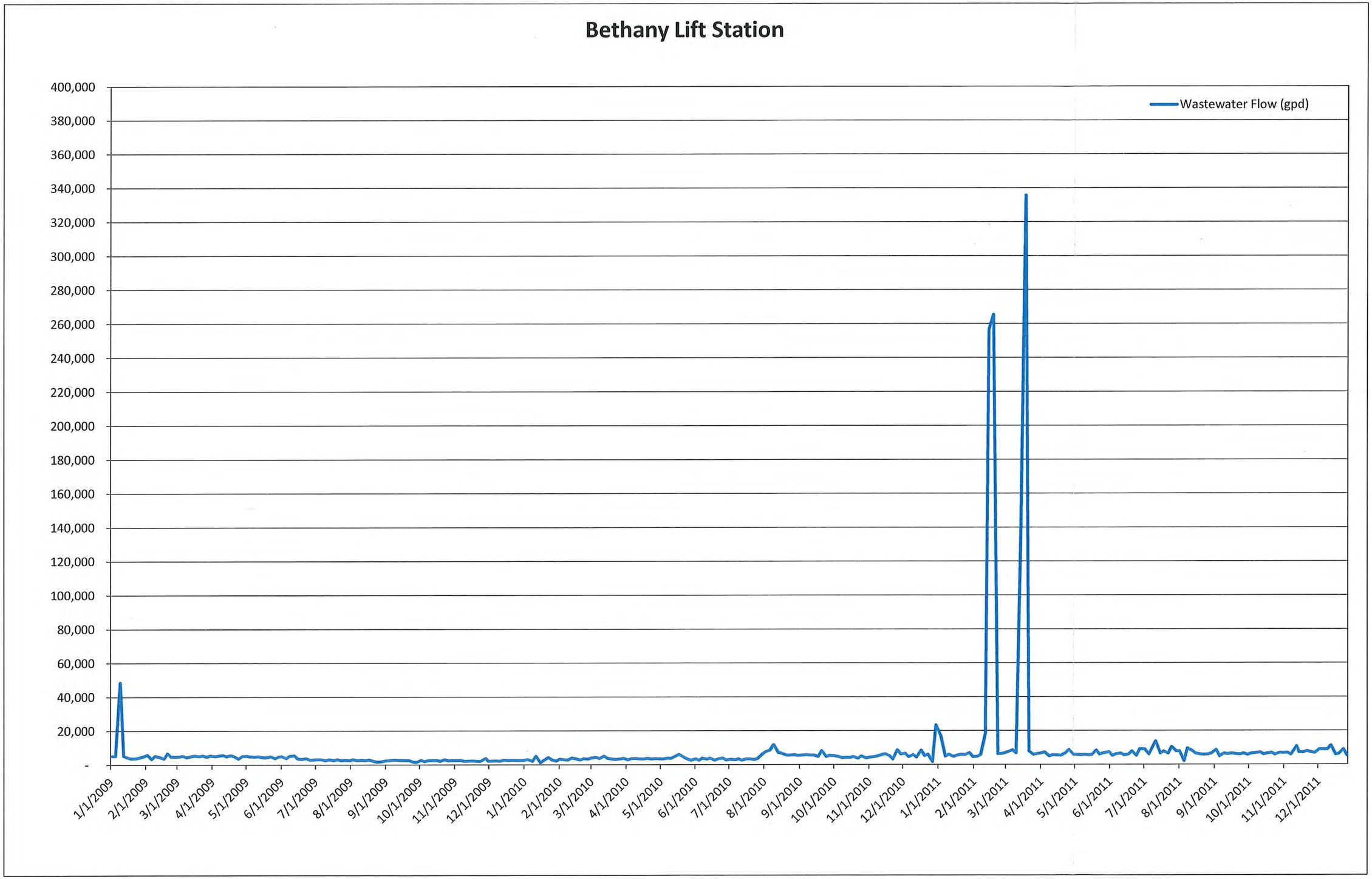
Submitted by:

Curt Brynjulson
Chemist

Appendix C
Lift Station Records


Bethany Lift Station
Wastewater Flow (gpd)
400,000
380,000
360,000
340,000
320,000
300,000
280,000
260,000
240,000
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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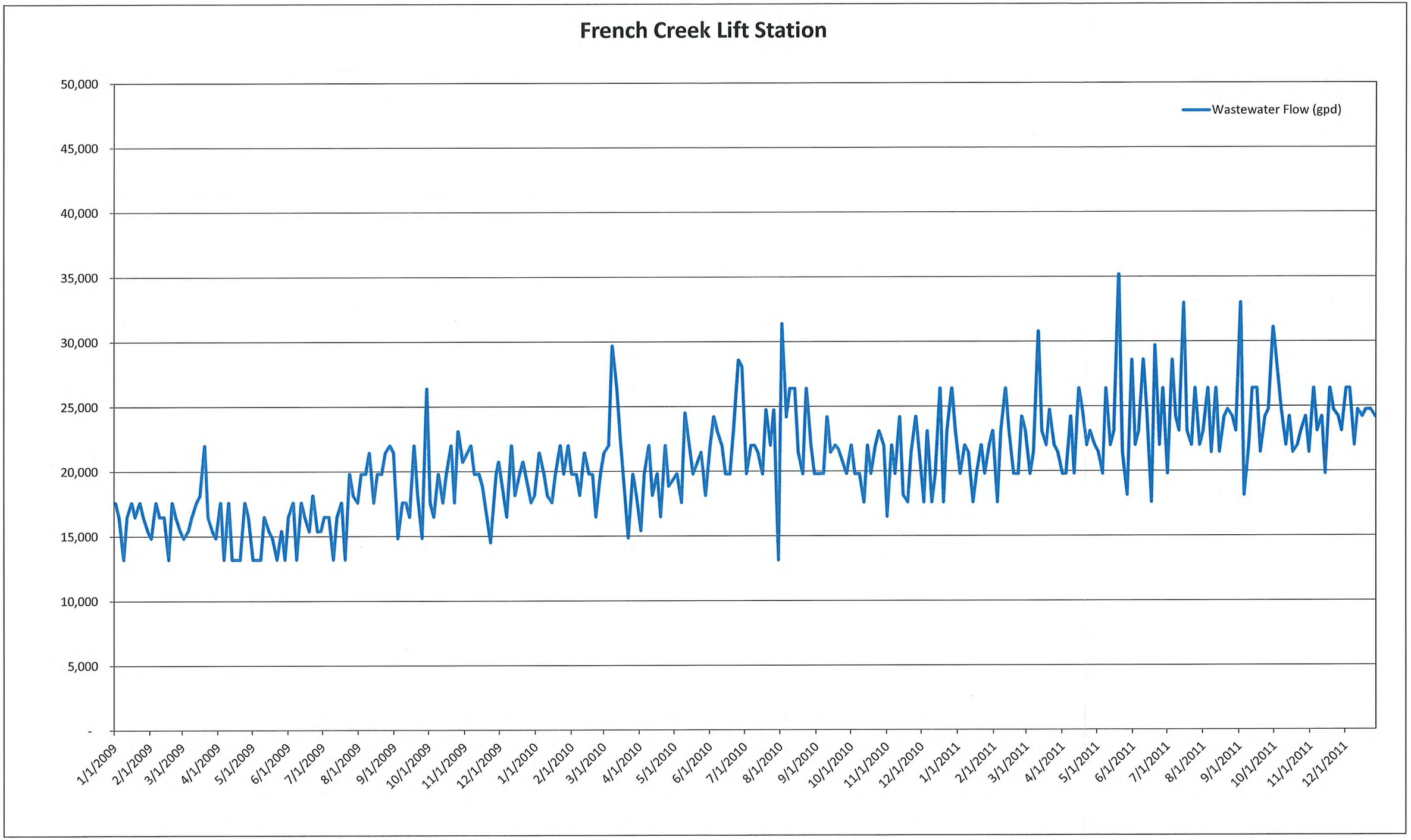
11/1/2011
12/1/2011


French Creek Lift Station
Wastewater Flow (gpd)
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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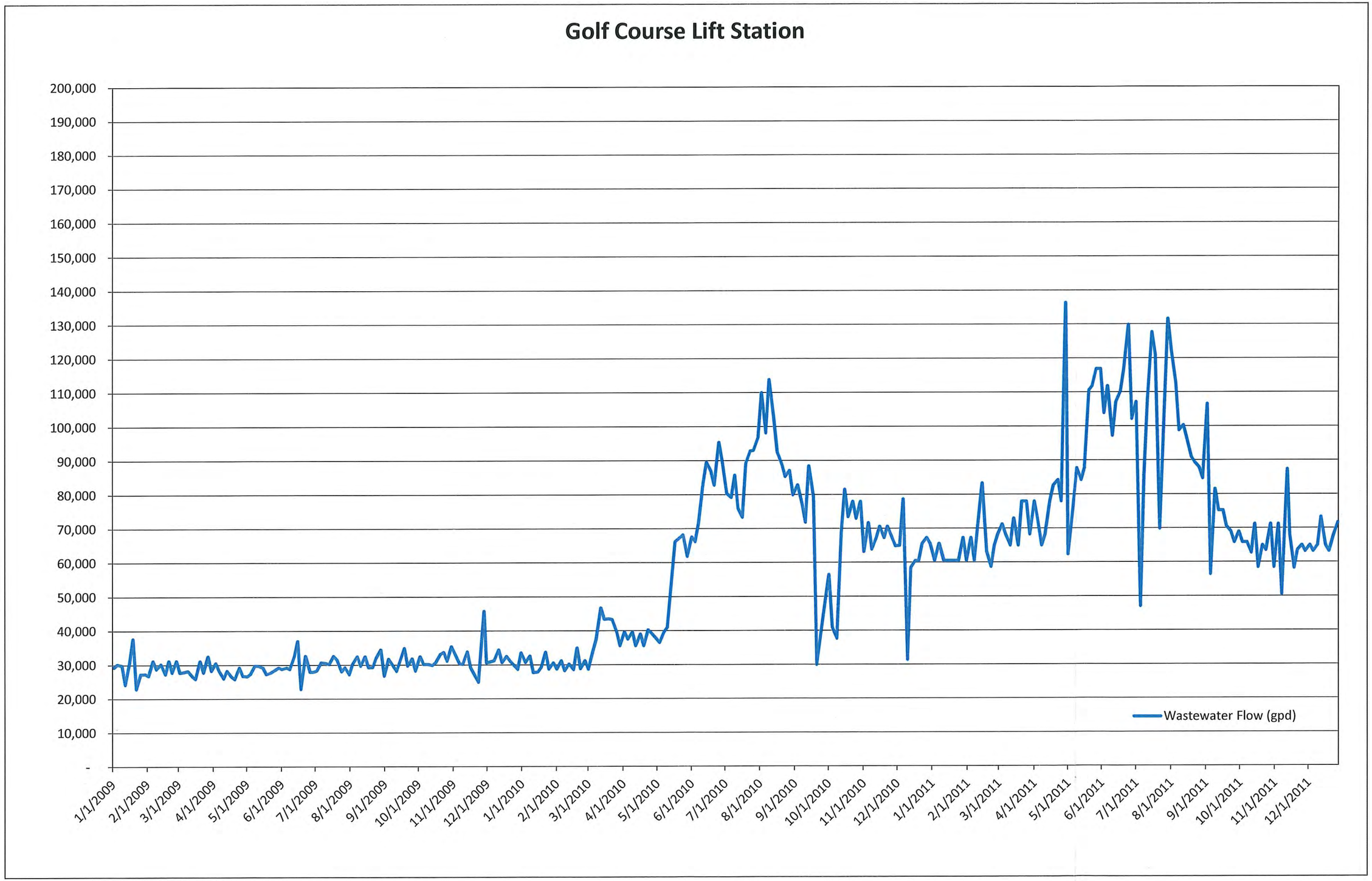
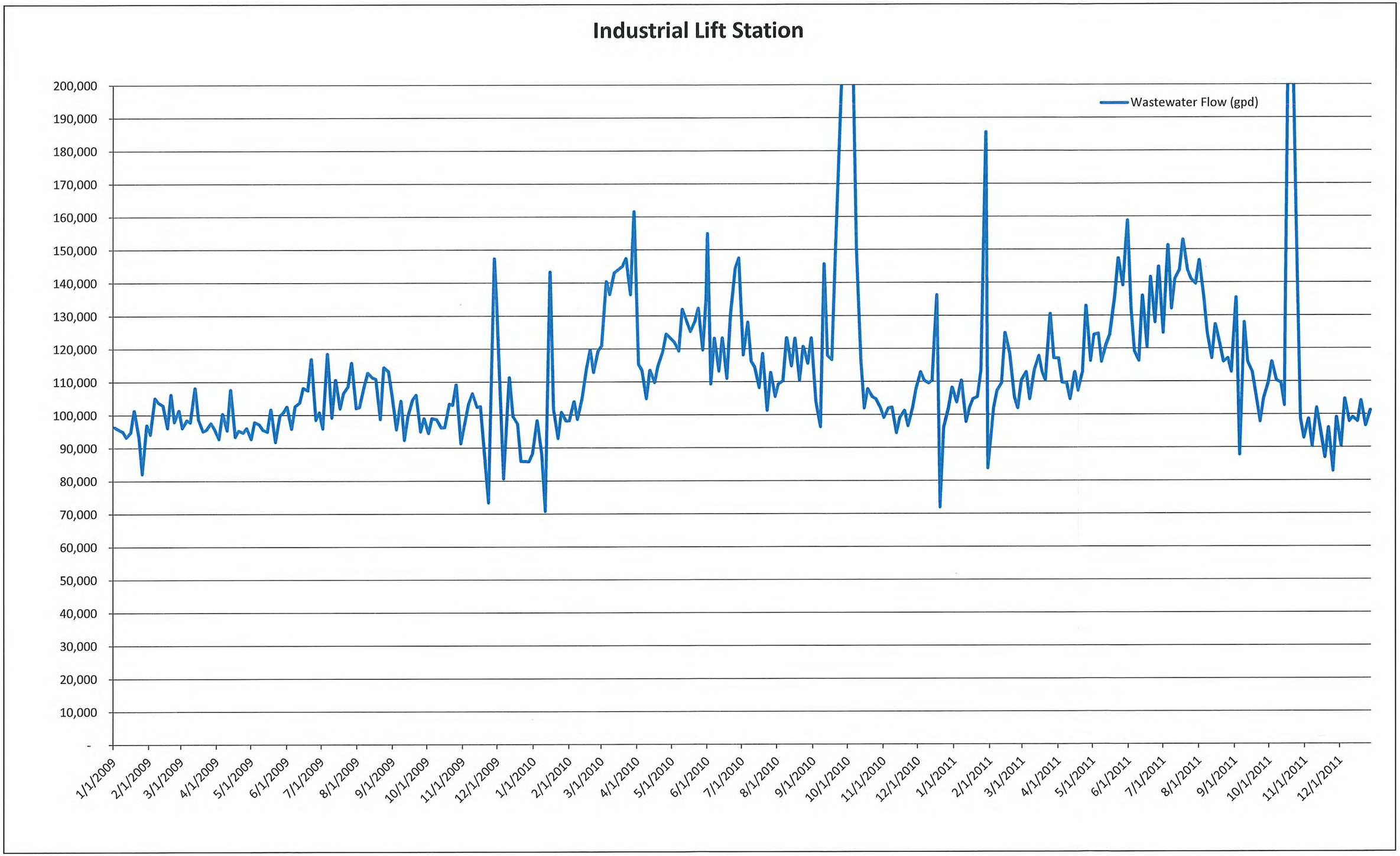
11/1/2011
12/1/2011


Golf Course Lift Station
200,000
190,000
180,000
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
4/1/2011
5/1/2011
6/1/2011
7/1/2011
8/1/2011
9/1/2011
10/1/2011
11/1/2011
12/1/2011
Wastewater Flow (gpd)


Industrial Lift Station
Wastewater Flow (gpd)
200,000
190,000
180,000
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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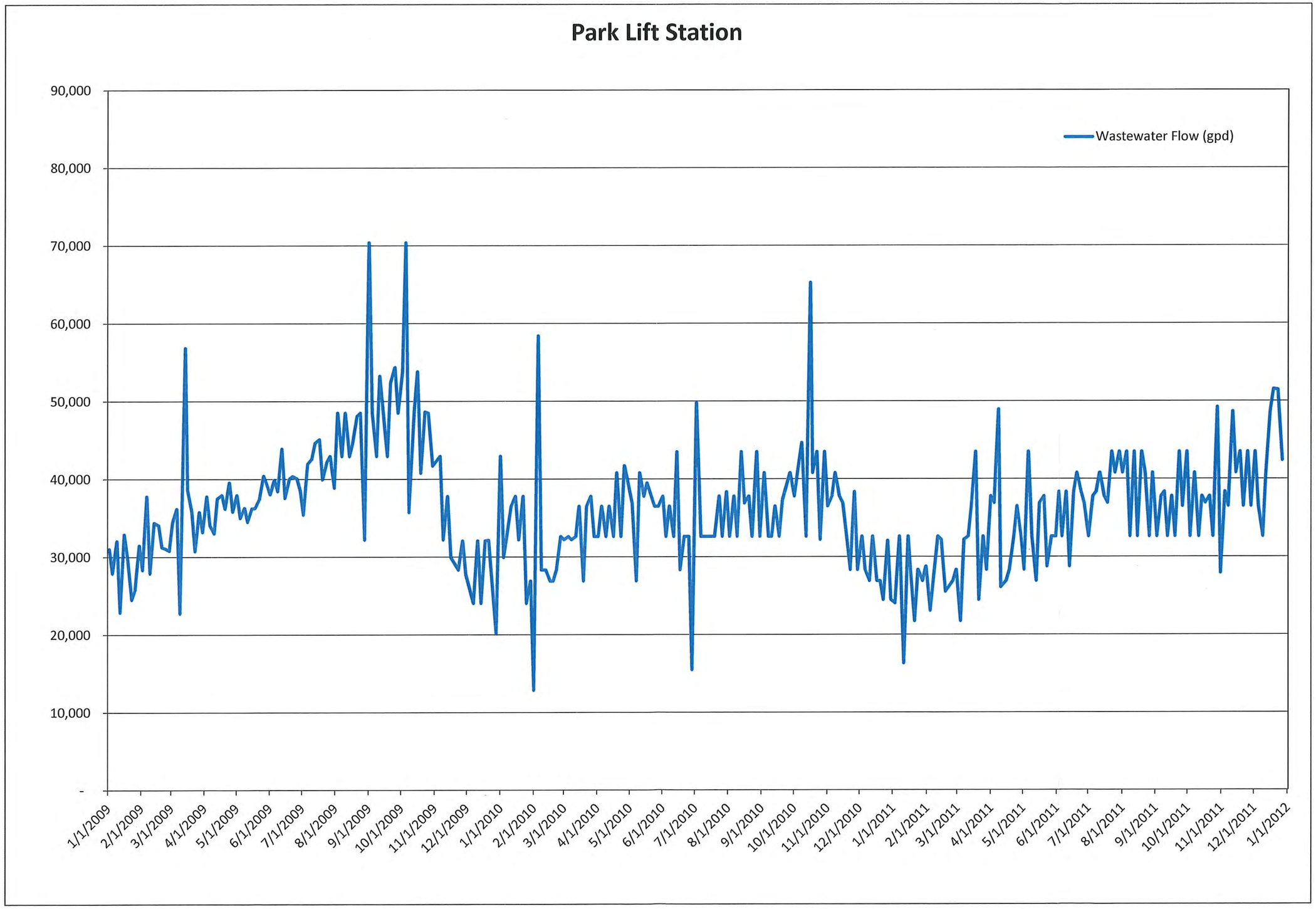
11/1/2011
12/1/2011


Park Lift Station
Wastewater Flow (gpd)
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
4/1/2011
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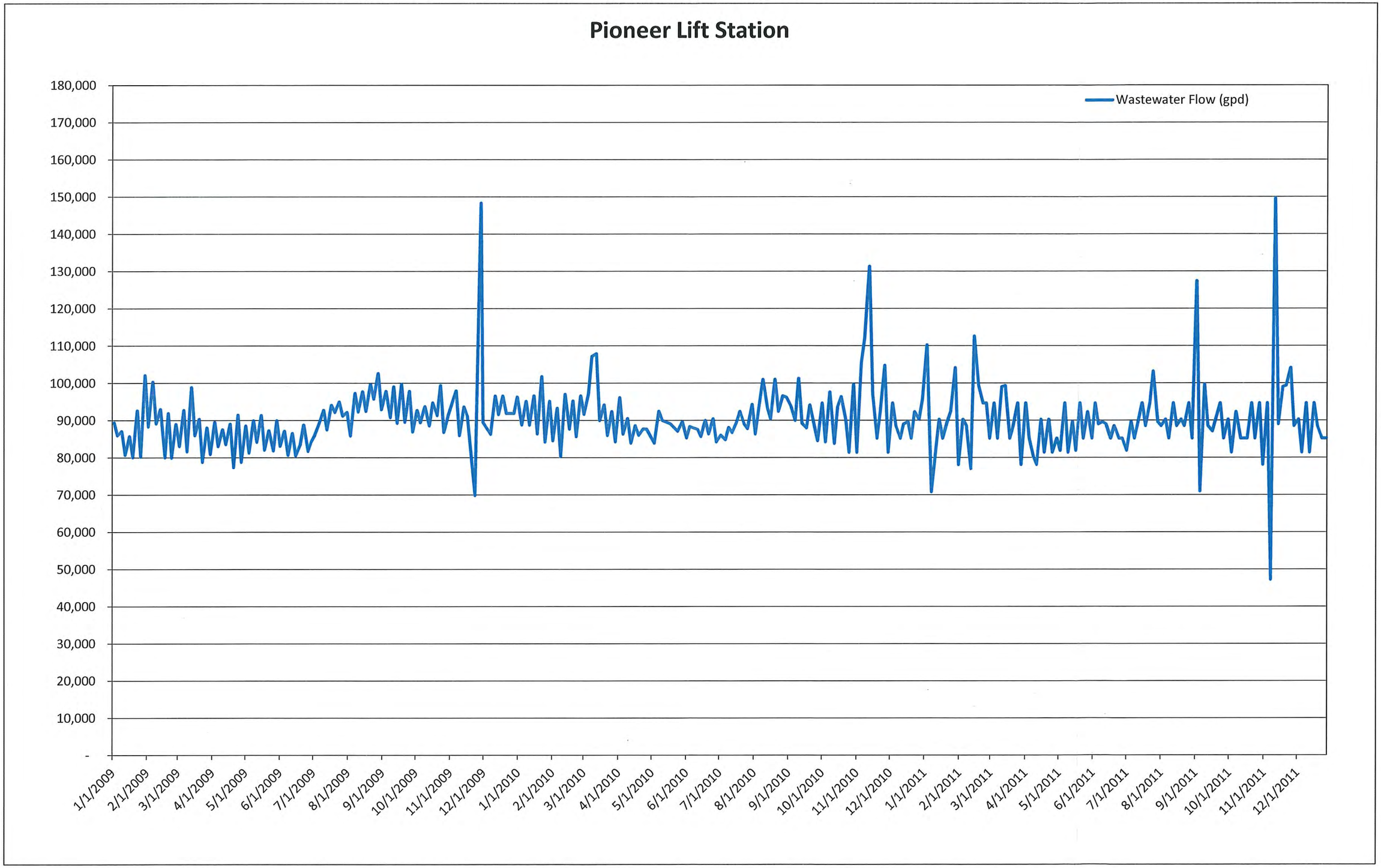
12/1/2011
1/1/2012


Pioneer Lift Station
Wastewater Flow (gpd)
180,000
170,000
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
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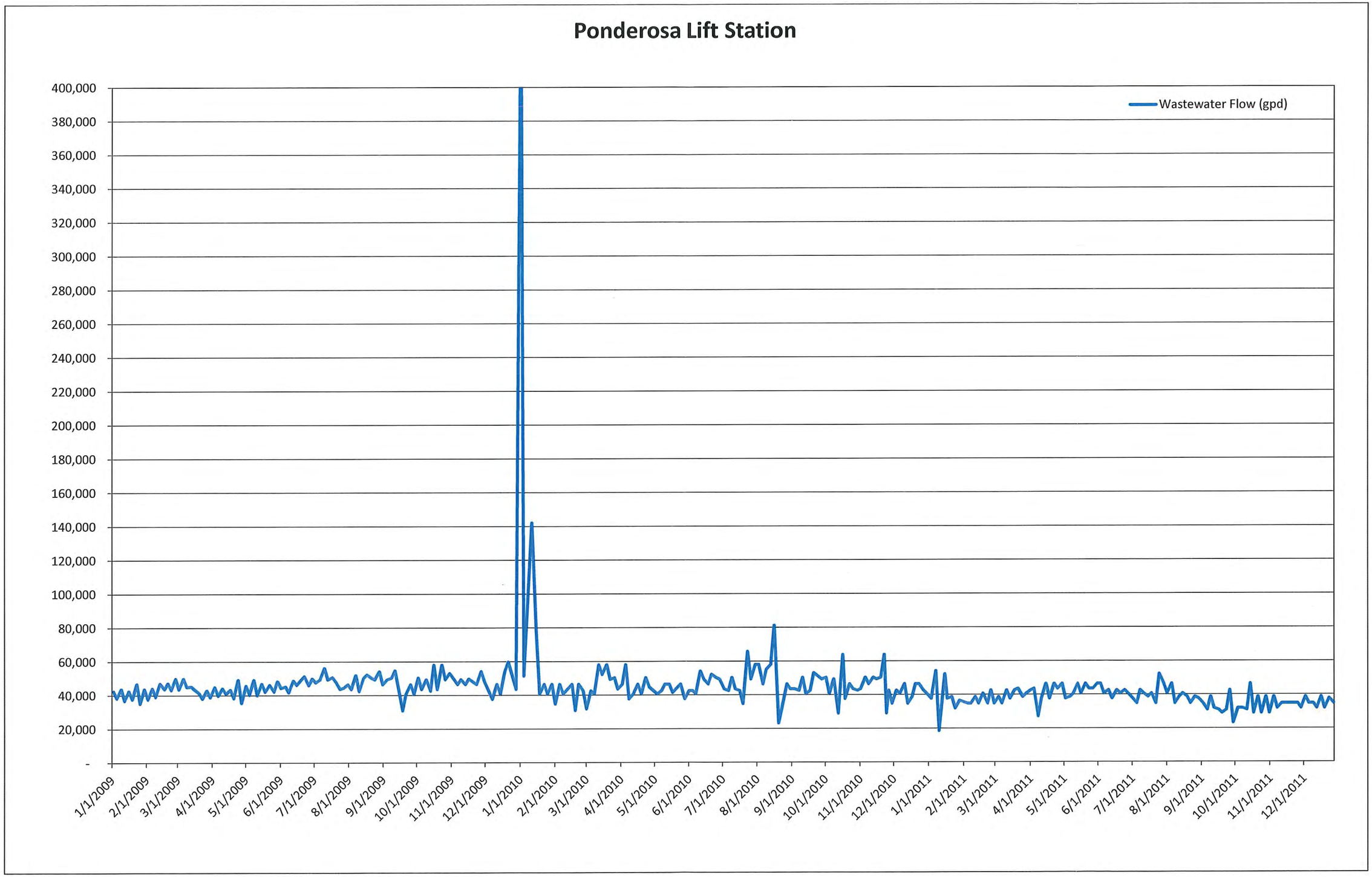
11/1/2011
12/1/2011


Ponderosa Lift Station
Wastewater Flow (gpd)
400,000
380,000
360,000
340,000
320,000
300,000
280,000
260,000
240,000
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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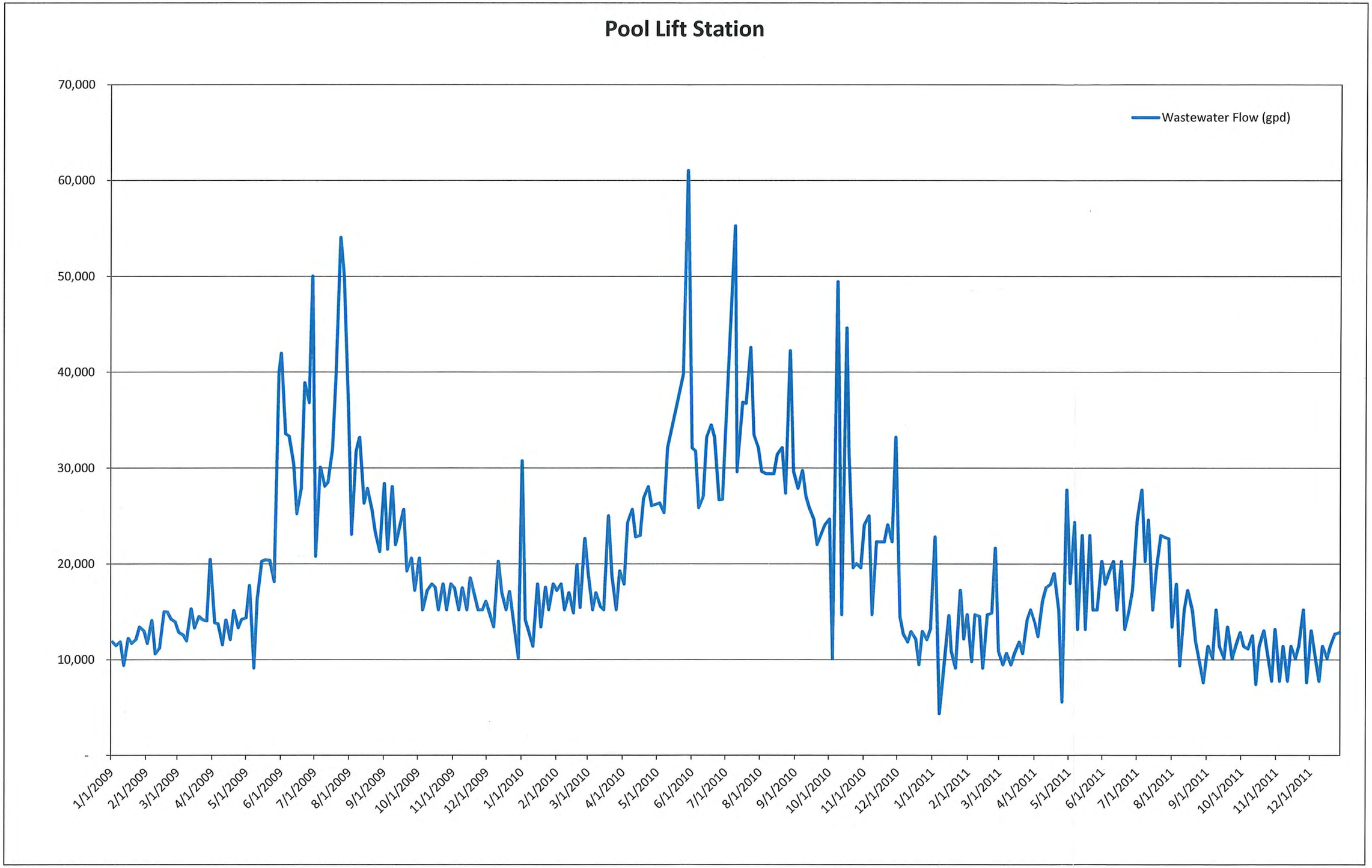
11/1/2011
12/1/2011


Pool Lift Station
Wastewater Flow (gpd)
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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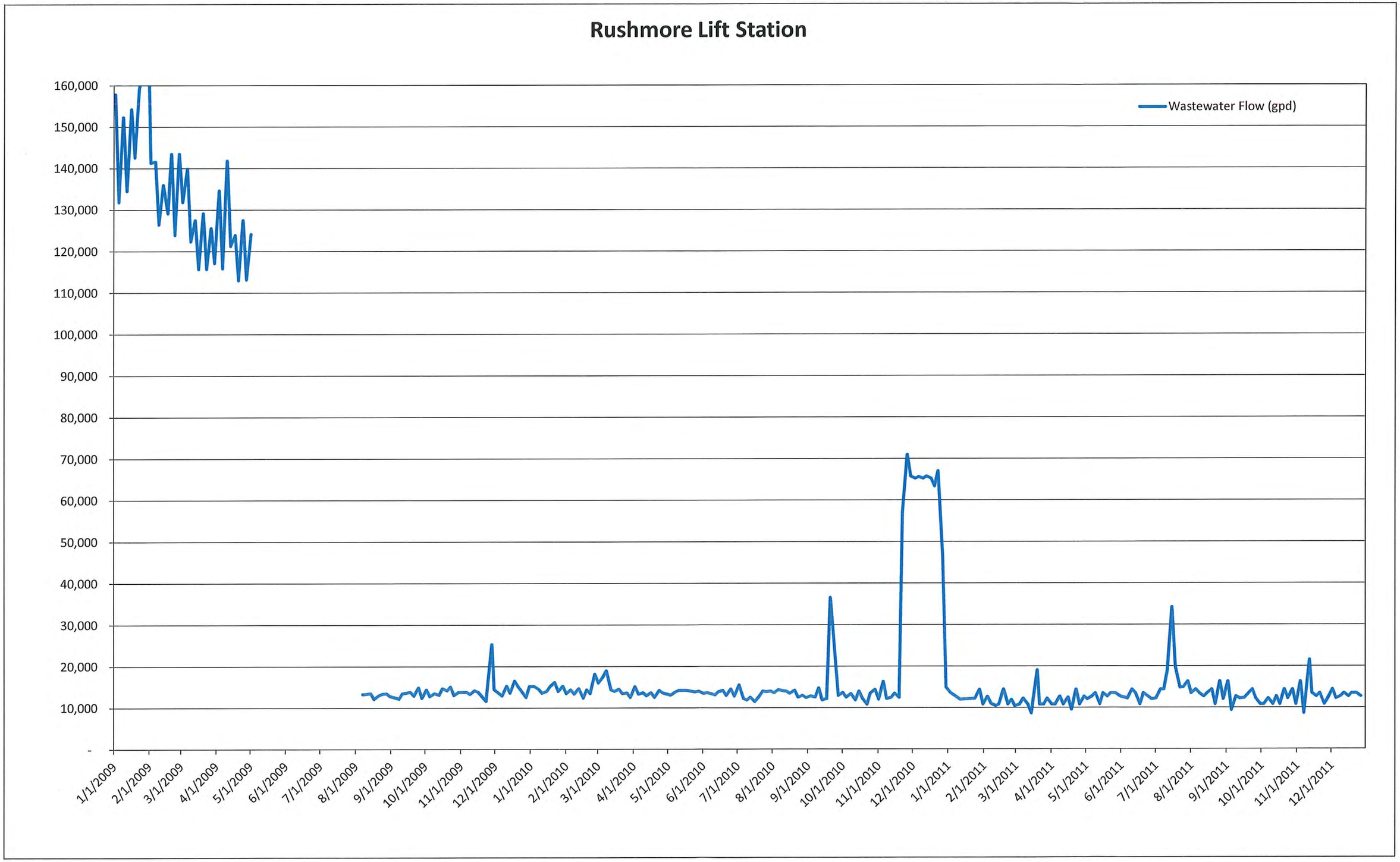
11/1/2011
12/1/2011


Rushmore Lift Station
Wastewater Flow (gpd)
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
2/1/2011
3/1/2011
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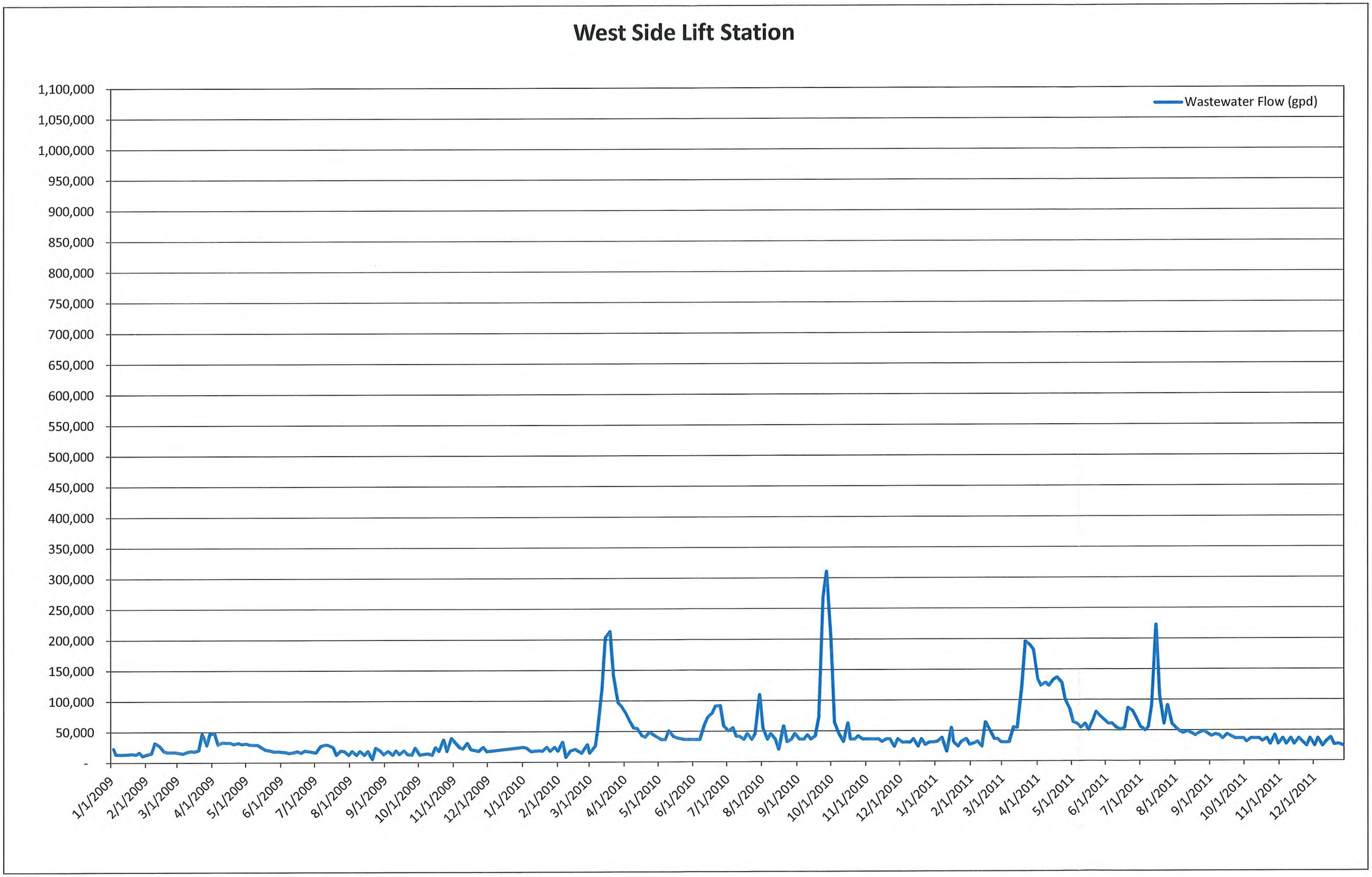
11/1/2011
12/1/2011


West Side Lift Station
Wastewater Flow (gpd)
1,100,000
1,050,000
1,000,000
950,000
900,000
850,000
800,000
750,000
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
5/1/2010
6/1/2010
7/1/2010
8/1/2010
9/1/2010
10/1/2010
11/1/2010
12/1/2010
1/1/2011
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3/1/2011
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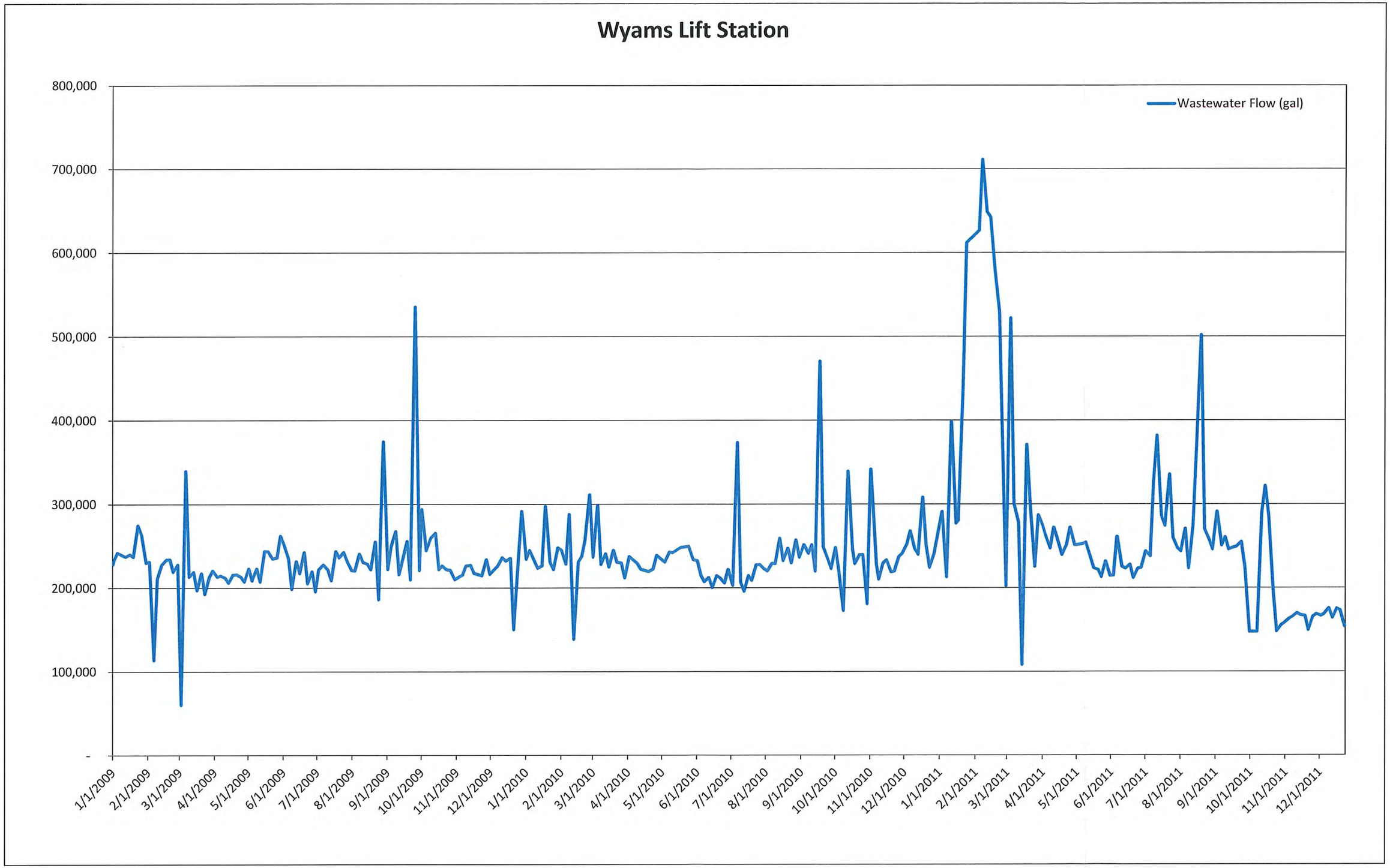
11/1/2011
12/1/2011


Wyams Lift Station
Wastewater Flow (gal)
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
-
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
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3/1/2010
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5/1/2010
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7/1/2010
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11/1/2010
12/1/2010
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4/1/2011
5/1/2011
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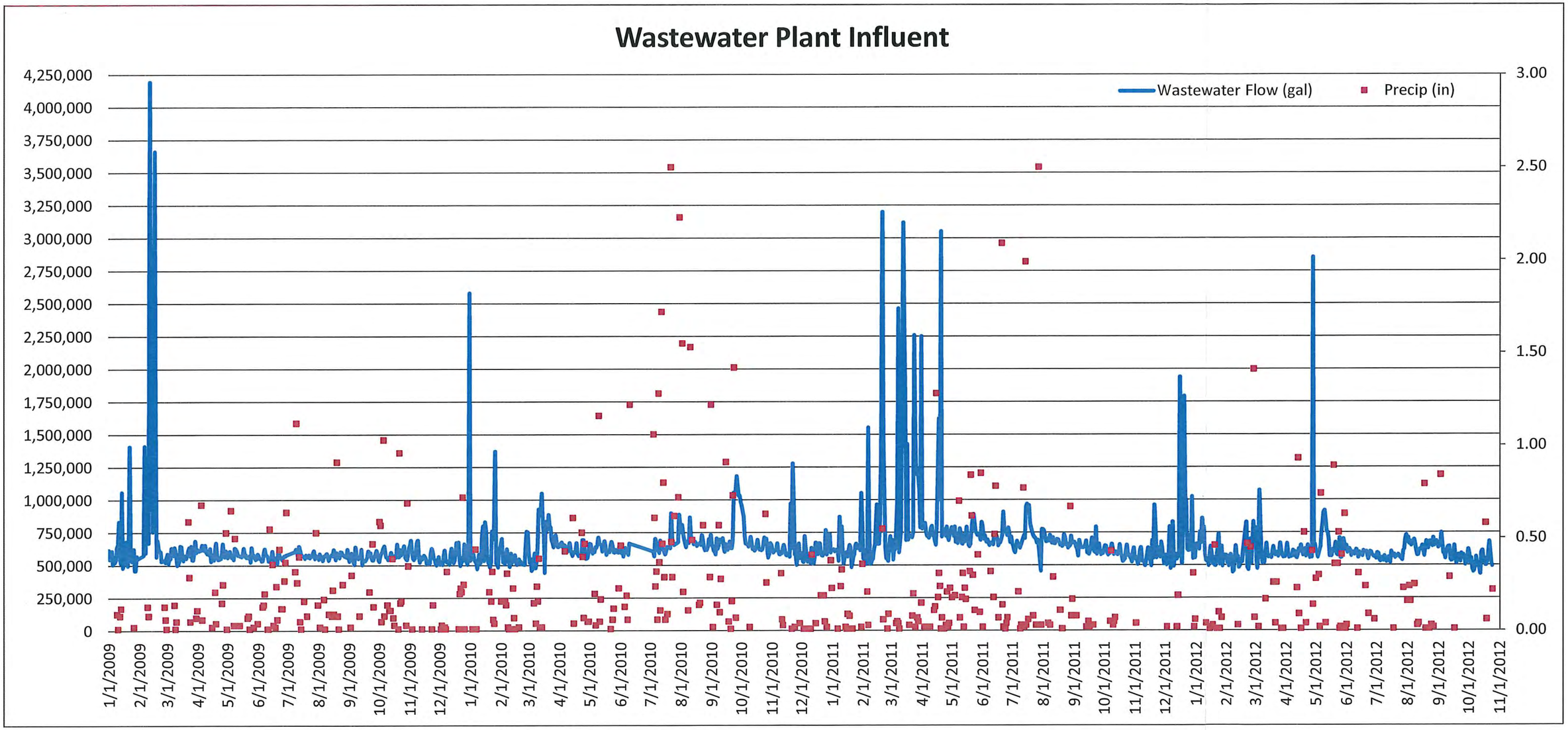
12/1/2011

Appendix D
Wastewater Treatment Influent Records


Wastewater Plant Influent
Wastewater Flow (gal)
Precip (in)
4,250,000
4,000,000
3,750,000
3,500,000
3,250,000
3,000,000
2,750,000
2,500,000
2,250,000
2,000,000
1,750,000
1,500,000
1,250,000
1,000,000
750,000
500,000
250,000
0
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1/1/2009
2/1/2009
3/1/2009
4/1/2009
5/1/2009
6/1/2009
7/1/2009
8/1/2009
9/1/2009
10/1/2009
11/1/2009
12/1/2009
1/1/2010
2/1/2010
3/1/2010
4/1/2010
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2/1/2012
3/1/2012
4/1/2012
5/1/2012
6/1/2012
7/1/2012
8/1/2012
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10/1/2012
11/1/2012

Appendix E
Comprehensive Plan

BRANDON

Comprehensive Plan
2007 - 2027

Prepared by the South Eastern Council of Governments at the direction of
the Planning and Zoning Commission and City Council of Brandon, South Dakota

ACKNOWLEDGMENTS

This Comprehensive Plan is a compilation of effort by many people, organizations and government entities. This document expresses the great civic pride that exists in the City of Brandon. Through the preparation and adoption of this document, the governing officials of Brandon have expressed their desire for orderly and efficient growth and development in the community and surrounding area.

City Council

Mayor:	Larry Beesley
Council Members:	Harry Buck, Don Hammond, Brett Karber, Dan Mostek, Steven Rubin, John Saarloos
City Administrator:	Dennis E. Olson

Planning and Zoning Commission

Chairman:	Chuck Parsons
Board Members:	Paul Bosch, Jon Jacobson, Tim Jorgenson, Marvin Peterson, Linda Weber

The South Eastern Council of Governments prepared this document under the direction of the Brandon Planning and Zoning Commission and Brandon City Council.

RESOLUTION NO. _____

A RESOLUTION ADOPTING A COMPREHENSIVE PLAN FOR CITY OF BRANDON, AS PROVIDED FOR IN SDCL 11-6.

Whereas, Chapter 11-6-14 of South Dakota Codified Law has empowered the Planning Commission and City Council of Brandon to prepare a Comprehensive Plan for the development of the City and the surrounding area; and

Whereas, the Brandon Planning Commission has developed a Comprehensive Plan for the years 2007 - 2027, has held the required Public Hearing, and has made a recommendation for adoption of the Plan to the City Council; and

Whereas, the Brandon City Council has received the recommendation of the Planning Commission and has held the required Public Hearing; and

Whereas, the adoption of the Comprehensive Plan would enhance the responsible development of Brandon and the surrounding area.

Now therefore, be it resolved by Brandon City Council, that the Comprehensive Plan for the City of Brandon for the years 2007 through 2027 be hereby adopted and effective upon 20 days after publication of this resolution.

Adopted this _____ day of _____, 2007.

_____
Signed: Larry Beesley
Mayor, City of Brandon

ATTEST:

_____
Dennis Olson
City Administrator, City of Brandon

Publication Date: _____

Effective Date: _____

I. INTRODUCTION

A. PURPOSE, AUTHORIZATION AND ADOPTION

1. PURPOSE OF THE COMPREHENSIVE PLAN

There are three primary purposes of this document:

(1) To address the planning requirements of state law while also providing a sound and logical basis for city growth management strategies; and

(2) To provide some predictability about the potential land uses and timing of development so that both public and private sectors can make informed decisions in the area of real estate and capital investments.

(3) To provide the Planning Commission and City Council with policies for future planning decisions and the methods and justification to control land use through the zoning and subdivision ordinance, the capital improvements program, and other enforcement controls.

2. AUTHORIZATION UNDER STATE LAW

Under 11-6-14 of South Dakota Codified Laws, the planning commission of a municipality is directed to *"propose a plan for the physical development of the municipality...[to] include the general location, character, layout and extent of community centers and neighborhood units..."*

3. DEVELOPMENT AND ADOPTION

The Brandon City Council has adopted this document in accordance with state law. In developing this Comprehensive Plan, the Brandon Planning Commission has used background research, detailed inventories and assessments, and discussion sessions at Planning Commission and City Council meetings and public hearings. It is intended to guide the City in its implementation of zoning regulations, subdivision regulations, capital improvements plans and other related policies.

4. AREA OF PLANNING JURISDICTION

The City of Brandon shall, under South Dakota statutes, have the authority to control development within the corporate limits of Brandon.

B. COMMUNITY INPUT

As a part of the comprehensive plan process, the Brandon Planning and Zoning Commission requested community input on a variety of topics over several comprehensive planning meetings. The community input serves as one source of baseline information to help form the comprehensive plan goals, policies and objectives. A list of community strengths and weaknesses was formulated from these meetings.

<u>Strengths</u>

1. The school system is of good quality.
2. The close proximity to Sioux Falls has allowed major residential and modest industrial growth to occur.
3. The Interstate Highway system is an asset for growth - especially I-90.
4. The Sioux Falls Regional Airport is an asset for Brandon and entire region.
5. The Burlington Northern Santa Fe Railroad is an asset for industrial growth.
6. A strong water and sewer capacity is capable of handling growth well into the future.
7. Developers have been very competent and provided a good mix of quality and affordable single-family housing.
8. The community has enjoyed residential growth and maintained a small town atmosphere. However,

continued growth is welcomed.

9. Citizens have an easy time commuting to work.
10. The business community cooperates with each other.
11. Workable and active chamber.
12. The industrial and manufacturing base of the community is fairly diverse and clean.
13. The recreation system and facilities are of good quality.
14. The city government is progressive and efficient.
15. The region has a cooperative attitude.

Weaknesses

1. Physical constraints for growth - Big Sioux River and Split Rock Creek.
2. Losing out to retail and commercial areas because of Sioux Falls.
3. Corson as an existing subdivision and the conflict with existing and potential industrial development.
4. Very few small retailer establishments.
5. Lack of a typical Main Street - no place to focus retail and commercial business.
6. No low to moderate income housing which could create a labor shortage.
7. Truck traffic on State Highway 11 and Madison Street going east of town - truckers are avoiding scales.
8. Many pedestrian and car/truck traffic conflicts - especially on State Highway 11 and 264.

II. DEMOGRAPHIC DATA

A. DEMOGRAPHIC CONDITIONS

The population of Brandon steadily increased from 1980 to 2000. Between 1990 and 2000, the population increased by 60.59%. The population growth is the result of natural increase and net in-migration. There is a natural increase when the number of births exceeds the number of deaths. A net in-migration occurs when the number of people moving into the community is larger than the number leaving.

As can be seen in Table 2, the median household income (1999 dollars) is higher than the Minnehaha County and State of South Dakota average. The median household income has a correlation to the purchasing power of a household.

The City of Brandon has one of the lowest median ages in the state. Brandon's recent growth is attributable to many young families moving to town over the past 20 years. However, the elderly population (65 and over) did increase by 2% between 1990 and 2000. This indicates as does Table 3 that the population is diversifying and will gradually become older.

Table 1. Population History *(Source: U.S. Census Bureau)*

	Population	% Increase/Decrease
1980	2,589	
1990	3,545	+ 36.92%
2000	5,693	+ 60.59%

Table 2. Current Demographic Statistics *(Source: U.S. Census Bureau)*

	Brandon	Minnehaha County	South Dakota
1990 Pop	3,545	123,809	696,004
2000 Pop	5,693	148,281	754,844
1990 – 2000 % Change	+ 60.59%	+ 19.76%	+ 8.45%
2000 Median Age	31.3	33.5	35.6
Median Household Income in 1999 (dollars)	$58,421	$42,566	$35,282

Table 3. Population by Age *(Source: U.S. Census Bureau)*

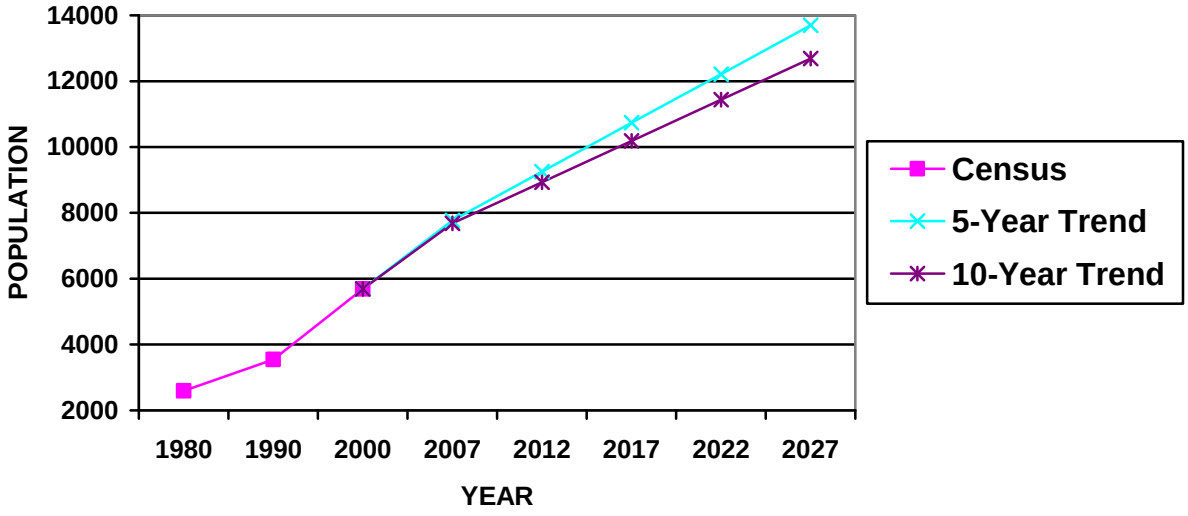
	Under 18	18-44	45-64	65 & Over	Total
1990	1,359	1,483	539	164	3,545
2000	1,962	2,361	981	389	5,693

B. POPULATION PROJECTIONS

Based upon current trends, a population projection through the study period indicates that the City of Brandon will have a population between 12,686 and 13,700 by the year 2027. The 5-year population trend concludes a population of 13,700, while the 10-year population trend concludes a population of 12,686. For purposes of land-use planning, the upper end of the population trend was utilized to ensure adequate land was reserved and planned for future development.

Table 4. Population Projections City of Brandon

	1980	1990	2000	**2007**	**2012**	**2017**	**2022**	**2027**
5-Year Trend	2,589	3,545	5,693	**7,768**	**9,251**	**10,734**	**12,217**	**13,700**
10-Year Trend	2,589	3,545	5,693	**7,676**	**8,929**	**10,181**	**11,434**	**12,686**



III. ENVIRONMENTAL CONSTRAINTS

A. PHYSICAL GEOGRAPHY

Brandon is located in southeastern South Dakota. The City is mostly situated between the Big Sioux River and Split Rock Creek. The landscape is primarily flat with some steep slopes near the rivers. The elevation ranges from 1,400 feet in the eastern section of the City to 1,300 feet along the rivers.

B. FLOOD HAZARDS

The City of Brandon has three major flood hazards within its area:

1. The Big Sioux River – within western boundary.
2. Split Rock Creek - within eastern Brandon.
3. Beaver Creek - south and east of Brandon.

The Federal Emergency Management Agency (FEMA) has classified a significant area adjacent to the rivers as having special flood hazard areas. All three rivers converge south of Brandon. (See **Map 1**)

C. DRAINAGE AND WETLANDS

Several small wetlands and potholes are found in the eastern sections of the City's growth areas, with the large majority being temporary in nature. Wetlands and water bodies are designated from base maps developed through the National Wetlands Inventory and other data sources. These natural resources provide a number of functions which are important to the health and welfare of the community. They provide storage for storm water, help to control flooding, provide wildlife habitat, improve water quality, and they provide recreational opportunities. (See **Map 1**)

Drainage in Brandon primarily occurs naturally. All developments either drain down street gutters or are directed by concrete drainage ways to major drainage points.

D. SOILS

While the soils in the Brandon planning area are excellent for agricultural purposes, their engineering properties present some limitations for urban development. Soil types found in many areas have severe limitations for various aspects of development including roads, streets, and dwellings with basements. These limitations are largely due to the following characteristics:

1. high clay and high water table
2. hydric soil
3. high flooding potential
4. shrink-swell
5. shallow depth to rock
6. gravel and sand pits
7. steep slopes

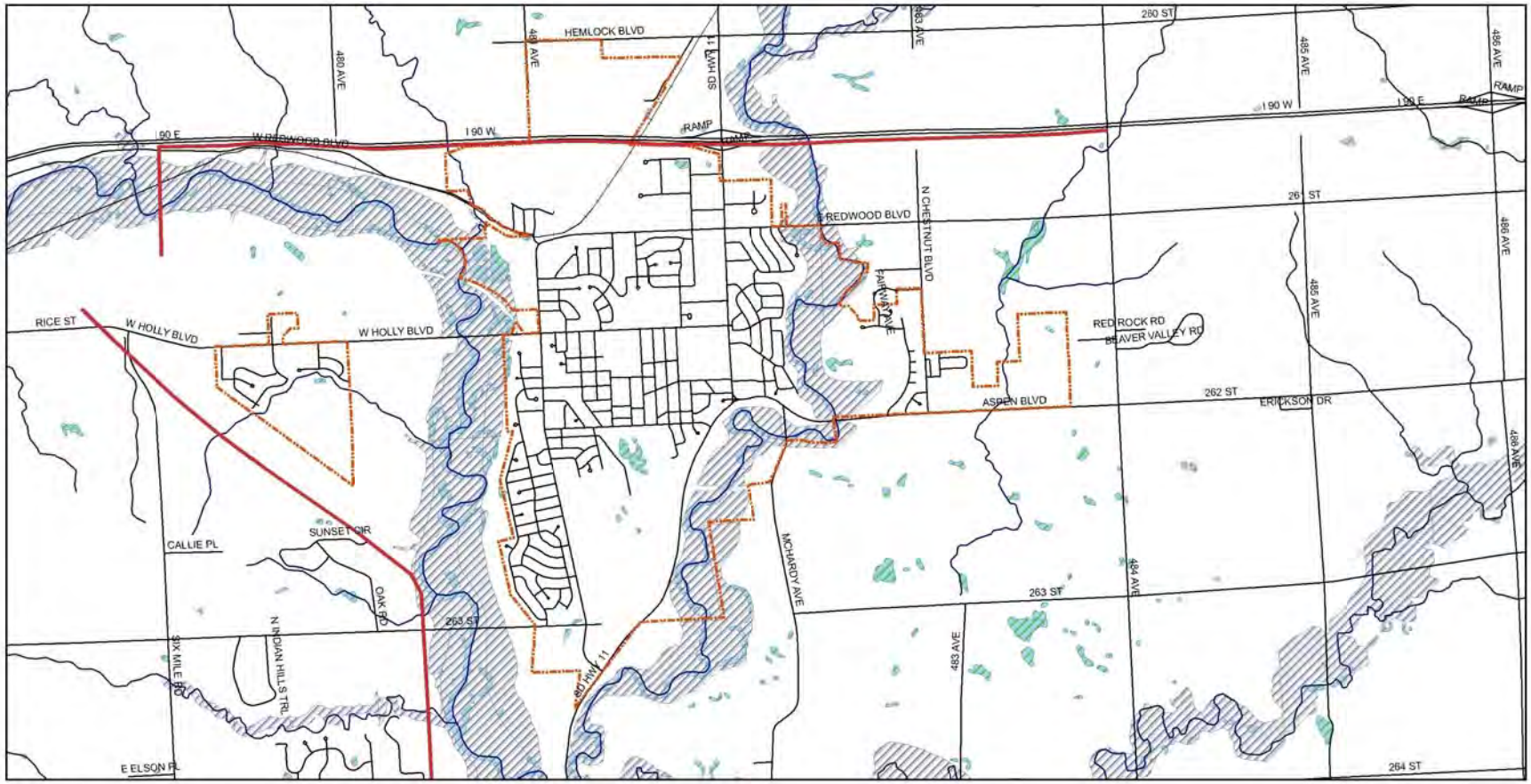
While these limitations do not rule out development, they do require compensating construction techniques and soil modification. The severe soil development limitations of the Brandon area are shown on **Map 2**.

E. ADDITIONAL ENVIRONMENTAL CONSTRAINTS

The following Xcel main electrical power lines are indicated on **Map 1**.

*running along south side of I-90

*running diagonally through western growth area



Legend

- 100 - Year Flood Plain
- Wetlands
- Powerlines
- Roads
- Rail
- City Limits

Map 1

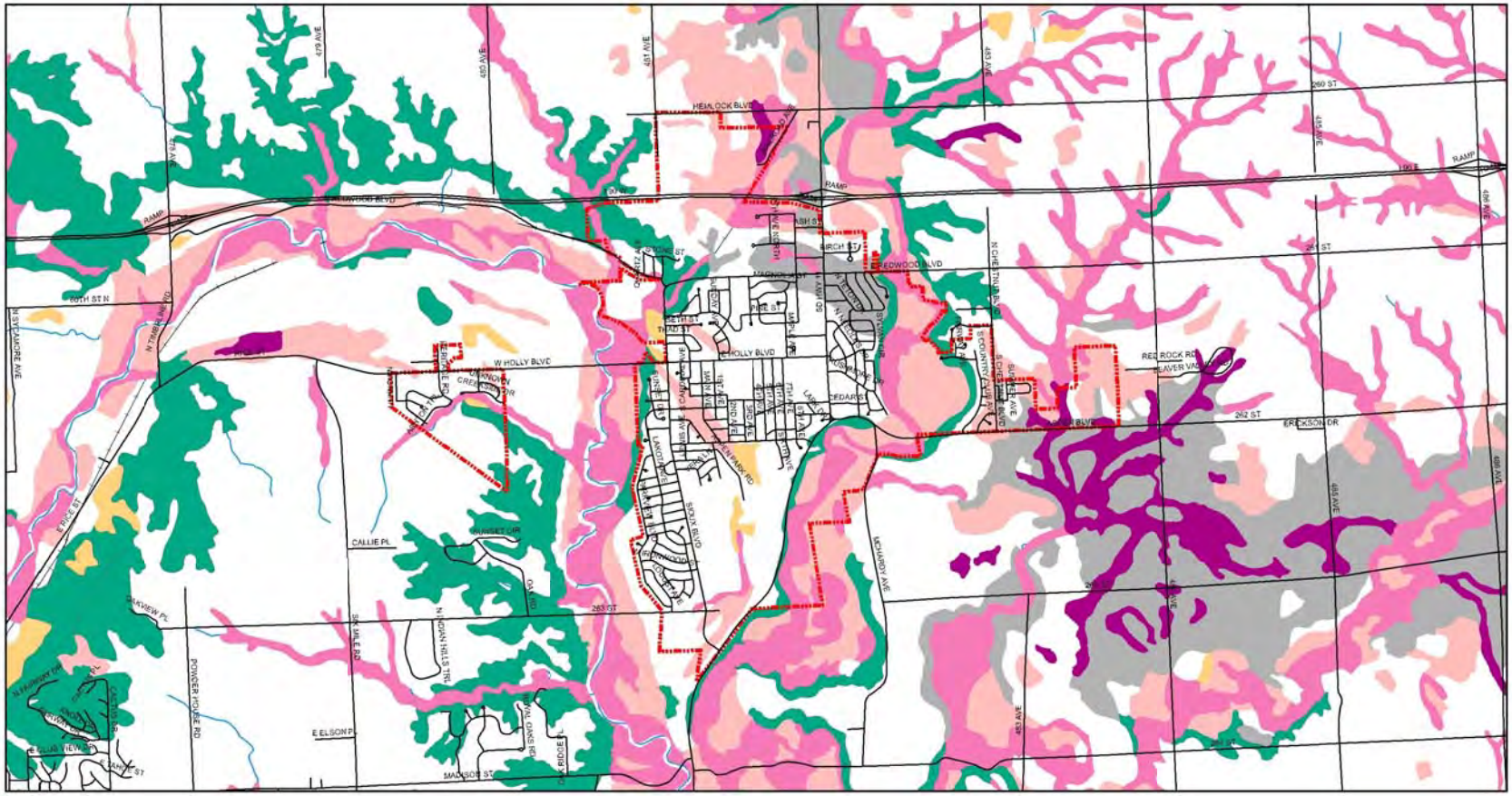
ENVIRONMENTAL CONSTRAINTS

City of Brandon

0 0.15 0.3 0.6 Miles

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.

This map was compiled by South Eastern Council of Governments



Legend

- Gravel/Sand Pits
- High Clay & High Water Table
- High Flooding Potential
- Hydric
- Shallow Depth To Rock
- Shrink Swell
- Steep Slope
- Creeks, Rivers & Lakes
- Roads
- Rail
- City Limits

Map 2

SOIL CONSTRAINTS

City of Brandon

0 0.2 0.4 0.8 Miles

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This map was compiled by South Eastern Council of Governments

IV. CURRENT LAND USE PATTERNS AND CONSUMPTION PROJECTIONS

A. EVALUATION OF URBAN LAND USE IN BRANDON

To simplify preparation of this plan, land uses have been grouped into six categories for Brandon:

(1) Industrial includes light manufacturing, warehouses and other similar uses.

(2) Commercial includes retail businesses, offices, etc.

(3) Single-Family Residential includes single-family, residential, duplexes, and manufactured housing.

(4) Multi-Family Residential includes all apartments.

(5) Institutional & Governmental includes schools, churches, government offices and similar uses.

(6) Park & Recreation includes parks and athletic fields. Also included are areas that should be protected from development to facilitate movement of flood water and runoff. Some types of development may be appropriate for such areas, as long as the development does not dramatically increase the incidence or severity of flood or drainage problems.

A physical land use inventory was prepared by SECOG in May of 2007. A map of **current land uses** in Brandon and the planning area are included on **Map 3**.

B. CURRENT LAND USE CONSUMPTION

Land Use	Acres Consumed
Single Family	**810 acres**
Multi Family	**36 acres**
Commercial	**90 acres**
Institutional	**231 acres**
Vacant	**811 acres**
Industrial	**156 acres**
Park and Recreation	**330 acres**

C. FUTURE LAND USE ESTIMATES

Households and a projected demand of certain land use categories are listed in the tables below.

City of Brandon

Household Projections

	Population	Persons per Household *(assuming number remains constant)*	Households
1980	2,589	3.40	780 (actual)
1990	3,545	3.16	1,120 (actual)
2000	5,693	2.96	1,909 (actual)
		[redacted]	
2007	7,768	2.96	2,624 (projected)
2012	9,251	2.96	3,125 (projected)
2017	10,734	2.96	3,626 (projected)
2022	12,217	2.96	4,127 (projected)
2027	13,700	2.96	4,628 (projected)

	Households Added 2007 to 2027
New Households	2,719

Land Use Consumption Needs – Housing

Single-family Residential	3 units per acre (low density) x 2.96 persons per household (pph) = 8.88 persons per acre (ppa) *	8.88 ppa x 2,643 acres = 23,470 additional people
Multi-family Residential	3 units per acre (low density) x 2.96 pph = 8.88 ppa **	8.88 ppa x 114 acres = 1,012 additional people

* Projections based upon low density single-family development
** Projections based upon low density multi-family development

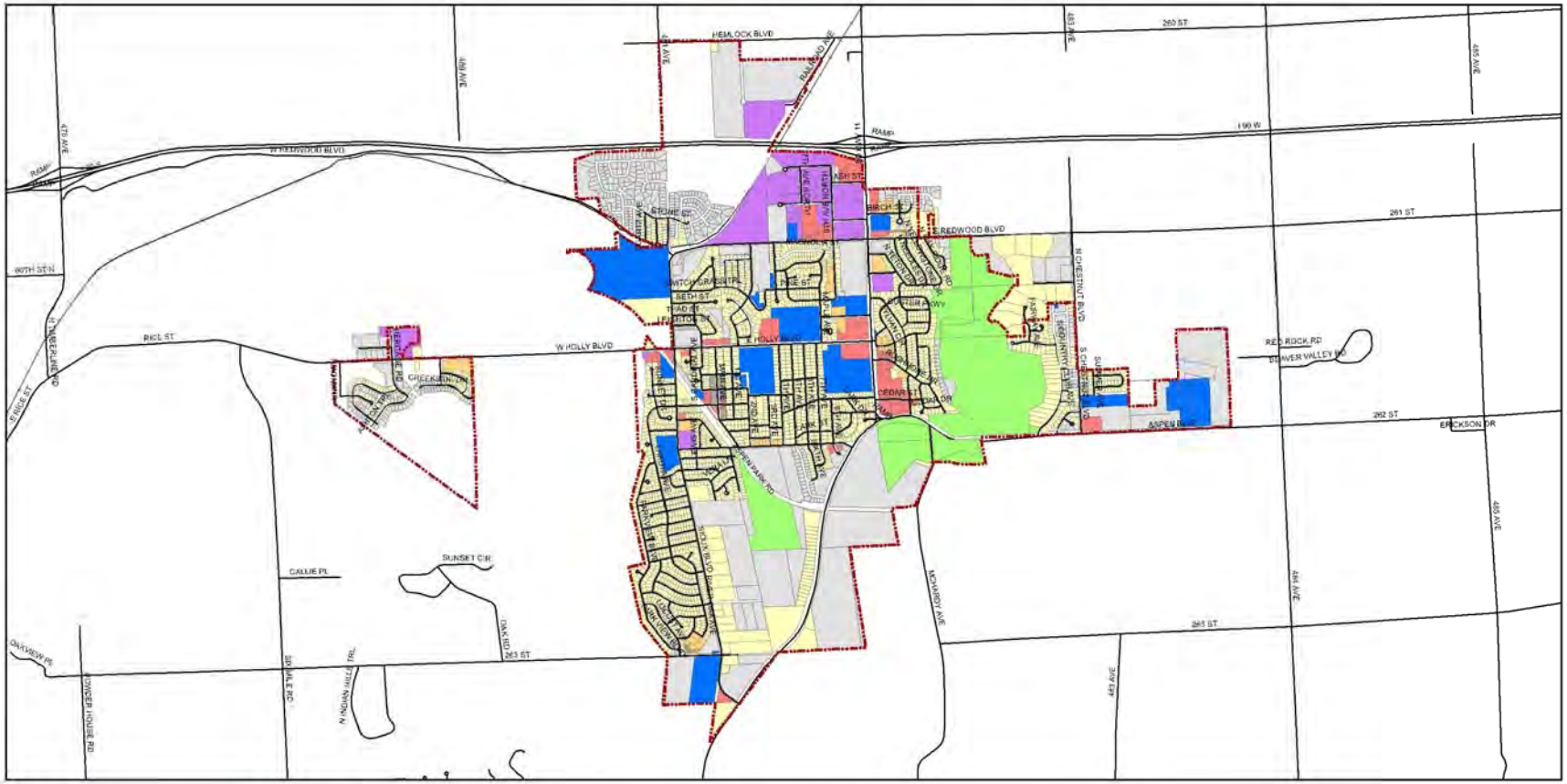
Based upon the above referenced analysis, the City of Brandon will be able to provide adequate housing through the year 2027.

Future Land Use Available

Land Use	Available Acres
Single Family	2643 acres
Multi Family	114 acres
Commercial	265 acres
Industrial	690 acres
Office/Institutional	248 acres
Park/Recreational/Greenway	1407 acres

A review of the population projections and land use consumption needs should be reviewed every five (5) years to ensure enough land is available for future land use needs.

Map 4 illustrates the future land uses. Future land uses were determined by the Brandon Planning Commission and SECOG, based on topographic features, compatibility of future and current land uses and existing infrastructure.



Legend

- Residential Single Family
- Residential Multiple Family
- Commercial
- Institutional
- Industrial
- Park/Recreation
- Vacant
- City Limits
- Rail
- Roads

Map 3

CURRENT LAND USE

City of Brandon

0 0.15 0.3 0.6 Miles

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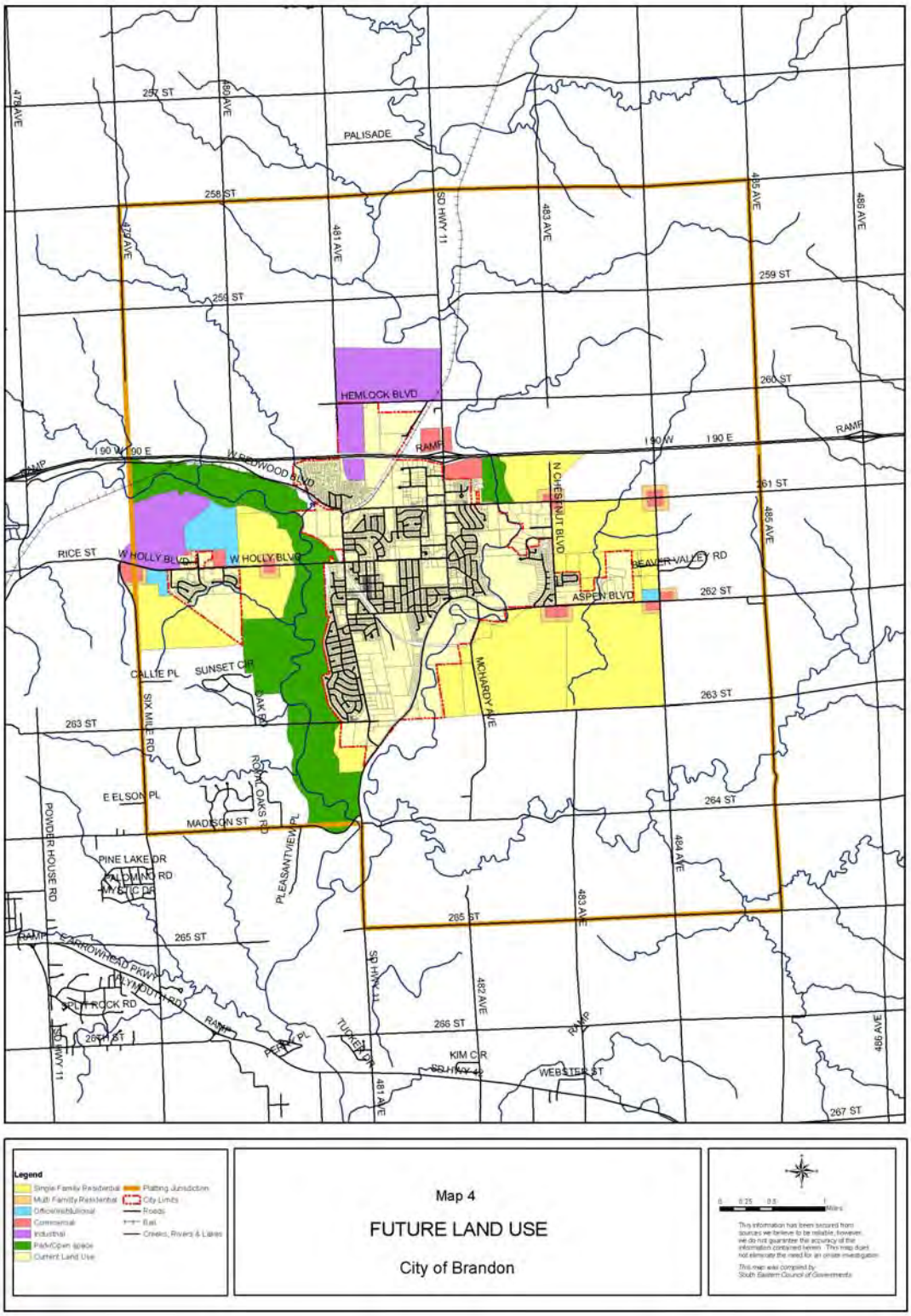
This map was compiled by South Eastern Council of Governments


Legend
Single Family Residential
Multi Family Residential
Office/Institutional
Commercial
Industrial
Park/Open space
Current Land Use
Platting Jurisdiction
City Limits
Roads
Rail
Creeks, Rivers & Lakes
Map 4
FUTURE LAND USE
City of Brandon
This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.
This map was compiled by:
South Eastern Council of Governments
PALISADE
HEMLOCK BLVD
W REDWOOD BLVD
W HOLLY BLVD
RICE ST
N CHESTNUT BLVD
BEAVER VALLEY RD
ASPEN BLVD
MCHARDY AVE
SIX MILE RD
CALLIE PL
SUNSET CIR
OAK RD
ROYAL OAKS RD
PLEASANTVIEW PL
E ELSON PL
MADISON ST
POWDER HOUSE RD
PINE LAKE DR
WALDING RD
ARROWHEAD PKWY
PLYMOUTH RD
BLUFF ROCK RD
TUCKER DR
KIM CIR
WEBSTER ST
SD HWY 11
RAMP
190 W
190 E
257 ST
258 ST
259 ST
260 ST
261 ST
262 ST
263 ST
264 ST
265 ST
266 ST
267 ST
477 AVE
479 AVE
481 AVE
482 AVE
483 AVE
484 AVE
485 AVE
486 AVE

V. INFRASTRUCTURE ASSESSMENT

A. TRANSPORTATION

Brandon currently has seven arterial roads within the community:

Interstate 90 is a major arterial and has become an important business and commuter highway. **Constraints:** As Brandon continues to grow, additional exits may be necessary to access I-90.

SD Highway 11 is a major arterial that moves traffic through town with only a small amount of obstruction. This road was recently improved and is in excellent condition. **Constraints:** Access points currently in place are limited and should remain as such.

Holly Boulevard is a minor arterial that links the community to Sioux Falls and provides a route to the business district and schools. **Constraints:** Unfortunately, the road has a dead end in the middle of town and limits connectivity of Brandon's road system. Future traffic will only increase from Sioux Falls; thus, the road could become a bottleneck. The community should consider encouraging alternative traffic routes to relieve pressure from Holly Boulevard. The road should become a portion of an overall regional transportation study in conjunction with the City of Sioux Falls and the Metropolitan Planning Organization.

Sioux Boulevard is a minor arterial that provides an important link for residential developments and future growth areas to SD Highway 11 and Holly Boulevard. **Constraints:** Sioux Boulevard is a fairly short arterial segment and will not be improved beyond a three-lane urban section.

County Highway 264 is a minor arterial that provides a critical route for residents living across Split Rock Creek and links the community to the Valley Springs area. **Constraints:** The road needs improvements to separate pedestrian conflicts.

Chestnut Avenue is a minor north-south arterial on the City's eastern limits. **Constraints:** In the future, the road will become a minor arterial as development proceeds. Access to the road must be limited to maintain the free flow of traffic.

Park/Maple Street is a minor arterial on the City's southern edge. The road will become an important road once development proceeds through the area. The road also leads to the main entrance of the Big Sioux Recreation area. **Constraints:** The road crosses the Big Sioux River to the west and is gravel to Six-Mile Road and beyond. To create a continuous arterial link, the road must be built and/or paved from the Big Sioux River Bridge to Six-Mile Road and ideally to the new Regional Beltway slated near Powderhouse Road. Cooperation with Minnehaha County and the City of Sioux Falls will be essential to improve the road to an arterial status.

Brandon currently has two collector roads within the community:

Redwood Boulevard is a major collector on the City's north side providing a route to new residential neighborhoods. **Constraints:** The road should be improved east of the Split Rock Creek Bridge. In the future, Redwood has great potential to be an arterial route, linking the east and west sections of town. Access to Redwood Boulevard should be strictly limited to allow mobility and free flow of traffic in the future.

Aspen Boulevard is a major collector within the City's central section providing alternate connection between Sioux Boulevard and SD Highway 11. **Constraints:** The road has good mobility for a collector. The City should encourage future development to be oriented away from Aspen Boulevard due to a lack of another feasible major east-west road south of Aspen Boulevard. Work should be done to correct a drainage problem near the railroad tracks. Wide sidewalks/bike path should be allowed for appropriate separation of pedestrian and car/truck traffic.

Local Roads

Overall the local road system is in good condition. The orientation of the roads has led to some constraints. The use of cul-de-sacs and curvilinear residential roads has limited flow and the development of collector roads, especially in the east and north sections of the City.

Map 5 illustrates the major street plan.

B. WATER FACILITIES

The City of Brandon recently completed a new water treatment plant located adjacent to Aspen Park. The water capacity of the community will accommodate the projected 20 year growth.

Wells: The community wells are located in Aspen Park near the new Municipal Water Treatment Plant.

Water Towers: One water tower is located in Brandon. The water tower is located near the Brandon Valley High School.

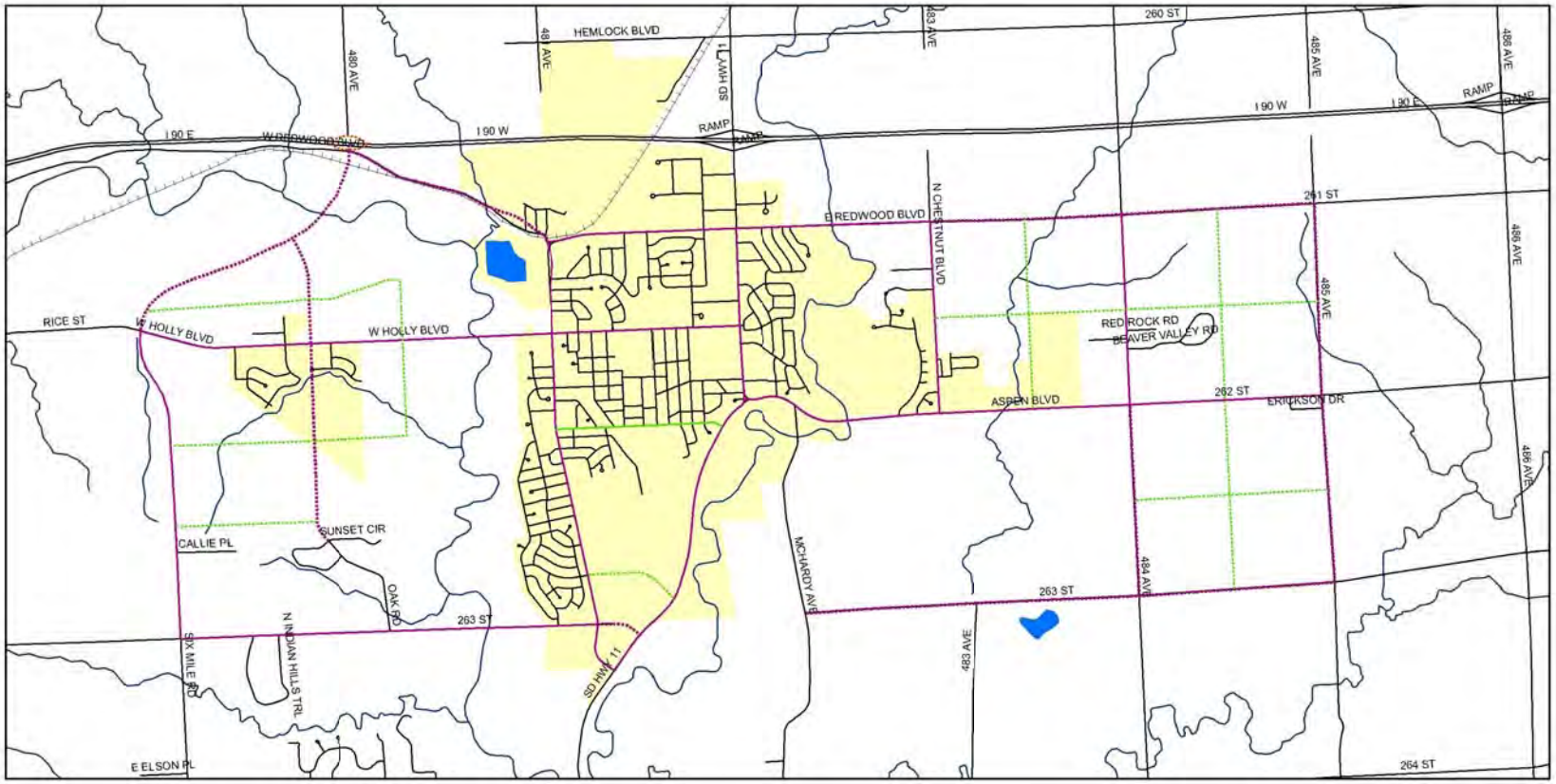
System Constraints: The water tower east of the Municipal Golf Course cannot serve additional growth. A water pumping station will need to be completed to create reliable service and growth potential to the east. Additional water towers may be needed to accommodate growth to the north, east, and west.

C. WASTEWATER FACILITIES

The wastewater system of Brandon has adequate capacity for the 20-year growth period. Treatment of the waste is pumped to the lagoons near the Big Sioux River where some effluent is treated with the lagoon system and some is pumped to the Sioux Falls Wastewater Treatment System west of Brandon.

Existing Facilities and Lift Stations: The existing lift stations are overall in good working order. However, new lift stations will be needed to open new growth areas and there is limited or no capacity to pump from one lift station to another lift station.

System Constraints: Careful study will be required to determine the best method to open new sewer basins. New main sewer trunk lines will likely be needed to open east and west growth areas. The north growth areas will also need a new trunk line leading to the wastewater facility.



Legend

- ARTERIAL
- FUTURE ARTERIAL
- COLLECTOR
- FUTURE COLLECTOR
- FUTURE RAMP
- Roads
- Rail
- Creeks, Rivers & Lakes
- City Limits

Map 5

MAJOR STREET PLAN

City of Brandon

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.

This map was compiled by South Eastern Council of Governments

VI. SCHOOL PLANS AND PROJECTIONS

A. SCHOOL FACILITIES

The Brandon Valley School District maintains four (4) facilities within the Brandon City Limits including two K-5 elementary buildings, a middle school (6-8) and a high school (9-12). The district also operates a K-5 elementary school facility located in Valley Springs. The district lies entirely within Minnehaha County. The district owns two sites for future building development, one on Six-Mile Road in the Sioux Falls future growth area, and one adjacent to Robert Bennis Elementary located along Park Street in southern Brandon. The Brandon Valley School District has planned for most of its growth to occur between Brandon and Sioux Falls.

VII. PARK AND OPEN SPACE INVENTORY AND NEEDS

A. INVENTORY

Name	Acres	Type	Comments
Pioneer Park	21 acres	Community	sledding hill, playground equipment, ball field, scenic overlook, nature area, picnic area, soccer fields, basketball court, restrooms
Aspen Park	50 acres	Community	8 softball fields, 1 baseball field, swimming pool, picnic area, tennis courts, modern restrooms, playground equipment
Municipal Golf Course	146 acres	Golf Course	18-hole course
Bike trail	NA	Linear	links Big Sioux Recreation area and Aspen Park
McHardy Park	81 acres	Community	sledding, picnic area, recreational ball field, playground equipment, restrooms, lookout tower
Big Sioux Recreation Area	410 acres	State	camping, hiking, canoeing, picnicking, bike trail, archery range, modern comfort stations, playground equipment, cross-country skiing, snowmobiling
Tallgrass Park	3 acres	Neighborhood	playground equipment, parking lot, restrooms
Stone Ridge	1 acre	Neighborhood	undeveloped
The Bluffs	1 acre	Neighborhood	undeveloped

B. FUTURE NEEDS

Neighborhood parks are generally between five and ten acres in size. The effective service area of neighborhood parks is one mile, depending on location, facilities, and accessibility. School/park sites also serve as neighborhood parks and include playground equipment in addition to play fields, parking lots, and multi use paved areas for court games.

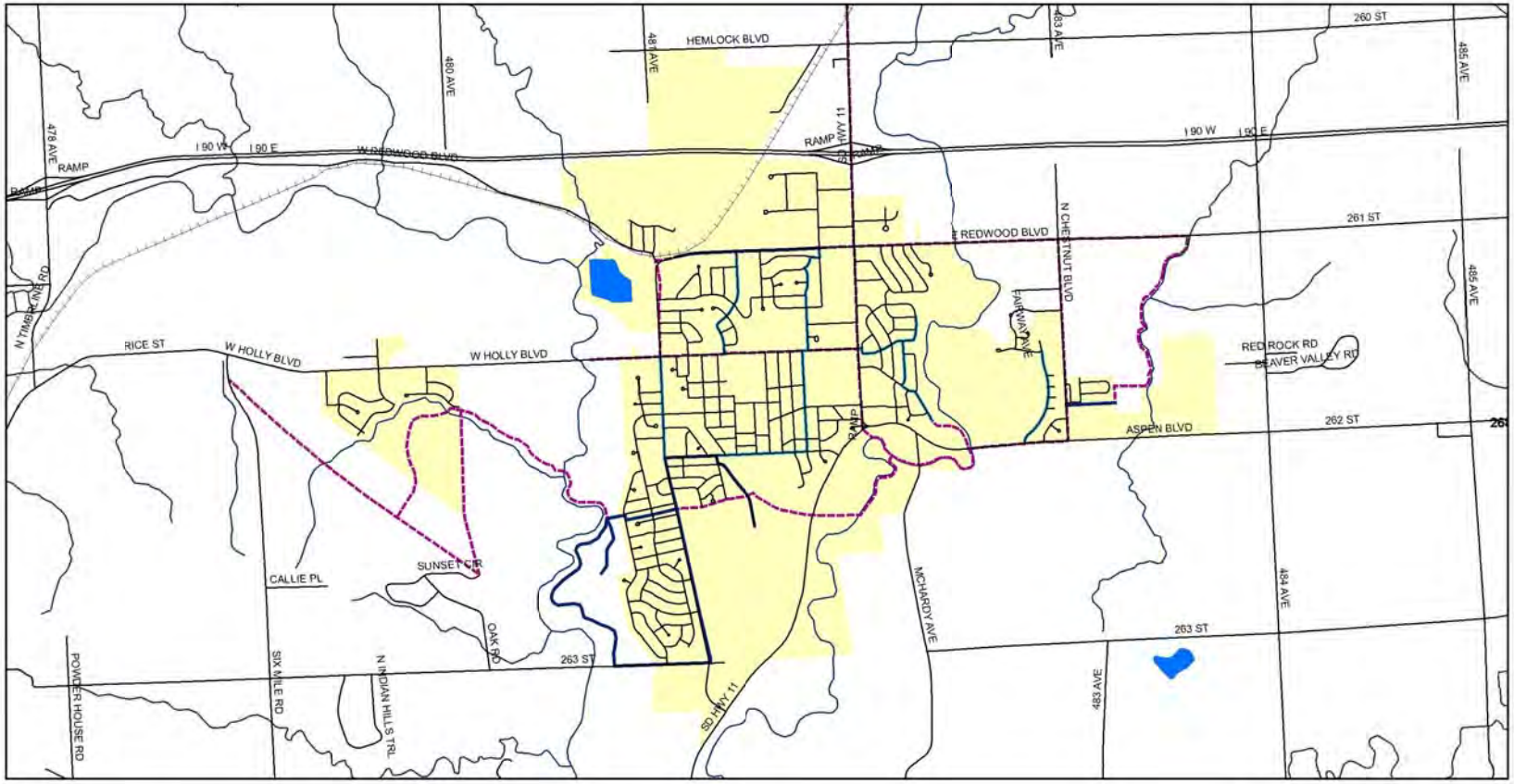
Community parks, because of their larger size, provide a much wider range of activities and facilities than neighborhood parks. The land area requirements generally range from 20 to 40 acres. Specialized facilities such as swimming pools, picnic areas, and athletic complexes can be accommodated in community parks. Community parks that should be provided include areas for passive uses, nature conservation, pools and aquatic centers, and athletic fields. Each of these four types of uses might include other uses such as neighborhood playground space, but generally larger parks will focus on one major type of activity.

Conservation and nature areas are specialized locations which preserve wildlife habitat, woodlands, and wetlands through open space development. Most commonly developed along the stream corridors and natural drainage ways are linear parts or greenways which provide a variety of recreational opportunities to adjacent neighborhoods. These activities easily accommodate the development of a bike trail system.

The parks and open spaces on the Future Land Use Map identify existing park facilities and proposed new facilities within the projected growth areas. A list of the new or expanded facilities is listed in the Capital Improvements Plan Summary on page 32. These facilities will bring nearly all residential development within the service area of both neighborhood and community parks. The specific improvements provided within each park facility should be tailored to meet the needs of the nearby population which it will primarily serve. Where feasible, proposed park sites are integrated with future elementary school sites to permit joint use of facilities. In addition, potential combinations of detention pond sites and neighborhood parks should be reviewed wherever feasible to allow more efficient land utilization and consolidation of maintenance costs.

If new parks are to be provided at a reasonable cost and in proper locations, it is essential that park land acquisition take place prior to residential development. Integration of park and school sites will likewise be feasible only if land acquisition occurs well ahead of residential development.

Expansion of the current bike trail system is proposed to continue. Future trail locations are planned along Holly and Redwood Boulevard, to the west of Brandon along the Big Sioux River and to the east of Brandon linking Aspen Park with McHardy Park. Additional designated bike routes are also proposed along major streets to provide better access to parks and the trail system. (See **Map 6**)



Legend

- Bike Route
- Current Bike Trail
- Future Bike Trail
- Roads
- Rail
- Creeks, Rivers & Lakes
- City Limits

Map 6

BIKE TRAILS

City of Brandon

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.

This map was compiled by South Eastern Council of Governments

VIII. GROWTH AREA ANALYSIS

The costs of extending water and sewer services are the primary considerations in designating future growth. However, other factors must also be considered, which includes capacity of the transportation system and environmental suitability. The following analysis is intended to provide the City of Brandon and Minnehaha County with a guide to land use decisions and direct implementation through subdivision and zoning regulations. **Map 7** illustrates all growth areas by the number indicated.

Growth Area Constraints

Area #1

1. Big Sioux and Split Rock Creek floodplains.
2. Existing development along Sioux Boulevard and SD Highway 11.
3. Sand and gravel pits.
4. Drainage between Sioux Boulevard and SD Highway 11.
5. Sewer and water are available to most of area.
6. Indian burial grounds.

Area #2

1. Water available in most of area with 2 - 15 inch water lines across river.
2. Limited area to develop beyond.
3. Need for I-90 interchange and associated arterial corridor/collectors - large cost.

Area #3

1. Need separate lift station for area.
2. A water tower is needed (Area #2 water tower will be satisfactory).
3. Significant amount of existing rural residential development.
4. Much of terrain is hilly with steep slopes.

Area #4

1. Water and sewer available.

Area #5

1. Water and sewer available.
2. Will need to upgrade existing lift station (lift station pumping to another lift station).
3. Transportation issues - Redwood Boulevard as arterial.
4. Water runs along south side of property.

Area #6

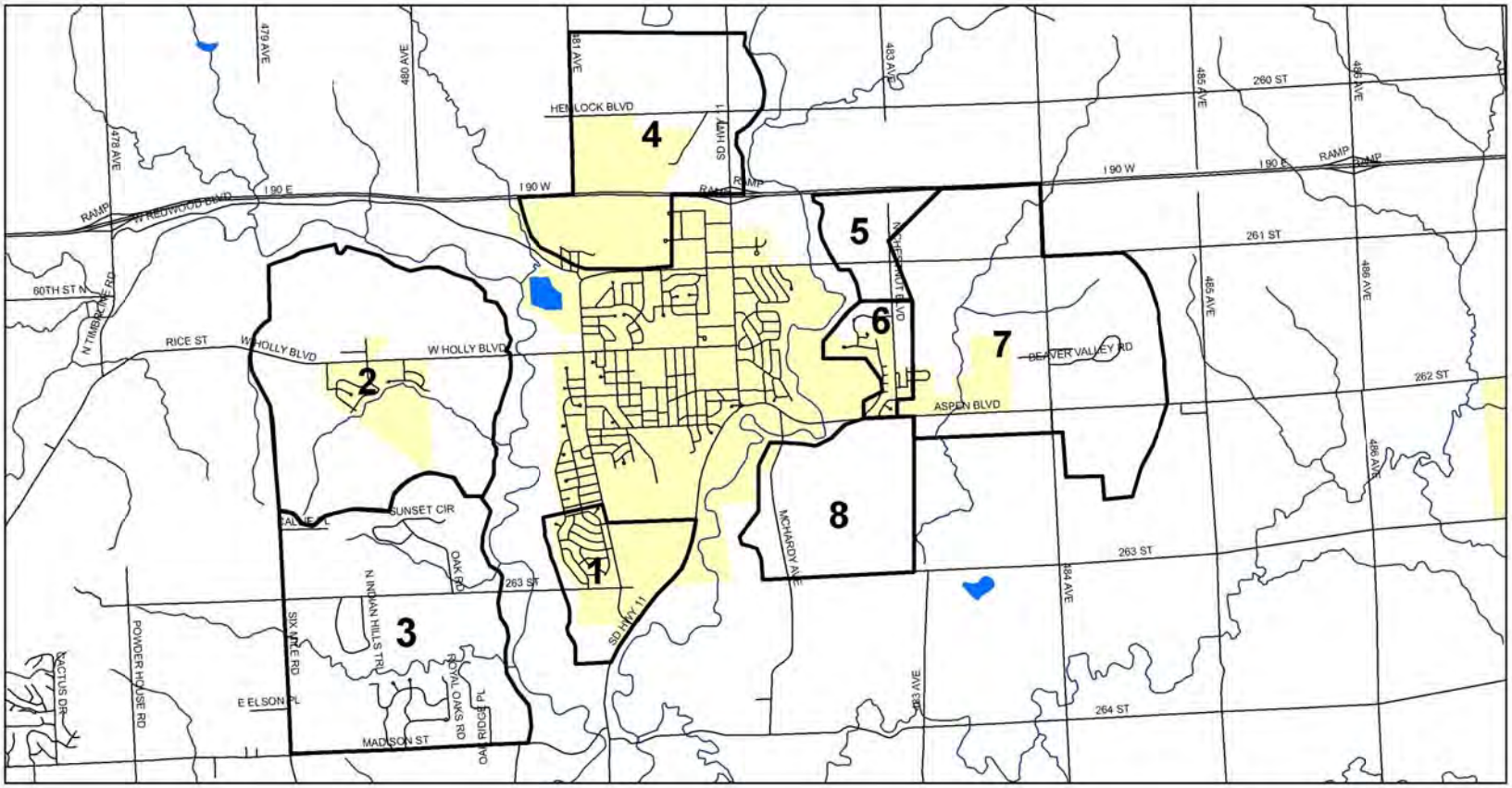
1. Water and sewer available.

Area #7

1. Need new lift station and force main *(See Stockwell Engineers Preliminary Study)*.
2. A new water tower and treatment plant will be needed beyond 20 year planning period.
3. Transportation issues – Chestnut and Redwood Boulevard and other arterial options.

Area #8

1. Need to upgrade lift station.
2. Water and sewer available.
3. Sewer will need to have force main upgrade.



Legend

- Growth Areas
- Rivers, Creeks & Lakes
- Roads
- Rail
- City Limits

Map 7

GROWTH AREAS

City of Brandon

This information has been secured from sources we believe to be reliable, however, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an onsite investigation.

This map was compiled by South Eastern Council of Governments

IX. PLANNING POLICY FRAMEWORK

A. GROWTH MANAGEMENT AND CAPITAL IMPROVEMENTS STRATEGY

The City of Brandon details within this plan the types, locations and phasing of land uses. Growth management provides for economical provision of City services by coordinating public facility improvements with private development. To create a focus for the plan, listed below are the following growth management goals, policies, and objectives. In addition, the required capital improvements to facilitate growth and redevelopment are included, such as: streets, water, sewer, drainage, fire, police, and recreation.

Goal 1. Encourage Development and Redevelopment Within Existing City Limits Area

Objective 1 - Allow development within existing sanitary sewer basins as detailed by future land use map

Policy 1 - Sewer Basin #1 is open for development and will be developed as indicated by future land use map; except, preserve the Indian burial grounds in the southern section and wetland areas in the central section of the area.

Policy 2 - Encourage all other existing sewer basins in the city to develop as indicated by the future land use map.

Policy 3 - Develop proper drainage as the existing area develops with a mix of open space and proper site planning.

Goal 2. Direct New Growth into Designated Future Growth Areas

Objective 1 - Allow development into Growth Area #2 with regard to the following policies

Policy 1 - Continue to expand sewer services to the area through an area assessment.

Policy 2 - Continue to expand water services to the area through an area assessment and eventually construct a water tower to provide water service to southwestern sections of area.

Objective 2 - Allow development into Growth Area #4 with regard to the following policies

Policy 1 - Continue to extend sewer lines for future growth.

Policy 2 - Continue to extend water lines for future growth.

Policy 3 - Maintain area as a future industrial and office park area.

Policy 4 - Develop a tree and landscaped area on both sides of Interstate 90 as a method to soften the area's look and create an attractive gateway to the city.

Policy 5 - Encourage annexation of Corson and surrounding area for water and sewer issues.

Objective 3 - Encourage development within Growth Area #6 as detailed by future land use map

Policy 1 - Construct drainage area for existing and future growth.

Objective 4 - Encourage development within Growth Area #7 with regard to the following policies and as detailed by future land use map

Policy 1 - Continue to extend or expand sewer services to the area through an area assessment.

Policy 2 - Continue to extend or expand water services to the area through an area assessment.

Policy 3 - Construct drainage area for future development.

Objective 5 – Carefully examine growth into Growth areas #3, #5, and #8 due to high water and sewer system constraints

Goal 3. Construct and upgrade the major street system to handle new growth

Objective 1 - Construct an arterial road system to provide optimum traffic mobility

Policy 1 - Develop Redwood Boulevard into an arterial road from SD Highway 11 to 484th Avenue.

Policy 2 - Continue to develop Chestnut Avenue into an arterial section road from County Highway 264 to Redwood Boulevard.

Policy 3 - Widen Rice Street/Holly Boulevard to a 4 or 5-lane urban section from Six-Mile Road to Sioux Boulevard in a phased project and strictly limit access through shared driveways and maintain 100 foot right-of-way.

Policy 4 - Add a stop light at Sioux and Split Rock Boulevard to control projected increase in traffic.

Policy 5 - Study the overall regional transportation needs of growth area #2 including Holly Boulevard and Park Street through the Metropolitan Planning Organization process. The study should include the identification of a new I-90 interchange and associated arterial links as indicated on the Major Street Plan, improvements to current arterial systems to handle projected future traffic volumes, and access management guidelines.

Policy 6 - Investigate options to increase traffic control devices, turning lanes and a deceleration lane on Holly Boulevard at the Bluffs and Eagle Creek Development.

Objective 2 - Complete projects to enhance the safety of the transportation system

Policy 1 - Develop sidewalks in all areas of town to create safe neighborhoods by requiring developers to construct or assessing landowners at the directive of the City.

Goal 4. Improve Community Services for all residents of Brandon

Objective 1 - Improve Public Services and Buildings

Policy 1 - Complete construction of a new city government center.

Policy 2 - Complete construction of a community recreation center.

Objective 2 - Improve Park and Recreation Opportunities for Citizens

Policy 1 - Construct a bike trail from McHardy Park to the Brandon Golf Course area with the trail leading under SD 264 at the bridge to provide safe community access to the city park system.

Policy 2 - Construct a bike path along Redwood Boulevard to Pioneer Park to provide an access to bike path system for people in north residential neighborhoods.

Policy 3 - Construct additional playground equipment and a soccer complex at McHardy Park.

Policy 4 - Designate city bike routes to help provide a safe place for bike riding (See **Map 6**).

Policy 5 - Construct an extension of the bike trail from Aspen Park to McHardy Park alongside the railroad track right-of-way.

Policy 6 - Expand Aspen Park and add baseball and softball fields.

Policy 7 - Add a park area and associated bike trail in Growth Area #2 for neighborhood open space and recreational opportunities.

Policy 8 - Construct the Sioux Falls/Brandon bike path located in the growth area while also providing an area for open space and recreational needs on the north side of the Big Sioux River.

Policy 9 - Designate open space to construct a neighborhood park in Area #6.

Policy 10 - Designate open space to construct a neighborhood park in Area #2.

Policy 11 - Designate open space to construct a neighborhood park in Area #7.

Goal 5. Preserve the Function and Character of the Rural Area

Objective 1 - Encourage agriculture to remain the dominant land use activity

Policy 1 - Only agricultural uses will be allowed in the City's agricultural zones.

Objective 2 - Discourage scattered residential, commercial, or industrial development

Policy 1 - Work with Minnehaha County to ensure all proposed development within Brandon's growth areas are annexed and serviced with municipal utilities.

Goal 6. Improve Local Government

Objective 1 – Improve Communication

Policy 1 - Increase communication with the Brandon Valley School District.

Policy 2 - Increase communication with the public by holding informal public meetings and coffees.

Policy 3 - Increase communication with the city staff.

Objective 2 – Ensure financial stability of the city

Policy 1 - Establish fire and ambulance districts.

Policy 2 - Develop land development fees.

Policy 3 - Establish relationships with financial institutions.

Policy 4 - Continue to promote commercial and industrial expansion.

Policy 5 - Pursue donations through a community fund.

Objective 3 – Improve city staff management

Policy 1 - Provide adequate personnel to meet the needs of the increased workload.

Policy 2 - Provide leadership for a smooth transition of new staff.

Objective 4 – Remain current with new technologies

X. PLANNING STRATEGY

The City of Brandon has committed to shape the future of the community, to enhance economic development, and maintain a high quality of life for all citizens of the community. The following goals, objectives, and policies will guide the Planning and Zoning Commission and City Council, and are the basis for enforcement of the zoning and subdivision ordinances.

Goal 1. Ensure the Health and Safety of Citizens

Objective 1 - Separate structures for health and safety

Policy 1 - Sideyard setbacks will comply with fire safety separation distances for residential structures and minimum requirements for commercial and industrial structures.

Policy 2 - Ensure buildings and structures do not encroach on residential building air space.

Objective 2 - Design lots and blocks to emphasize cost efficiency and community values

Policy 1 - Require the City's consulting engineer review the utility plans before a plat is approved.

Policy 2 - Review the lot and block designs based upon subdivision design standards.

Objective 3 - All streets need adequate visibility at intersections and driveways

Policy 1 - Ensure adequate visibility at intersections and driveways by ensuring that structures do not obstruct the view of intersecting traffic.

Objective 4 - Design local streets to emphasize land access and safety

Policy 1 - Design residential streets with 66 feet right-of-ways and no more than 36 feet pavement width.

Objective 5 - Design major streets to emphasize mobility, safety, and adequate off-street parking

Policy 1 - Implement access management guidelines as a part of the subdivision ordinance.

Policy 2 - Maintain a policy of safe speed limits for all collectors and arterial roads. Limit the number of stop signs or stop lights to maintain an even traffic flow.

Policy 3 - Ensure single-family developments and other low intensity uses have driveway access off local or collector streets and not off major streets. Arterial streets should have limited access.

Policy 4 - Require development of a consistent collector street system as indicated by the Major Street Plan.

Policy 5 - Implement SD Highway 11/Splitrock Boulevard Access Plan as prepared by the South Dakota Department of Transportation and the City of Brandon.

Goal 2. Protect Natural Resources

Objective 1 - Retain runoff with open natural drainage systems

Policy 1 - Utilize open space such as parks or backyards to help naturally drain new developments.

Policy 2 - Complete drainage basin plans ahead of development.

Objective 2 - Create greenways and linear open spaces within floodplain areas

Policy 1 - Maintain the Big Sioux River and Split Rock Creek floodplains for open space, recreation areas, and bike path opportunities.

Policy 2 - Do not allow development to encroach upon the floodplains.

Objective 3 - Design around significant wetlands

Policy 1 - Preserve wetland areas as a part of drainage systems and park system where possible.

Objective 4 - Do not allow development on steep slopes

Policy 1 - Do not allow development to encroach into steep slope areas of Big Sioux River and Split Rock Creek areas.

Objective 5 - Limit development in areas with poor soils and high water table

Policy 1 - Maintain an open space area around the Brandon well fields in Aspen Park.

Goal 3. Enhance the Visual Quality of the Community

Objective 1 - Separate heavy industrial and residential uses

Policy 1 - Create a buffer zone for transitional areas between industrial, commercial, and residential areas.

Policy 2 - Create an office park between the industrial park and Redwood Boulevard.

Policy 3 - Create buffer zones for the proposed commercial zones.

Objective 2 - Soften the look of all uses to enhance the community's image as an attractive place

Policy 1 - Institute appropriate landscape regulations for all uses.

Policy 2 - Utilize the following gateways to Brandon as a way to create community identity through community welcome signage, landscape beautification, and design criteria.

* I-90 and Split Rock Boulevard
* Sioux Boulevard and Split Rock Boulevard
* Holly Boulevard and Six-Mile Road

Objective 3 - Create a transition from commercial to residential areas

Policy 1 - Require the use of berms, fences, and additional setbacks as measures to create an appropriate transition to single-family uses.

Objective 4 - Encourage the appropriate siting and concentration of uses and structures

Policy 1 - Create a manufactured housing zoning district regulation.

Policy 2 - Add telecommunication tower regulations to ensure their appropriate placement and mitigate negative visual features.

Policy 3 - Allow appropriate fences that do not obscure peoples' view.

Policy 4 - Allow signs of an appropriate size relative to the lot size and limit their numbers.

Policy 5 - Allow accessory buildings in a rear yard location with appropriate setbacks.

XI. PLAN IMPLEMENTATION

The best possible way to implement a comprehensive plan is to utilize all of the administrative tools available in order to influence development in a positive manner. There are many tools which can be utilized, including: zoning regulations, subdivision regulations, policy plans, capital improvements plans, annexation studies, and well-rounded community involvement.

Local Governing and Advisory Boards. The key players in the implementation of a Comprehensive Plan are the Planning and Zoning Commission and the City Council. It is the duty of the governing body of Brandon to encourage progress by utilizing all of the tools available to ensure orderly growth and development can take place. With public input, the Planning and Zoning Commission and the City Council can create a balance between industry, commerce, and housing, allowing utilization of the resources available to facilitate civic improvement.

Local Regulatory Tools. Perhaps the most widely utilized administrative tools are the Zoning Ordinance and Subdivision Regulations. It is essential to revise either or both of these documents when they conflict with the Comprehensive Plan. It is especially important to create a cooperative agreement between Minnehaha County and the City of Brandon to insure the Brandon urban growth area is developed according to the Comprehensive Plan recommendations.

Annexation. If the orderly growth of Brandon is to continue over the planning period, it is essential the City continue an active annexation program. The boundaries for providing municipal services should generally coincide with the corporate limits. Areas designated by the land use plan as future growth areas of the City should be annexed in advance of major development as should existing rural subdivisions which lie adjacent to the City. This policy will assure that sufficient development land to accommodate the future growth of the urban areas is maintained.

Capital Improvements Planning. The purpose of capital improvements planning is to provide local government officials with a guide for budgeting for major improvements which will benefit the community. The City must review current infrastructure and identify and address any deficiencies prior to consideration of future development. It is the intention of the City to upgrade a portion of existing utilities and transportation routes on an annual basis. Information within the Comprehensive Plan will be utilized in constructing the Brandon capital improvement plan. On the following page is a list of major capital improvements over the 20-year study period.

Capital Improvements Summary of Needs 2007 - 2027

General

- Sidewalks along Splitrock Boulevard
- Redwood drainage repair

Police

- Garage for police behind City Hall

Water

- Construction in growth area #7 to include water booster station and water mains
- Construction of water tower to service area #2 (south of water pressure line)
- Extend water line from well #3 to water treatment plant
- Dedicated trunk line to growth area #4
- Controls from well #3 to water treatment plant
- Increase line size from the water treatment plant to 5th and Aspen
- Increase line size from the water treatment plant to Richland Park Addition

Street

- Reconstruction of Holly from Sioux Boulevard to Splitrock Boulevard and should be included in the transportation study in growth area #2
- Improve drainage at Main and Aspen
- Reconstruction of Redwood Boulevard and Chestnut Avenue and should be included in the transportation study in growth area #7
- Construction of arterial roads in growth area #2
- Construction of arterial roads in growth area #7
- Re-pave Rushmore Drive from Splitrock Boulevard to Teton Drive
- Overlay parts of Aspen Boulevard
- Construction of a 2-lane arterial from I-90 interchange to Redwood Boulevard
- I-90 Interchange, bridge and arterial extension to Six Mile Road
- Expand the turn lanes/deceleration lanes at Sandstone Avenue to Heritage Road along Holly Boulevard
- Add a stop light at the intersection of Redwood Boulevard and Splitrock Boulevard

Golf Course

- Chipping green and bunker on practice range

Parks

- Expansion of Aspen Park (McHardy Park) with additional softball and baseball fields
- Construction of additional soccer fields and playground equipment in McHardy Park
- Add lights on diamonds C & D in Aspen Park
- Bike trail from Pioneer Park to McHardy Park
- New park construction in growth area #2 south of Holly Boulevard
- Reconstruction of Aspen Park Avenue
- Big Sioux River bike trail Phase 2

- Bike trail from new area #2 park to Big Sioux Recreation area
- Pool blanket to preserve heat
- Park development around the Sweetman property on Aspen Boulevard
- Construction of a pool on the east side

APPENDIX 1
Land Use Location and Design Criteria

Residential

Low density (3 to 6 units/acre)

*Access to local street system-avoid direct access to arterial streets
*Convenient to neighborhood school, park, and commercial services
*Avoid environmentally sensitive areas such as wetlands and drainage ways

Medium density (6 to 16 units/acre)

*Access to major street system
*Well designed transition to adjacent land uses
*Provision of useable open space based on project size
*Transition between low density neighborhood and major streets
*Adjacent to neighborhood commercial center

High density (16 to 40 units/acre)

*Adjacent to principal arterials near major commercial, institutional, or employment centers
*Well designed transition to adjacent land use
*Provision of viable open space based on project size

Commercial

Highway oriented and regional centers

*Adjacent to major streets and regional highways
*Controlled access to arterial streets
*Quality architecture and well designed transition to adjacent uses

Community centers

*Intersection of arterial streets and along transit routes
*Mixed use development including office, institutional, or multifamily residences
*Well designed transition to adjacent uses

Neighborhood retail, office, and convenience services

*Convenient vehicular and pedestrian access to residential areas
*Adjacent to major street intersections
*Design compatible with surrounding uses
*Well designed transition to adjacent uses
*Located within residential, employment, or institutional centers

Downtown area

*Pedestrian orientation
*Quality urban design standards
*Mixed uses including office, retail, institutional, cultural and entertainment
*Orientation to green way where feasible
*Consolidate off-street parking areas
*Residential uses within walking distance of the Central Business District (CBD)

Industrial

General light industrial

*Regional highway access located close to major arterial streets
*Rail access for industrial uses requiring it
*Buffered from residential and other adjacent land uses

*Industrial park setting with building design and landscape amenities
*Include office, warehousing and limited retail uses

Limited heavy industrial

*Access to major streets
*Well designed buffer to adjacent land uses
*Minimize environmental impacts on surrounding properties

Mixed Use

Institutional, office, and other mixed use development

*Convenient to intended market area
*Vehicular access to major streets
*Minimization of traffic impact on adjacent uses
*Orderly expansion of institutional uses near residential areas
*Design compatibility with adjacent uses
*Include retail, multifamily and business-technology land uses

Appendix F
Potential Treatment Sites

Appendix G
Rose Wind Charts

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com

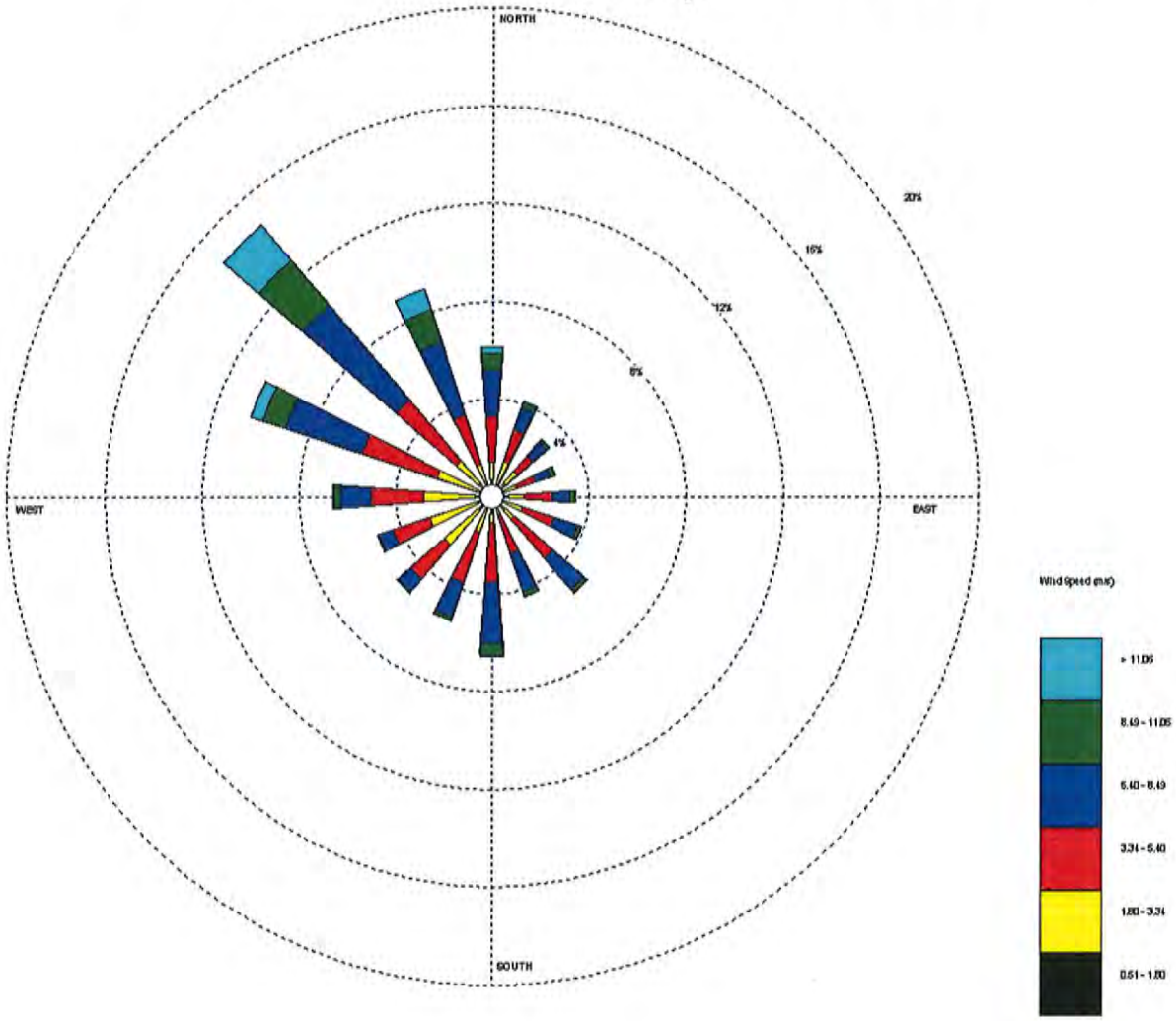
South Dakota State University

Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: January :: Go ::
(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
January



South Dakota State University

Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: February :: Go ::
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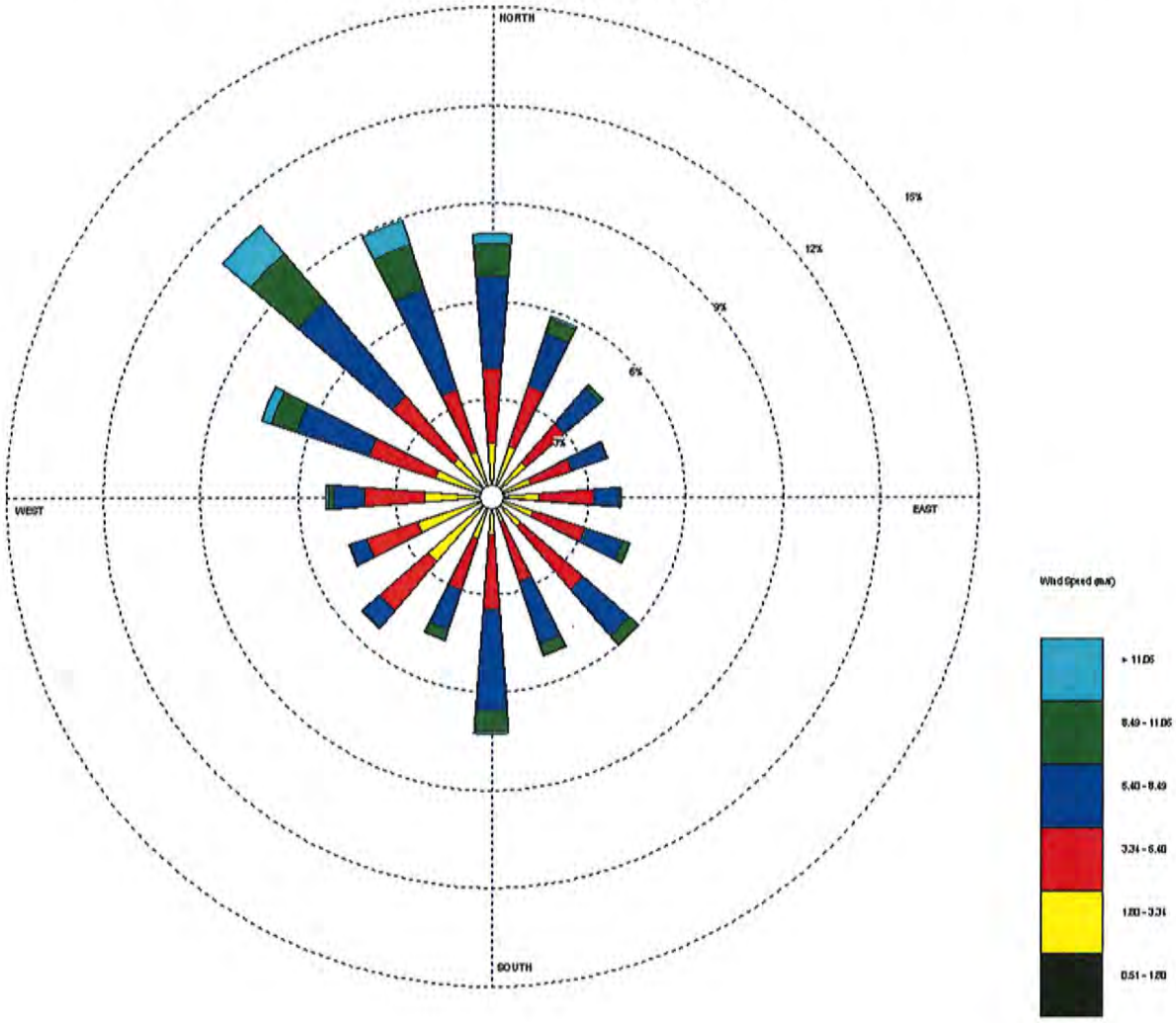
Sioux Falls Foss Field (726510): 1973-2002
February



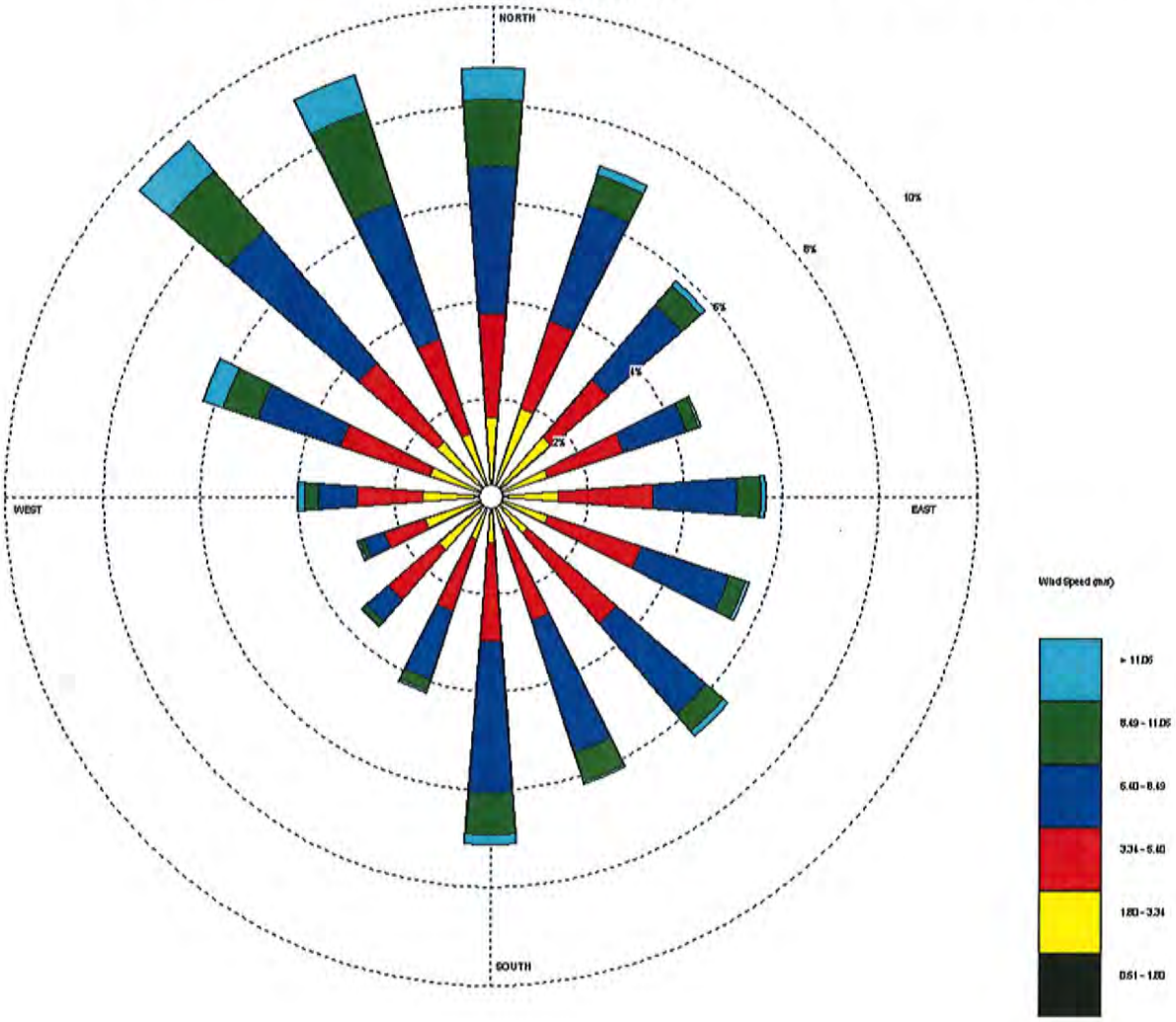
SOUTH DAKOTA STATE UNIVERSITY

Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: March :: Go ::
(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
March



South Dakota State University

Climate and Weather

Wind Rose charts (m/s)

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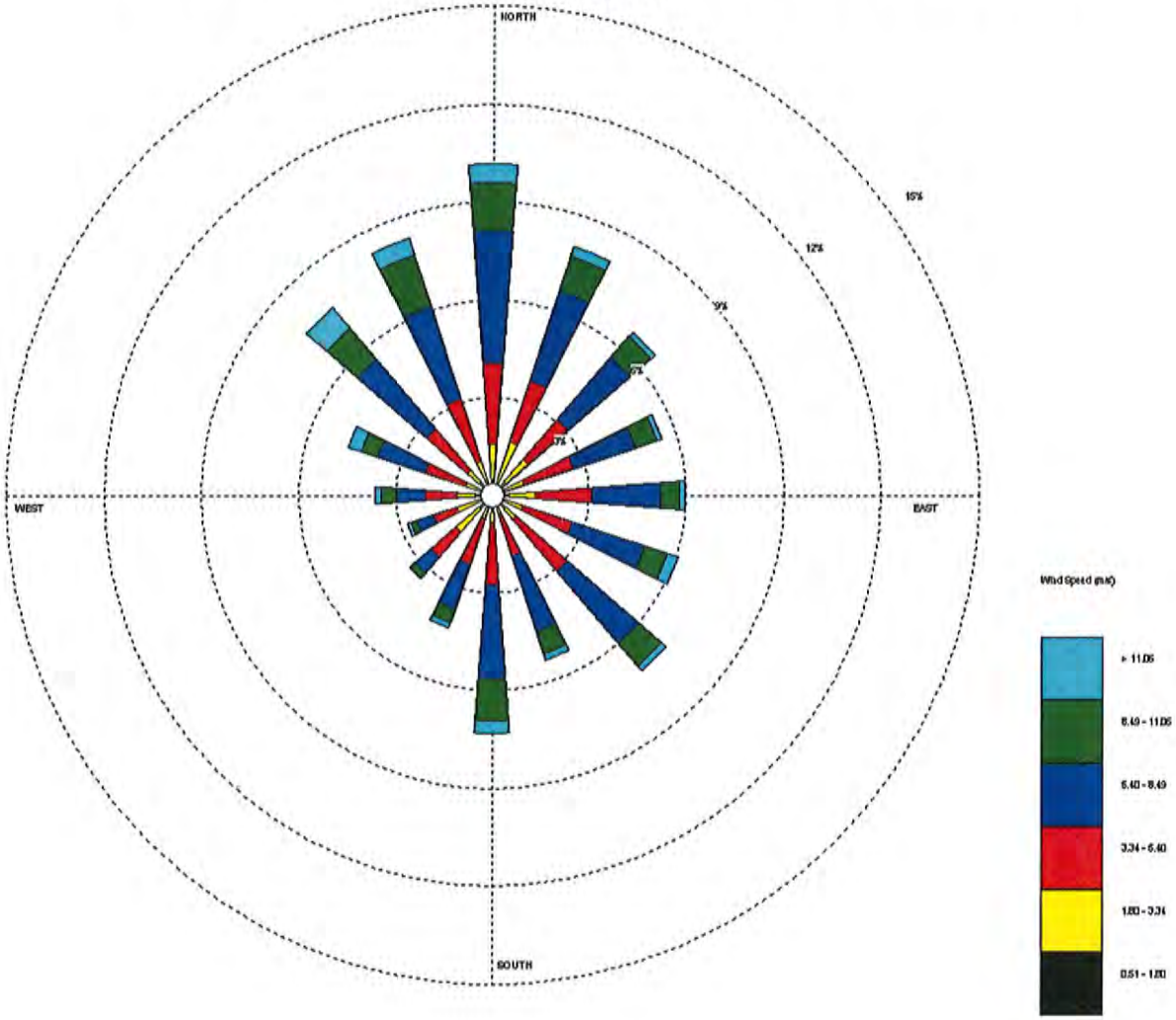
Sioux Falls Foss Field (726510): 1973-2002
April



South Dakota State University

Climate and Weather

Wind Rose charts (m/s)

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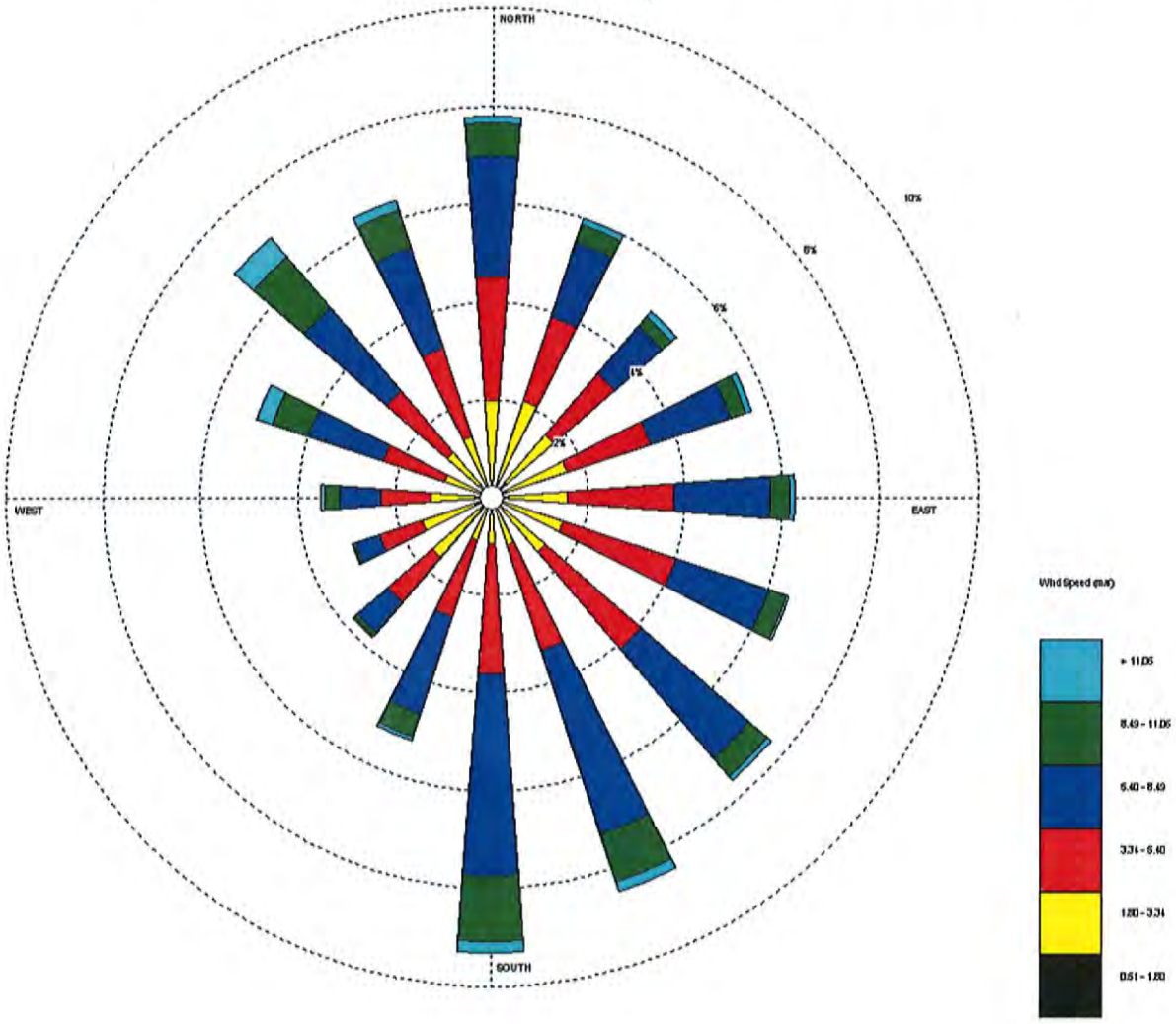
(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
May



South Dakota State University

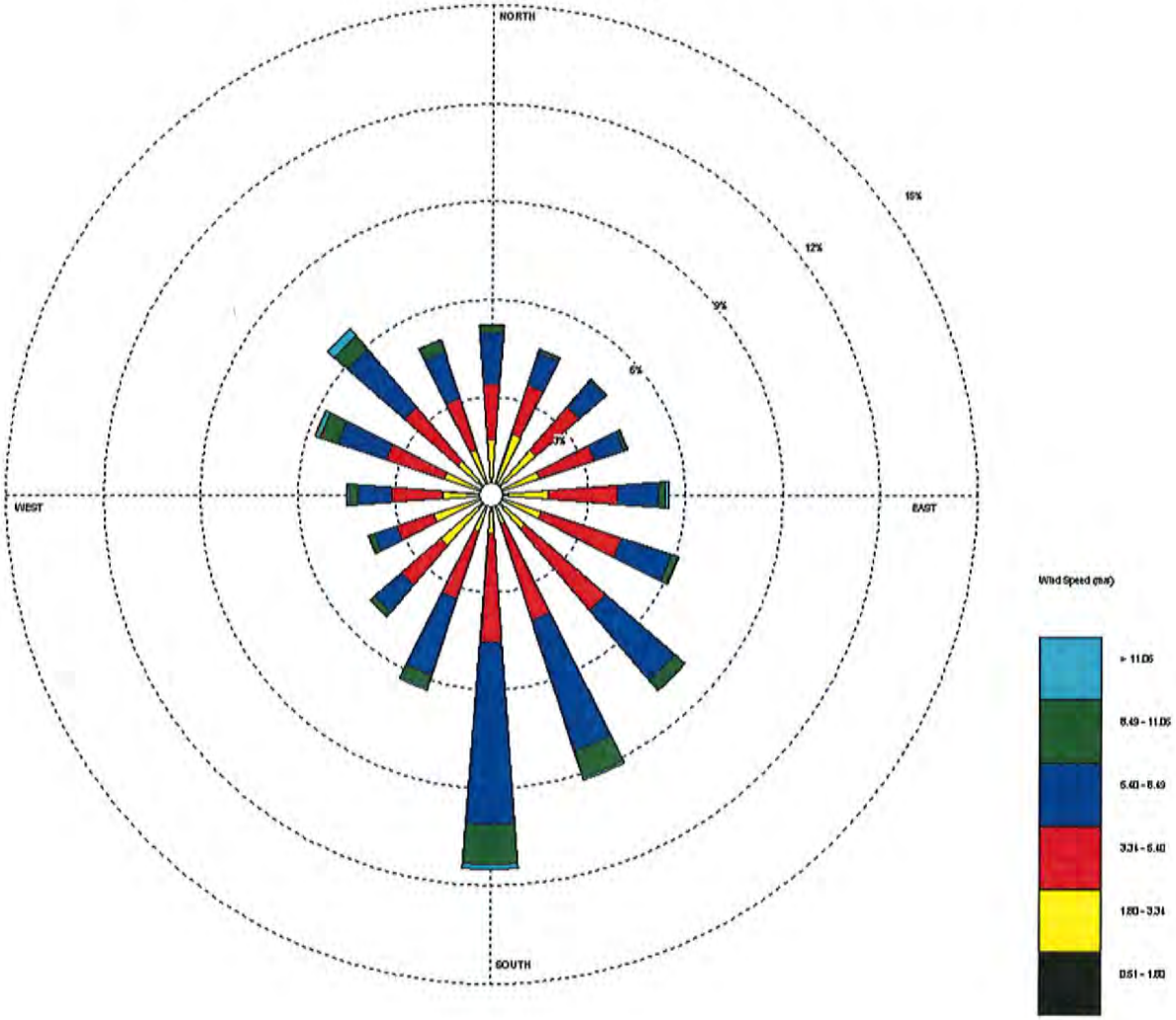
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: June :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
June



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Climate and Weather

Wind Rose charts (m/s)

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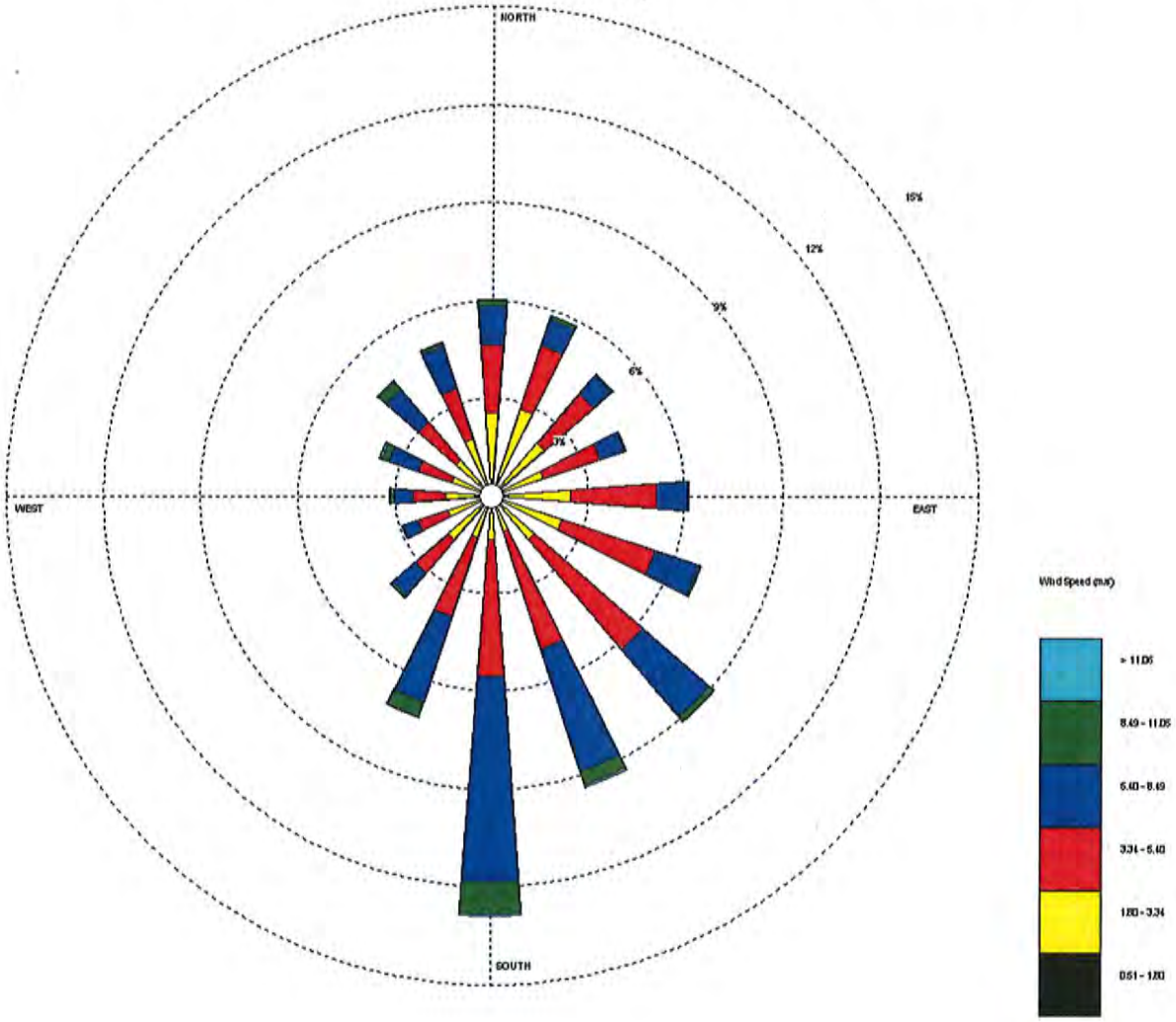
(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
July



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Climate and Weather

Wind Rose charts (m/s)

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(click here to view hourly average wind/temperature charts)

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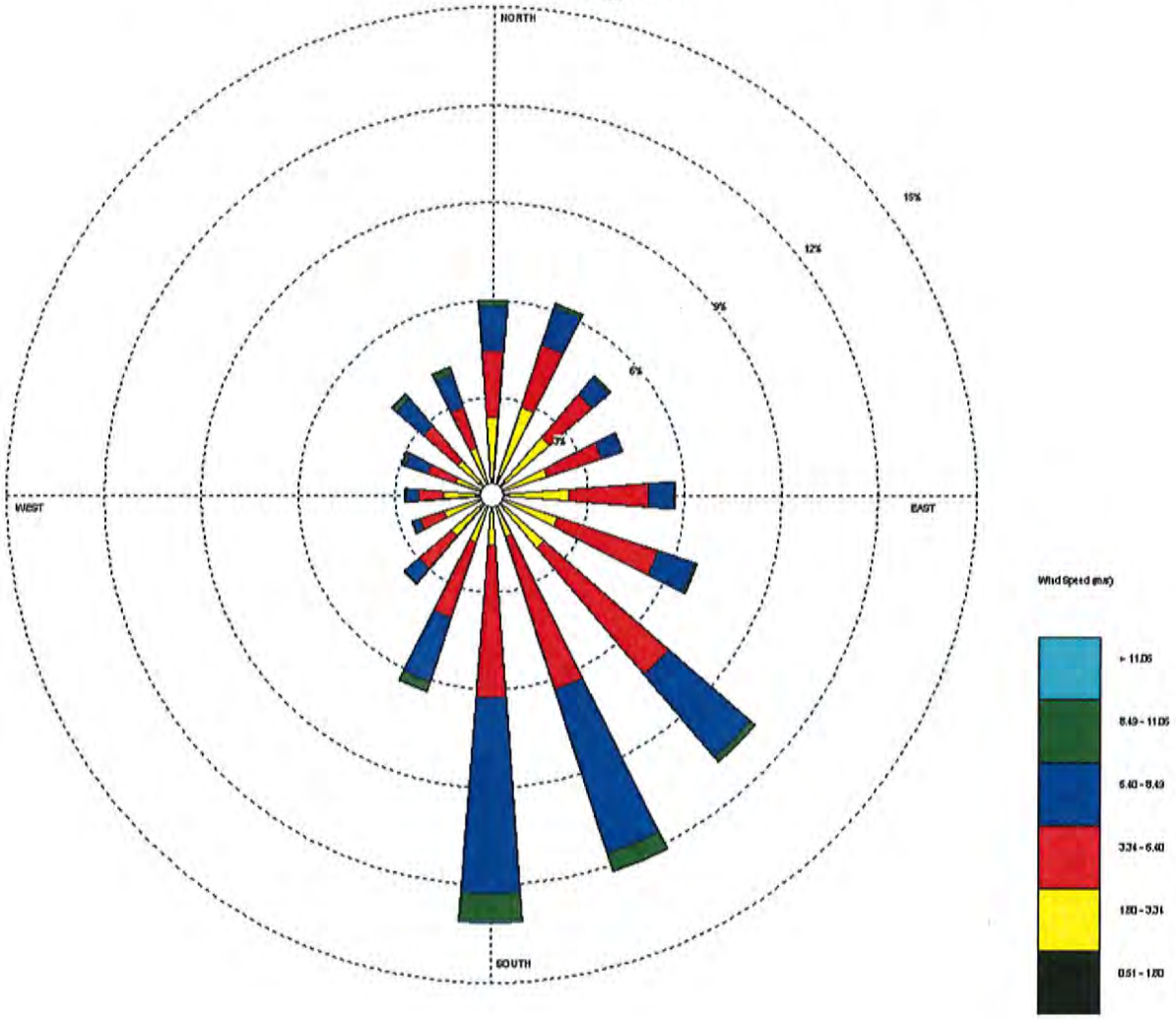
August



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Climate and Weather

Wind Rose charts (m/s)

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(click here to view hourly average wind/temperature charts)

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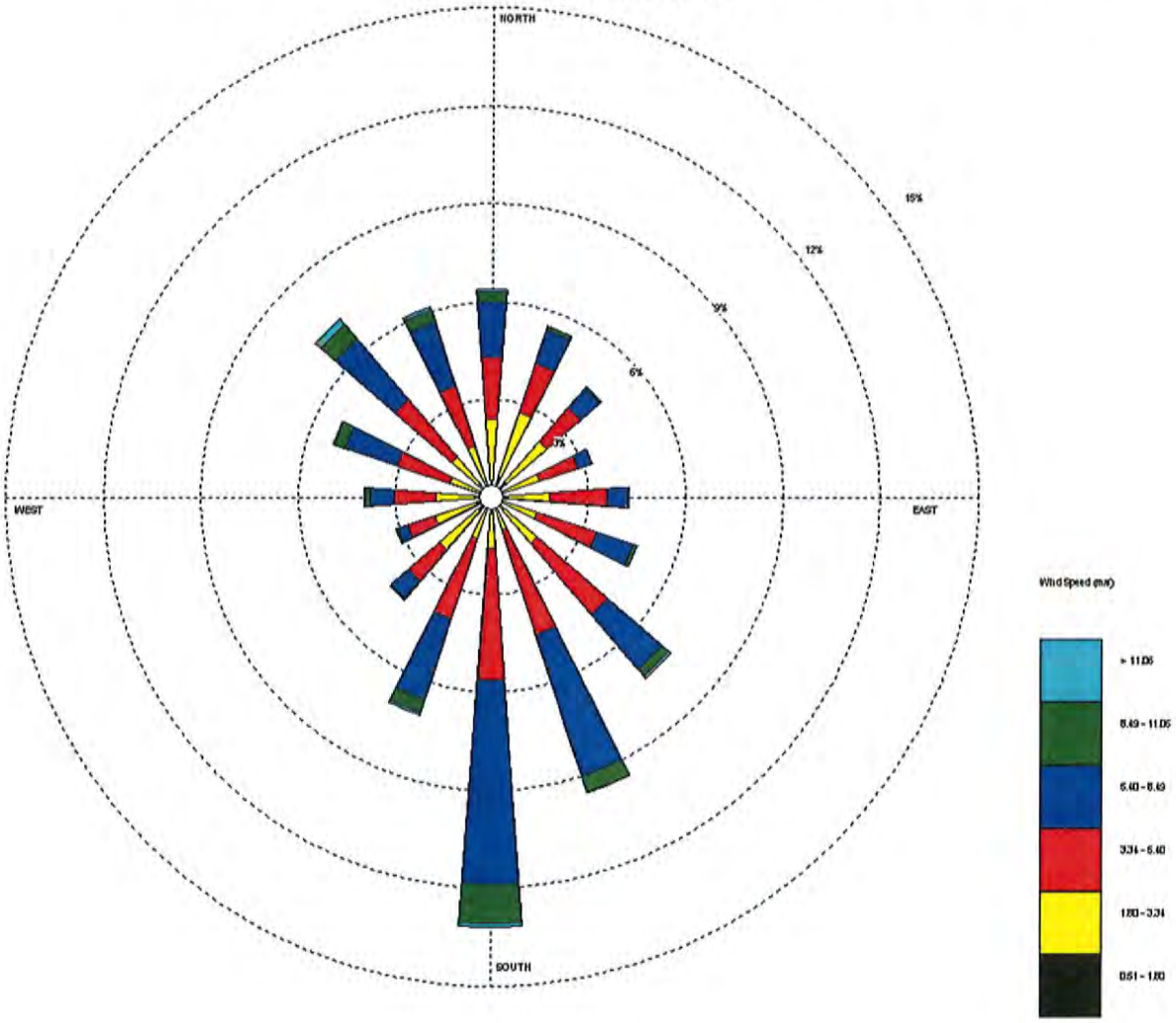
September



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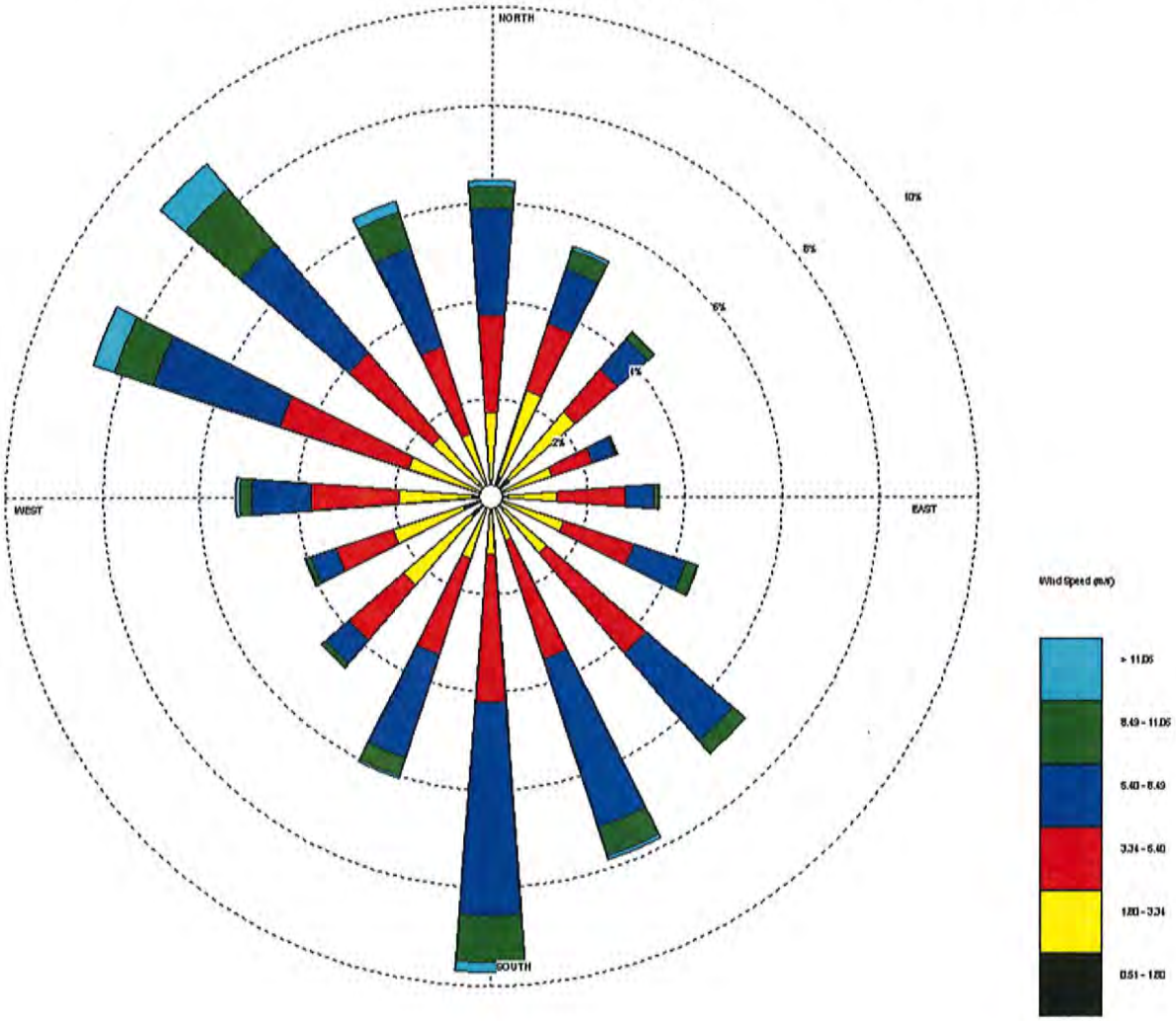
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: October :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
October



South Dakota State University

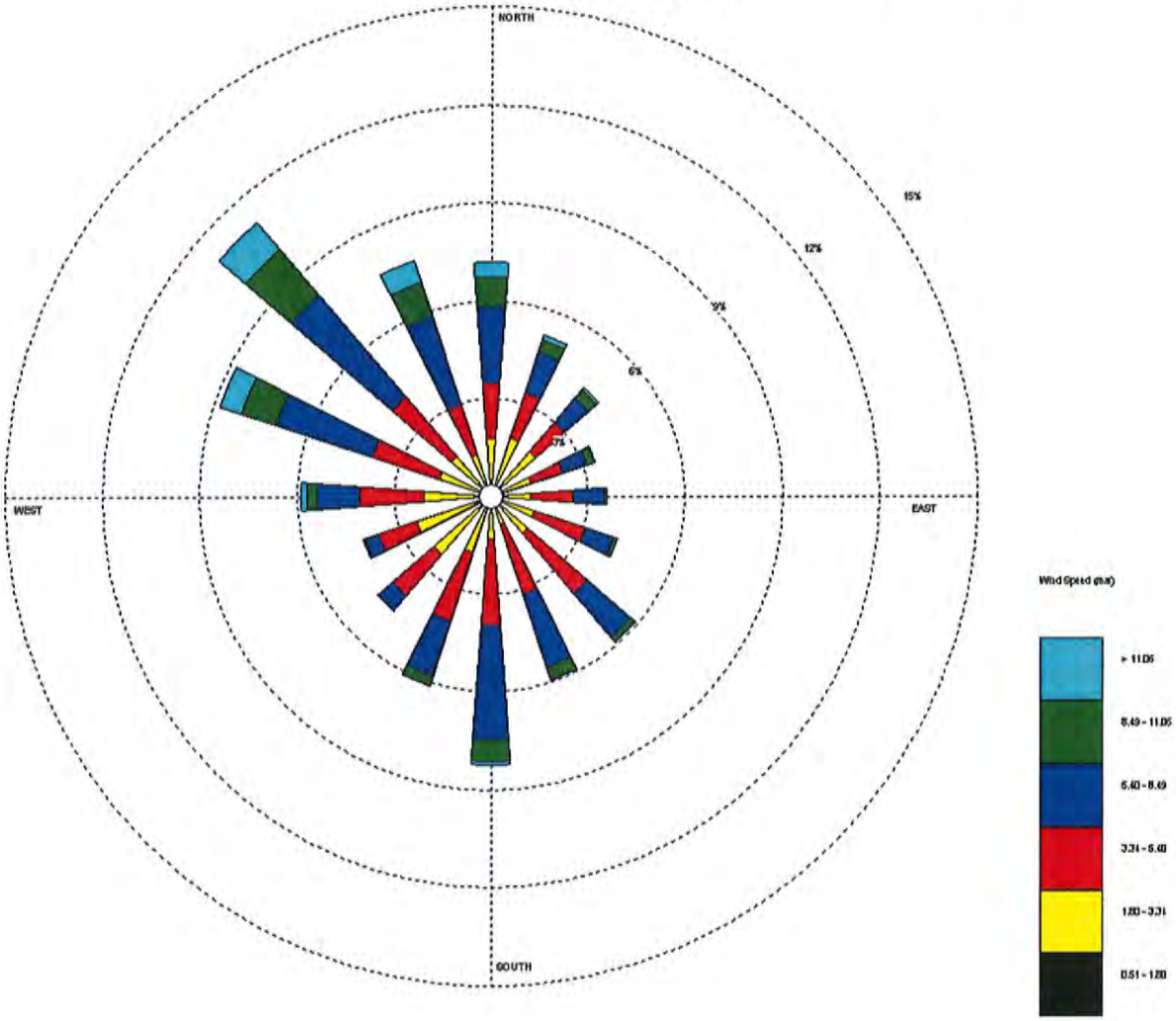
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: November :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
November



South Dakota State University

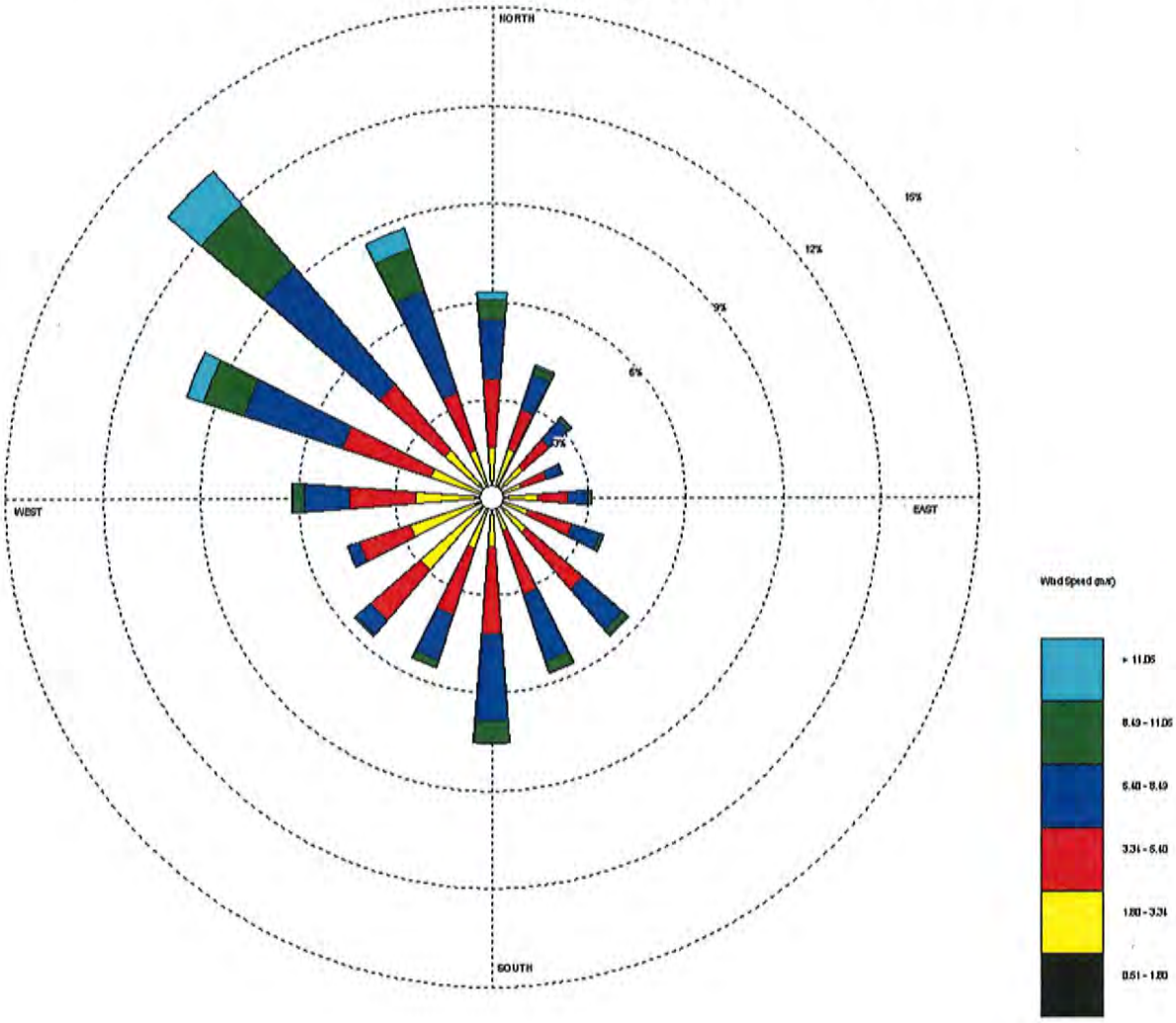
Climate and Weather

Wind Rose charts (m/s)

For: Sioux Falls Month of: December :: Go ::

(click here to view hourly average wind/temperature charts)

Sioux Falls Foss Field (726510): 1973-2002
December



Project Cost Estimate

Brandon WWTF Lift Station

Brandon, South Datkota

STOCKWELL ENGINEERS

SEI No. 11315

December 1, 2015

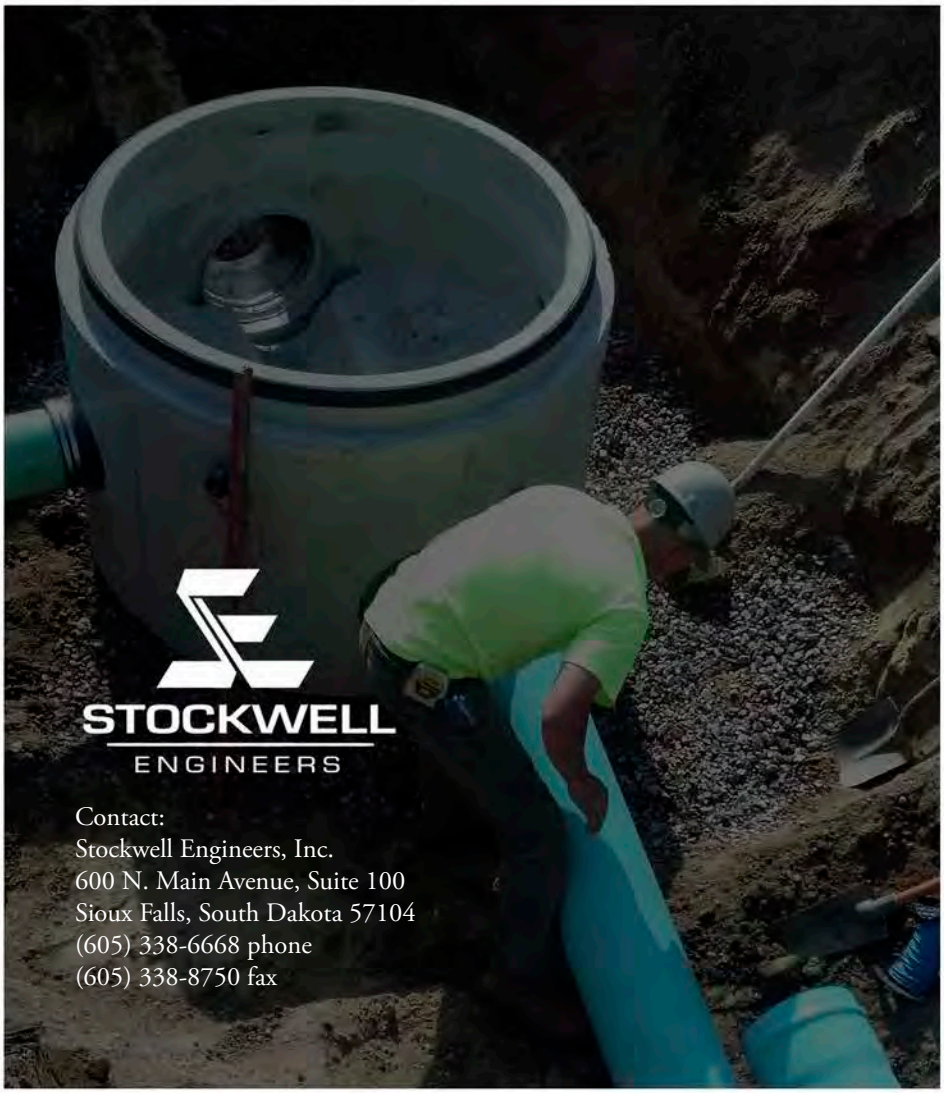
ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	PRICE
1	Mobilization	LS	1	$145,000.00	$145,000.00
2	Clearing	LS	1	$8,000.00	$8,000.00
3	Remove & Dispose Existing LS	Each	1	$15,000.00	$15,000.00
4	Parshall Flume & Flow Meter	LS	1	$25,000.00	$25,000.00
5	Electrical Service	LS	1	$75,000.00	$75,000.00
6	SCADA System	LS	1	$35,000.00	$35,000.00
7	Pump Building	LS	1	$500,000.00	$500,000.00
8	Wet/Dry Well Lift Station	LS	1	$970,000.00	$970,000.00
9	Odor Scrubber	LS	1	$65,000.00	$65,000.00
10	Standby Generator and Tank	LS	1	$70,000.00	$70,000.00
11	Air Release Manhole	Each	1	$6,000.00	$6,000.00
12	Sanitary Sewer Manhole	Each	2	$6,500.00	$13,000.00
13	15" Sanitary Sewer Pipe	LF	450	$50.00	$22,500.00
14	8" Sanitary Sewer Force Main	LF	210	$40.00	$8,400.00
15	10" Sanitary Sewer Force Main	LF	40	$45.00	$1,800.00
16	Connect to Existing Force Main	Each	2	$1,000.00	$2,000.00
17	Site Grading	LS	1	$110,000.00	$110,000.00
18	Contactor Furnished Topsoil	CY	800	$12.00	$9,600.00
19	Seeding, Fertilizing & Mulch	SY	1000	$5.00	$5,000.00
20	Sanitary Sewer By-Pass Pumping	LS	1	$15,000.00	$15,000.00
21	Erosion Control	LS	1	$8,500.00	$8,500.00
22	Vehicle Tracking Control	Each	1	$1,000.00	$1,000.00
23	Concrete Washout Area	Each	1	$800.00	$800.00

Subtotal	$2,111,600.00
Contingencies (5%)	$106,000.00
Total Estimated Construction Costs	**$2,217,600.00**
ENGINEERING	$160,900.00
CONSTRUCTION ADMINISTARATION	$174,900.00
LEGAL, ADMINISTRATION & TESTING (2%)	$45,000.00
TOTAL ESTIMATED PROJECT COST	**$2,598,400.00**

Brandon Comprehensive Wastewater Study - Amendment 1

September 2015
SEI No. 8112

Brandon
SOUTH DAKOTA
Building a Better Life



STOCKWELL
ENGINEERS

Contact:
Stockwell Engineers, Inc.
600 N. Main Avenue, Suite 100
Sioux Falls, South Dakota 57104
(605) 338-6668 phone
(605) 338-8750 fax

ADDENDUM #1

COMPREHENSIVE WASTEWATER COLLECTION AND TREATMENT SYSTEMS STUDY

FOR

THE

CITY OF BRANDON

JULY 2013

ADDENDUM – SEPTEMBER 2015

SEI NO. 8112

I hereby certify that this report was prepared

by me or under my direct supervision and that

I am a duly Registered Professional Engineer

under the laws of the State of South Dakota.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
6853
JON R.
BROWN
SOUTH DAKOTA

9-24-15

Jon R. Brown, P.E.

S.D. Registration No. 6853

STOCKWELL
ENGINEERS

TREATMENT ALTERNATIVE 5: PUMPING ONLY TO SIOUX FALLS

The existing treatment system was built in 1982 when the population was approximately 2,589. The treatment system is overloaded both hydraulically and organically because the system has never been expanded and the current population is 9,088. Treatment Alternative 5 proposes the City stop running the existing aeration system and pump everything to Sioux Falls. The City would add a new lift station and force main that would pump all of the wastewater to Sioux Falls. This alternative allows the City to compare the Sioux Falls pumping cost to other alternatives. The table below illustrates how the pumping charge will increase over time. This table assumes the Sioux Falls charge will increase by 3.0% annually and electrical cost will increase by 1% annually. It also shows the System Development Charge that Sioux Falls will require. The cost estimate for this alternative is shown on the following page.

Table 34 Future Treatment Cost Projections

Year	Charge per Thousand Gallons	Charge With Credits	Annual Cost to Pump to Sioux Falls	System Development Charge	Annual Sioux Falls Cost
2008	$ 0.75		$99,539		$99,539
2009	$ 1.10		$118,292		$118,292
2010	$ 1.10		$119,544		$119,544
2011	$ 1.41		$140,341		$140,341
2012	$ 1.41		$152,663		$152,663
2013	$ 3.89	$ 3.45	$990,000	$40,647	$1,030,647
2014	$ 3.89	$ 3.45	$1,000,000	$81,294	$1,081,294
2015	$ 4.01	$ 3.57	$1,078,000	$83,733	$1,161,733
2016	$ 4.13	$ 3.69	$1,176,000	$86,245	$1,262,245
2017	$ 4.25	$ 3.81	$1,246,000	$88,832	$1,334,832
2018	$ 4.38	$ 3.94	$1,313,000	$91,497	$1,404,497
2019	$ 4.51	$ 4.07	$1,384,000	$94,242	$1,478,242
2020	$ 4.64	$ 4.20	$1,458,000	$97,069	$1,555,069
2021	$ 4.78	$ 4.34	$1,535,000	$99,981	$1,634,981
2022	$ 4.93	$ 4.49	$1,615,000	$102,981	$1,717,981
2023	$ 5.08	$ 4.64	$1,699,000	$106,070	$1,805,070
2024	$ 5.23	$ 5.23	$1,786,000	$109,252	$1,895,252
2025	$ 5.38	$ 5.38	$1,877,000	$112,530	$1,989,530
2026	$ 5.55	$ 5.55	$1,972,000	$115,906	$2,087,906
2027	$ 5.71	$ 5.71	$2,070,000	$119,383	$2,189,383
2028	$ 5.88	$ 5.88	$2,178,000	$122,964	$2,300,964
2029	$ 6.06	$ 6.06	$2,291,000	$126,653	$2,417,653
2030	$ 6.24	$ 6.24	$2,408,000	$130,453	$2,538,453
2031	$ 6.43	$ 6.43	$2,531,000	$134,367	$2,665,367
2032	$ 6.62	$ 6.62	$2,658,000	$138,398	$2,796,398
2033	$ 6.82	$ 6.82	$2,791,000	$142,550	$2,933,550

Figure 25 | Treatment Alternative 5

0 50 100 200

Brandon SOUTH DAKOTA Building a Better Life

STOCKWELL ENGINEERS

Table 35 Cost Estimate for Treatment Alternative 5

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$151,000.00	$151,000.00
2	Parshall Flume & Flow Meter	1	LS	$20,000.00	$20,000.00
3	Electrical Service	1	LS	$70,000.00	$70,000.00
4	SCADA System	1	LS	$20,000.00	$20,000.00
5	Pump Building	1	LS	$180,000.00	$180,000.00
6	Standby Generator & Tank	1	LS	$70,000.00	$70,000.00
7	Wet/Dry Well Lift Station	1	LS	$1,035,000.00	$1,035,000.00
8	Remove & Dispose of Existing Lift Station	1	LS	$10,000.00	$10,000.00
9	Air Release Manhole	2	EA	$5,000.00	$10,000.00
10	Site Grading	1	LS	$80,000.00	$80,000.00
11	Aggregate Base Course (8")	100	TON	$25.00	$2,500.00
12	Salvage & Place Topsoil	1,000	CY	$5.00	$5,000.00
13	Seeding, Fertilizing & Mulching	250	SY	$1.50	$375.00
14	Trench Dewatering	1	LS	$5,000.00	$5,000.00
				Subtotal	$1,658,875.00
				Contingencies (15%)	$249,000.00
				Total Estimated Construction Costs	**$1,907,875.00**
				ENGINEERING	**$276,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$77,000.00**
				TOTAL ESTIMATED PROJECT COST	**$2,260,875.00**

Table 36 EUAC for Treatment Alternative 5

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$151,000.00	$0.00	$0.00	$151,000.00
Parshall Flume & Flow Meter	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Electrical Service	$70,000.00	$42,000.00	$23,254.38	$46,745.62
SCADA System	$20,000.00	$12,000.00	$6,644.11	$13,355.89
Pump Building	$180,000.00	$108,000.00	$59,796.98	$120,203.02
Standby Generator & Tank	$70,000.00	$42,000.00	$23,254.38	$46,745.62
Wet/Dry Well Lift Station	$1,035,000.00	$621,000.00	$343,832.64	$691,167.36
Remove & Dispose of Existing Lift Station	$10,000.00	$0.00	$0.00	$10,000.00
Air Release Manhole	$10,000.00	$6,000.00	$3,322.05	$6,677.95
Site Grading	$80,000.00	$0.00	$0.00	$80,000.00
Aggregate Base Course (8")	$2,500.00	$1,500.00	$830.51	$1,669.49
Salvage & Place Topsoil	$5,000.00	$0.00	$0.00	$5,000.00
Seeding, Fertilizing & Mulching	$375.00	$0.00	$0.00	$375.00
Trench Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Remaining Capital Costs	$602,000.00	$0.00	$0.00	$602,000.00
Total Construction Cost	**$2,260,875.00**	**$844,500.00**	**$467,579.17**	**$1,793,295.83**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$2,000.00			$29,754.95
Supplies	$2,000.00			$29,754.95
Utilities	$15,000.00			$223,162.12
Labor	$3,000.00			$44,632.42
Total Annual Cost	**$22,000.00**			**$327,304.45**
			Total Net Present Worth	**$2,120,600.27**
			EUAC	**$142,537.65**

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Canton

Project Title:	Dakota Street Utilities Improvement
Funding Requested:	$1,648,000
Other Proposed Funding:	$200,000 - Community Access Grant
Total Project Cost:	$1,848,000
Project Description:	The city of Canton is planning to reconstruct approximately 2,700 feet of Dakota Street to improve the underground utility infrastructure. The existing water distribution system, sanitary sewer system, and storm sewer system are in need of replacement due to the age and condition of the existing system. The new sanitary sewer collection system will include replacing approximately 2,700 feet of 8-inch PVC mains and eight manholes, and lowering the depth of the collection system. This project will also replace the storm sewer system by installing 3,100 feet of reinforced concrete pipe, 11 junction boxes and 33 inlets.
Alternatives Evaluated:	"No Action Alternative" is not recommended as it does not correct the deteriorating conditions of the sanitary sewer system and the undersized storm sewer system. "Open Trench Construction Alternative" is the recommended type of construction for this project due to the presence of multiple underground utilities, both public and private, within the street corridor. "Trenchless Technology Construction Alternative" includes horizontal directional drilling or boring/jacking trenchless techniques which are not recommended methods because of the numerous unknown conflicts with various utilities within the project corridor.
Implementation Schedule:	The city of Canton plans to advertise bids for this project in January 2017 with a completion date of November 2017.
Service Population:	3,317
Current Domestic Rate:	$39.30 per 5,000 gallons usage

Interest Rate: 3.25% Term: 30 years Security: System Revenue

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan, Canton would have 119% debt coverage based on system revenue generated with the current rate of $39.30 for 5,000 gallons usage.

50% Funding Subsidy:	$824,000 subsidy with a loan of $824,000.
Coverage at 50% Subsidy:	Based on 50% subsidy and $824,000 loan, Canton would have 238% debt coverage based on system revenue generated with the current rate of $39.30 for 5,000 gallons usage.

ENGINEERING REVIEW COMPLETED BY: CLAIRE PESCHONG

FINANCIAL REVIEW COMPLETED BY: DEREK LANKFORD

SECOG

SOUTH EASTERN COUNCIL OF GOVERNMENTS

SOUTH DAKOTA

RECEIVED

DEC 31 2015

Division of Financial & Technical Assistance

December 29, 2015

Mike Perkovich
SD-DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Dear Mr. Perkovich:

Enclosed, please find the Clean Water State Revolving Loan Funding Application for the City of Canton's Dakota Street Improvements Phase I Project. Included with the general application are the following appendices:

Appendix A – Certification of Point Source Needs Categories, Cost and Effectiveness Certification Form, Certification Regarding Debarment, Suspension and Other Responsibility Matters
Appendix B – Signed Application Resolution
Appendix C – User Rate Ordinance
Appendix D – Amortization of Existing Clean Water Debt
Appendix E – 2014 Unaudited Financial Report
Appendix F – 2015 Budget
Appendix G – 2016 Budget
Appendix H – Documentation of an Active Registration in the SAM Database
Appendix I – Public Hearing Notice, Sign-in Sheets, & Unofficial Minutes (Official minutes will be sent after they are approved during the January council meeting)

The Facility Plan will be sent directly to DENR by JSA Engineers.

Sincerely,

Kristen Benidt
GIS Technician/Planner

Enclosures

Cc: City of Canton
Myron Adam, JSA Engineers

500 N. Western Ave. Suite 100 • Sioux Falls, SD 57104
Phone: 605.367.5390 • Fax: 605.367.5394
Website: www.secog.org • E-mail: gis@secog.org
Lynne Keller Forbes, Executive Director

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Canton	Proposed Funding Package
Address: 210 N. Dakota Street Canton, SD 57013	Requested Funding $1,648,000 Local Cash
Subapplicant:	Other: _____ Other: CommunityAccess $200,000
DUNS Number: 556447019	Other: _____ TOTAL $1,848,000

Project Title: Dakota Street Project-Phase 1

Description:

The City of Canton is proposing to construct the first phase of the Dakota Street Improvements Project which consists of improvements to the water distribution system, wastewater collection system and storm water system. The project area extends approximately one-half mile along Dakota Street beginning at US Hwy 18 (5th Street) and proceeding north to Lynn Avenue. The City proposes (1) to replace the existing water distribution system (comprised of aging smaller diameter cast-iron, ductile iron, asbestos cement and PVC pipe) with new larger-diameter PVC mains, (2) to replace the existing sanitary sewer collection system (comprised mainly of aging vitrified clay pipe exhibiting multiple joints, cracking, root intrusions, service line intrusions, and infiltration/ exfiltration) with new gravity PVC sewer mains, and (3) to replace and expand upon the existing storm sewer collection system (comprised mainly of undersized RCP, VCP and PVC mains and laterals) using reinforced concrete pipe and concrete junction boxes/ inlets. A Community Access Grant of $400,000 was received for this project with $200,000 applied to the Clean Water portion and $200,000 applied to the Drinking Water portion.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Charles Smith, Mayor		1/15/16
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: South Eastern Council of Governments

Contact Person: Kristen Benidt

Mailing Address: 500 N Western Ave, Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605)367-5390 Fax: (605)367-5394

Email address: gis@secog.org

Consulting Engineering Firm: JSA Engineering and Land Surveyors

Contact Person: Myron Adam

Mailing Address: 6810 S. Lyncrest Avenue, Suite 101

City, State, and Zip: Sioux Falls, SD 57108

Telephone Number: (605)367-1036 Fax: (605)367-1002

Email address: myron@jsaengineers.biz

Legal Counsel's Firm: Frieberg, Nelson, & Ask, LLP

Contact Person: Larry Nelson

Mailing Address: 206 E. 5th Street

City, State, and Zip: Canton, SD 57013

Telephone Number: (605)987-2686 Fax: (605)987-5779

Email address: lnelson@frieberglaw.com

Bond Counsel's Firm: Meierhenry, Sargent, LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Ave

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605)336-3075 Fax: (605)336-2593

Email address: todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B Community Access Grant	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$59,000					$59,000
D. Other SECOG	$3,000					$3,000
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$94,800					$94,800
B. Project Inspection Fees	$142,200					$142,200
C. Other						
4. Construction & Improvements	$1,214,000	$200,000				$1,414,000
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$1,513,000	$200,000				$1,713,000
10. Contingencies	$135,000					$135,000
11. Total (Lines 9 and 10)	$1,648,000	$200,000				$1,848,000
12. Total %	89.18%	10.82%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CWSRF/CWFCP		$1,648,000	March 2016
Other (Explain) Community Access Grant	$200,000		November 2015
Other (Explain)			
Total	$200,000	$1,648,000	$1,848,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 3,317 2010 3,057 2000 3,110

Top three employers within 30 miles	Number of Employees	Type of Business
Sanford Health	8600	Health Care
Avera Health	6734	Health Care
John Morrell & Co.	3300	Meat Processing

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2005	2011	2015			
Purpose	System Improvements	Wastewater Treatment Facility	Lift Station			
Security Pledged	Wastewater Revenue	Wastewater Revenue	Wastewater Revenue			
Amount	$595,137	$1,621,500	$731,418			
Maturity Date (mmm/yyyy)	12/1/2024	3/1/2031	7/15/2044			
Debt Holder	BWNR	BWNR	BWNR			
Debt Coverage Requirement	110%	110%	110%			
Avg. Annual Required Payment	$41,861	$108,110	$38,643			
Outstanding Balance	$321,986	$1,319,140	$720,173			

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$710,307	$738,108	$800,000	$800,000	$800,000	$800,000
Surcharge Fees						
Other (Explain)			$15,000	$15,000	$15,000	$15,000
Operating Expenses						
Personal Services	($102,653)	($126,482)	($129,500)	($120,500)	($124,115)	($127,838)
Chemical, Material & Supplies	($285,158)	($640,264)	($217,000)	($200,700)	($206,721)	($219,923)
Electric & Other Utilities			($51,800)	($51,800)	($53,354)	($54,955)
Other (Explain)			($18,550)	($16,050)	($16,532)	($17,028)
Operating Net Cash	$322,496	($28,638)	$398,150	$425,950	$414,278	$395,256
Nonoperating Cash Flow						
Interest Revenue	$165	$26	$500	$500	$500	$500
Transfers In (Explain)	$186,383	$64,795				
Fixed Asset Purchases	($150,277)	($1,054,060)	($499,500)	($116,500)	($116,500)	($116,500)
Transfers Out (Explain)						
Principal Debt Payments	($89,472)	$581,740	($83,861)	($115,831)	($119,440)	($156,313)
Interest Debt Payments	($60,980)	($56,858)	($62,818)	($72,884)	($69,175)	($118,506)
Other (Explain)	$29,667	$22,111				
Nonoperating Net Cash	($84,514)	($442,246)	($645,679)	($304,715)	($304,615)	($390,819)
Increase (Decrease) Cash	$237,982	($470,884)	($247,529)	$121,235	$109,663	$4,437
Beginning Cash Balance	$1,131,356	$1,369,338	$898,454	$650,925	$772,160	$881,823
Ending Cash Balance	$1,369,338	$898,454	$650,925	$772,160	$881,823	$886,260
Restricted Balance						
Unrestricted Balance						

Additional Comments (Explanations)

Revenue Other - Late Fees & Pasture Rent
Expense Other - Travel, Computers
Transfer In-Loans (to) from other funds
Nonoperating Cash Flow-Other-Cash flow from sale of investments ($14,833)
2017 & 2018 assume no increase in revenue and a 3% increase in expenses

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$39.30		1,135	523 cu. ft.
Business	$47.25		182	2570 cu. ft
Other:				
Other:				

Are fees based on usage or flat rate? Usage

When is proposed fee scheduled to take effect? N/A

When did the current fee take effect? April 5, 2013

What was the fee prior to the current rate? $38.33

Storm Sewer Projects Only: Does applicant have a separate storm water fee? no

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Adams Thermal Systems, Inc	Engine cooling syst manufact	14.1%
Keystone	Addiction treatment center	2.2%

Appendix A

Certification of Point Source Needs Categories, Cost and Effectiveness Certification Form, Certification Regarding Debarment, Suspension and Other Responsibility Matters

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	$768,000

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	$880,000
	TOTAL:	$1,648,000

Charles Smith, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-21-15

Date

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name: City of Canton, South Dakota

Project Name: Dakota Street Project - Phase 1

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature:

Printed Name: Chuck Smith

Title: Mayor

Date: 12-21-15

Project Engineer

Signature:

Printed Name: Myron Adam

License #: SD 6790

Date: 12/21/15

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Charles Smith, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-21-15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION NO. 1233

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $1,648,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

ORDINANCE # 1012

AN ORDINANCE AMENDING WATER AND WASTEWATER (SEWER) CHARGES AND SERVICES INSIDE AND OUTSIDE THE CORPORATE LIMITS OF THE CITY OF CANTON.

BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF CANTON, SOUTH DAKOTA THAT CHAPTER 13.12., SECTION 13.12.010 WATER RATES AND SERVICES. A. B., SECTION 13.12.030 WASTEWATER (SEWER) RATES INSIDE THE CORPORATE LIMITS OF THE CITY OF CANTON A. B. C. AND SECTION 13.12.040 WASTEWATER (SEWER) RATES AND SERVICE OUTSIDE THE CORPORATE LIMITS OF THE CITY OF CANTON A. B. C. OF THE CANTON MUNICIPAL CODE ARE HEREBY AMENDED TO READ AS FOLLOWS:

13.12.010 Water Rates and Services.

A. Residential Water Rate: A person serviced by the City of Canton, South Dakota as any single family dwelling unit in which each water service is metered independently shall be charged the following rates for water service:

0 to 100 cubic feet	$19.55 Base Charge per meter
101 cubic feet and above	$19.55 Base Charge per meter plus $2.05 per 100 cubic feet above 101 cubic feet

B. Commercial and Industrial Water Rate: A business or other legal entity serviced by the City of Canton, South Dakota.

0 to 100 cubic feet	$20.60 Base Charge per meter
101 to 25,000 cubic feet	$20.60 Base Charge per meter plus $ 2.15 per 100 cubic feet from 101 to 25,000 cubic feet
25,001 to 50,000 cubic feet	$20.60 Base Charge per meter plus $ 2.15 per 100 cubic feet from 101 to 25,000 plus $2.05 per 100 cubic feet above 25,001 to 50,000 cubic feet
50,001 and above	$20.60 Base Charge per meter plus $ 2.15 per 100 cubic feet from 101 to 25,000 plus $2.05 per 100 cubic feet above 25,001 to 50,000 cubic feet plus $2.00 per 100 cubic feet above 50,000 cubic feet

13.12.030 Wastewater (Sewer) rates inside the corporate limits of the City of Canton.

A. Residential Wastewater (Sewer) Rate: A person serviced by the City of Canton, South Dakota as a single family dwelling unit in which each water service is metered independently and is serviced by the sanitary wastewater (sewer) system.

The City of Canton determines that all residential wastewater (sewer) customers receiving wastewater service from the City shall be charged a residential wastewater rate based upon 100% of the total water usage as calculated from the water meter readings for each account. The fee for wastewater usage shall be as follows:

0 to 167 cubic feet	$25.75 Base Charge per meter
168 to 2,000 cubic feet	$25.75 Base Charge per meter plus $ 2.70 per 100 cubic feet to 2,000 cubic feet
2001 cubic feet and above	Cap of $75.27

B. Residential Wastewater (Sewer) Rate with Two Water Meters on One Service: A person serviced by the City of Canton, South Dakota as any single family dwelling unit which has two water distribution system meters on one water service and is connected to the wastewater (sewer) system.

The City of Canton determines that residential wastewater (sewer) customers receiving wastewater service from the City in that manner shall be charged at a rate of 100% of the total water usage as calculated from the main water meter servicing the residential structure. The fee for wastewater usage shall be as follows:

0 to 167 cubic feet	$25.75 Base Charge per meter
168 cubic feet and above	$25.75 Base Charge per meter plus $ 2.70 per 100 cubic feet

C. Commercial and Industrial Wastewater (Sewer) Rate: A business or other legal entity serviced by the City of Canton, South Dakota and is connected to the sanitary wastewater (sewer) system.

0 to 167 cubic feet	$30.40 Base Charge per meter
168 cubic feet and above	$30.40 Base Charge per meter plus $ 3.35 per 100 cubic feet

Commercial and industrial customer charges shall be based on 100% consumption of water in each month.

13.12.040 Wastewater (sewer) rates and service outside the corporate limits of the City of Canton.

A. Residential Wastewater (Sewer) Rate: A person serviced by the City of Canton, South Dakota as any single family dwelling unit in which each water service is metered independently.

The City of Canton determines that all residential wastewater (sewer) customers receiving wastewater service from the City shall be charged at a rate of 100% of the total water usage as calculated from the water meter readings for each account.

0 to 167 cubic feet	$38.60 Base Charge per meter
168 to 2,000 cubic feet	$38.60 Base Charge per meter plus $ 4.05 per 100 cubic feet to 2,000 cubic feet
2001 cubic feet and above	Cap of $112.88

Residential wastewater (sewer) rates shall be based on consumption of water in each month and shall be adjusted to reflect any changes in usage.

B. Residential Wastewater (Sewer) Rate with Two Water Meters on One Service: A person serviced by the City of Canton, South Dakota as any single family dwelling unit which has two water distribution system meters on one water system and is connected to the wastewater (sewer) system.

The City of Canton determines that residential wastewater (sewer) customers receiving wastewater service from the City in that manner shall be charged at a rate of 100% of the total water usage as calculated from the main water meter servicing the residential structure. The fee for wastewater usage shall be as follows:

0 to 167 cubic feet	$38.60 Base Charge per meter
168 cubic feet and above	$38.60 Base Charge per meter plus $ 4.05 per 100 cubic feet

C. Commercial and Industrial Wastewater (Sewer) Rate: A business or other legal entity serviced by the City of Canton, South Dakota and is connected to the sanitary wastewater (sewer) system.

0 to 167 cubic feet	$45.60 Base Charge per meter
168 to 50,000 cubic feet	$45.60 Base Charge per meter plus $ 5.05 per 100 cubic feet to 50,000 cubic feet
50,001 cubic feet and above	$45.60 Base Charge per meter plus $ 5.05 per 100 cubic feet to 50,000 cubic feet plus $4.30 per 100 cubic feet above 50,000 cubic feet

Commercial and industrial customer charges shall be based on 100% consumption of water in each month and shall be adjusted to reflect any changes in usage.

_____
Charles Smith, Mayor

ATTEST:

_____
Kyle Cwach
Finance Officer

First Reading: February 19, 2013
Second Reading: March 4, 2013
Publish: March 14, 2013
Effective Date: April 5, 2013

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$595,137.41		12-01-2024					

References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: City of Canton- Clean Water # 2
PO Box 1834
Canton, SD 57013-1834

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
AS TRUSTEE FOR SOUTH DAKOTA DEPARTMENT
OF ENVIRONMENT AND NATURAL RESOURCES
PIERRE, SD 57501

Disbursement Date:
Interest Rate: 3.500

Repayment Schedule: Installment
Calculation Method: 30/360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	06-01-2005	10,465.35	5,149.59	5,315.76	589,821.65
2	09-01-2005	10,465.35	5,160.94	5,304.41	584,517.24
3	12-01-2005	10,465.35	5,114.52	5,350.83	579,166.41
2005 TOTALS:		31,396.05	15,425.05	15,971.00	
4	03-01-2006	10,465.35	5,067.71	5,397.64	573,768.77
5	06-01-2006	10,465.35	5,020.47	5,444.88	568,323.89
6	09-01-2006	10,465.35	4,972.84	5,492.51	562,831.38
7	12-01-2006	10,465.35	4,924.77	5,540.58	557,290.80
2006 TOTALS:		41,861.40	19,985.79	21,875.61	
8	03-01-2007	10,465.35	4,876.30	5,589.05	551,701.75
9	06-01-2007	10,465.35	4,827.39	5,637.96	546,063.79
10	09-01-2007	10,465.35	4,778.06	5,687.29	540,376.50
11	12-01-2007	10,465.35	4,728.29	5,737.06	534,639.44
2007 TOTALS:		41,861.40	19,210.04	22,651.36	
12	03-01-2008	10,465.35	4,678.10	5,787.25	528,852.19
13	06-01-2008	10,465.35	4,627.45	5,837.90	523,014.29
14	09-01-2008	10,465.35	4,576.38	5,888.97	517,125.32
15	12-01-2008	10,465.35	4,524.84	5,940.51	511,184.81
2008 TOTALS:		41,861.40	18,406.77	23,454.63	
16	03-01-2009	10,465.35	4,472.87	5,992.48	505,192.33
17	06-01-2009	10,465.35	4,420.43	6,044.92	499,147.41
18	09-01-2009	10,465.35	4,367.54	6,097.81	493,049.60
19	12-01-2009	10,465.35	4,314.19	6,151.16	486,898.44
2009 TOTALS:		41,861.40	17,575.03	24,286.37	
20	03-01-2010	10,465.35	4,260.36	6,204.99	480,693.45
21	06-01-2010	10,465.35	4,206.07	6,259.28	474,434.17
22	09-01-2010	10,465.35	4,151.30	6,314.05	468,120.12
23	12-01-2010	10,465.35	4,096.05	6,369.30	461,750.82
2010 TOTALS:		41,861.40	16,713.78	25,147.62	
24	03-01-2011	10,465.35	4,040.32	6,425.03	455,325.79
25	06-01-2011	10,465.35	3,984.10	6,481.25	448,844.54
26	09-01-2011	10,465.35	3,927.39	6,537.96	442,306.58
27	12-01-2011	10,465.35	3,870.18	6,595.17	435,711.41
2011 TOTALS:		41,861.40	15,821.99	26,039.41	
28	03-01-2012	10,465.35	3,812.47	6,652.88	429,058.53
29	06-01-2012	10,465.35	3,754.27	6,711.08	422,347.45
30	09-01-2012	10,465.35	3,695.54	6,769.81	415,577.64
31	12-01-2012	10,465.35	3,636.30	6,829.05	408,748.59
2012 TOTALS:		41,861.40	14,898.58	26,962.82	
32	03-01-2013	10,465.35	3,576.55	6,888.80	401,859.79
33	06-01-2013	10,465.35	3,516.27	6,949.08	394,910.71
34	09-01-2013	10,465.35	3,455.47	7,009.88	387,900.83
35	12-01-2013	10,465.35	3,394.14	7,071.21	380,829.62
2013 TOTALS:		41,861.40	13,942.43	27,918.97	
36	03-01-2014	10,465.35	3,332.25	7,133.10	373,696.52
37	06-01-2014	10,465.35	3,269.85	7,195.50	366,501.02
38	09-01-2014	10,465.35	3,206.88	7,258.47	359,242.55
39	12-01-2014	10,465.35	3,143.38	7,321.97	351,920.58

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2014 TOTALS:		**41,861.40**	**12,952.36**	**28,909.04**	
40	03-01-2015	10,465.35	3,079.30	7,386.05	344,524.53
41	06-01-2015	10,465.35	3,014.68	7,450.67	337,083.86
42	09-01-2015	10,465.35	2,949.48	7,515.87	329,567.99
43	12-01-2015	10,465.35	2,883.72	7,581.63	321,986.36
2015 TOTALS:		**41,861.40**	**11,927.18**	**29,934.22**	
44	03-01-2016	10,465.35	2,817.38	7,647.97	314,338.39
45	06-01-2016	10,465.35	2,750.46	7,714.89	306,623.50
46	09-01-2016	10,465.35	2,682.96	7,782.39	298,841.11
47	12-01-2016	10,465.36	2,614.86	7,850.49	290,990.62
2016 TOTALS:		**41,861.40**	**10,865.66**	**30,995.74**	
48	03-01-2017	10,465.35	2,546.17	7,919.18	283,071.44
49	06-01-2017	10,465.35	2,476.87	7,988.48	275,082.96
50	09-01-2017	10,465.35	2,406.98	8,058.37	267,024.59
51	12-01-2017	10,465.35	2,336.46	8,128.89	258,895.70
2017 TOTALS:		**41,861.40**	**9,766.48**	**32,094.92**	
52	03-01-2018	10,465.35	2,265.34	8,200.01	250,695.69
53	06-01-2018	10,465.35	2,193.59	8,271.76	242,423.93
54	09-01-2018	10,465.35	2,121.21	8,344.14	234,079.79
55	12-01-2018	10,465.35	2,048.19	8,417.16	225,662.63
2018 TOTALS:		**41,861.40**	**8,628.33**	**33,233.07**	
56	03-01-2019	10,465.35	1,974.55	8,490.80	217,171.83
57	06-01-2019	10,465.35	1,900.26	8,565.09	208,606.74
58	09-01-2019	10,465.35	1,825.31	8,640.04	199,966.70
59	12-01-2019	10,465.35	1,749.70	8,715.65	191,251.05
2019 TOTALS:		**41,861.40**	**7,449.82**	**34,411.58**	
60	03-01-2020	10,465.35	1,673.45	8,791.90	182,459.15
61	06-01-2020	10,465.35	1,596.52	8,868.83	173,590.32
62	09-01-2020	10,465.35	1,518.91	8,946.44	164,643.88
63	12-01-2020	10,465.35	1,440.64	9,024.71	155,619.17
2020 TOTALS:		**41,861.40**	**6,229.52**	**35,631.88**	
64	03-01-2021	10,465.35	1,361.66	9,103.69	146,515.48
65	06-01-2021	10,465.35	1,282.02	9,183.33	137,332.15
66	09-01-2021	10,465.35	1,201.65	9,263.70	128,068.45
67	12-01-2021	10,465.35	1,120.60	9,344.75	118,723.70
2021 TOTALS:		**41,861.40**	**4,965.93**	**36,895.47**	
68	03-01-2022	10,465.35	1,038.83	9,426.52	109,297.18
69	06-01-2022	10,465.35	956.35	9,509.00	99,788.18
70	09-01-2022	10,465.35	873.15	9,592.20	90,195.98
71	12-01-2022	10,465.35	789.21	9,676.14	80,519.84
2022 TOTALS:		**41,861.40**	**3,657.54**	**38,203.86**	
72	03-01-2023	10,465.35	704.55	9,760.80	70,759.04
73	06-01-2023	10,465.35	619.14	9,846.21	60,912.83
74	09-01-2023	10,465.35	532.99	9,932.36	50,980.47
75	12-01-2023	10,465.35	446.08	10,019.27	40,961.20
2023 TOTALS:		**41,861.40**	**2,302.76**	**39,558.64**	
76	03-01-2024	10,465.35	358.41	10,106.94	30,854.26
77	06-01-2024	10,465.35	269.98	10,195.37	20,658.89
78	09-01-2024	10,465.35	180.76	10,284.59	10,374.30
79	12-01-2024	10,465.35	91.05	10,374.30	0.00
2024 TOTALS:		**41,861.40**	**900.20**	**40,961.20**	
TOTALS:		**826,762.65**	**231,625.24**	**595,137.41**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

LASER PRO Lending, Ver. 5.26.00.001 Copyr. Harland Financial Solutions, Inc. 1997, 2003. All Rights Reserved. - SD TR-5377 PR-4

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,621,500.00		03-01-2031					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Canton-Clean Water # 3
Total Advances $2,462,000.00
Principal Forgiveness $840,500.00

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

Disbursement Date:
Interest Rate: 3.000

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	06-01-2011	27,027.50	12,161.25	14,866.25	1,606,633.75
2	09-01-2011	27,027.50	12,049.75	14,977.75	1,591,656.00
3	12-01-2011	27,027.50	11,937.42	15,090.08	1,576,565.92
2011 TOTALS:		**81,082.50**	**36,148.42**	**44,934.08**	
4	03-01-2012	27,027.50	11,824.24	15,203.26	1,561,362.66
5	06-01-2012	27,027.50	11,710.22	15,317.28	1,546,045.38
6	09-01-2012	27,027.50	11,595.34	15,432.16	1,530,613.22
7	12-01-2012	27,027.50	11,479.60	15,547.90	1,515,065.32
2012 TOTALS:		**108,110.00**	**46,609.40**	**61,500.60**	
8	03-01-2013	27,027.50	11,362.99	15,664.51	1,499,400.81
9	06-01-2013	27,027.50	11,245.51	15,781.99	1,483,618.82
10	09-01-2013	27,027.50	11,127.14	15,900.36	1,467,718.46
11	12-01-2013	27,027.50	11,007.89	16,019.61	1,451,698.85
2013 TOTALS:		**108,110.00**	**44,743.53**	**63,366.47**	
12	03-01-2014	27,027.50	10,887.74	16,139.76	1,435,559.09
13	06-01-2014	27,027.50	10,766.69	16,260.81	1,419,298.28
14	09-01-2014	27,027.50	10,644.74	16,382.76	1,402,915.52
15	12-01-2014	27,027.50	10,521.87	16,505.63	1,386,409.89
2014 TOTALS:		**108,110.00**	**42,821.04**	**65,288.96**	
16	03-01-2015	27,027.50	10,398.07	16,629.43	1,369,780.46
17	06-01-2015	27,027.50	10,273.35	16,754.15	1,353,026.31
18	09-01-2015	27,027.50	10,147.70	16,879.80	1,336,146.51
19	12-01-2015	27,027.50	10,021.10	17,006.40	1,319,140.11
2015 TOTALS:		**108,110.00**	**40,840.22**	**67,269.78**	
20	03-01-2016	27,027.50	9,893.55	17,133.95	1,302,006.16
21	06-01-2016	27,027.50	9,765.05	17,262.45	1,284,743.71
22	09-01-2016	27,027.50	9,635.57	17,391.93	1,267,351.78
23	12-01-2016	27,027.50	9,505.14	17,522.36	1,249,829.42
2016 TOTALS:		**108,110.00**	**38,799.31**	**69,310.69**	
24	03-01-2017	27,027.50	9,373.72	17,653.78	1,232,175.64
25	06-01-2017	27,027.50	9,241.32	17,786.18	1,214,389.46
26	09-01-2017	27,027.50	9,107.92	17,919.58	1,196,469.88
27	12-01-2017	27,027.50	8,973.53	18,053.97	1,178,415.91
2017 TOTALS:		**108,110.00**	**36,696.49**	**71,413.51**	
28	03-01-2018	27,027.50	8,838.11	18,189.39	1,160,226.52
29	06-01-2018	27,027.50	8,701.70	18,325.80	1,141,900.72
30	09-01-2018	27,027.50	8,564.26	18,463.24	1,123,437.48
31	12-01-2018	27,027.50	8,425.78	18,601.72	1,104,835.76
2018 TOTALS:		**108,110.00**	**34,529.85**	**73,580.15**	
32	03-01-2019	27,027.50	8,286.27	18,741.23	1,086,094.53
33	06-01-2019	27,027.50	8,145.71	18,881.79	1,067,212.74
34	09-01-2019	27,027.50	8,004.09	19,023.41	1,048,189.33
35	12-01-2019	27,027.50	7,861.42	19,166.08	1,029,023.25
2019 TOTALS:		**108,110.00**	**32,297.49**	**75,812.51**	
36	03-01-2020	27,027.50	7,717.68	19,309.82	1,009,713.43
37	06-01-2020	27,027.50	7,572.85	19,454.65	990,258.78
38	09-01-2020	27,027.50	7,426.94	19,600.56	970,658.22

** INTEREST PAID also includes Admin Surcharge amounts

AMORTIZATION SCHEDULE
(Continued)

39	12-01-2020	27,027.50	7,279.94	19,747.56	950,910.66
2020 TOTALS:		**108,110.00**	**29,997.41**	**78,112.59**	
40	03-01-2021	27,027.50	7,131.83	19,895.67	931,014.99
41	06-01-2021	27,027.50	6,982.61	20,044.89	910,970.10
42	09-01-2021	27,027.50	6,832.27	20,195.23	890,774.87
43	12-01-2021	27,027.50	6,680.82	20,346.68	870,428.19
2021 TOTALS:		**108,110.00**	**27,627.53**	**80,482.47**	
44	03-01-2022	27,027.50	6,528.21	20,499.29	849,928.90
45	06-01-2022	27,027.50	6,374.46	20,653.04	829,275.86
46	09-01-2022	27,027.50	6,219.57	20,807.93	808,467.93
47	12-01-2022	27,027.50	6,063.51	20,963.99	787,503.94
2022 TOTALS:		**108,110.00**	**25,185.75**	**82,924.25**	
48	03-01-2023	27,027.50	5,906.28	21,121.22	766,382.72
49	06-01-2023	27,027.50	5,747.87	21,279.63	745,103.09
50	09-01-2023	27,027.50	5,588.27	21,439.23	723,663.86
51	12-01-2023	27,027.50	5,427.48	21,600.02	702,063.84
2023 TOTALS:		**108,110.00**	**22,669.90**	**85,440.10**	
52	03-01-2024	27,027.50	5,265.48	21,762.02	680,301.82
53	06-01-2024	27,027.50	5,102.27	21,925.23	658,376.59
54	09-01-2024	27,027.50	4,937.82	22,089.68	636,286.91
55	12-01-2024	27,027.50	4,772.15	22,255.35	614,031.56
2024 TOTALS:		**108,110.00**	**20,077.72**	**88,032.28**	
56	03-01-2025	27,027.50	4,605.24	22,422.26	591,609.30
57	06-01-2025	27,027.50	4,437.07	22,590.43	569,018.87
58	09-01-2025	27,027.50	4,267.64	22,759.86	546,259.01
59	12-01-2025	27,027.50	4,096.94	22,930.56	523,328.45
2025 TOTALS:		**108,110.00**	**17,406.89**	**90,703.11**	
60	03-01-2026	27,027.50	3,924.97	23,102.53	500,225.92
61	06-01-2026	27,027.50	3,751.69	23,275.81	476,950.11
62	09-01-2026	27,027.50	3,577.13	23,450.37	453,499.74
63	12-01-2026	27,027.50	3,401.24	23,626.26	429,873.48
2026 TOTALS:		**108,110.00**	**14,655.03**	**93,454.97**	
64	03-01-2027	27,027.50	3,224.06	23,803.44	406,070.04
65	06-01-2027	27,027.50	3,045.52	23,981.98	382,088.06
66	09-01-2027	27,027.50	2,865.66	24,161.84	357,926.22
67	12-01-2027	27,027.50	2,684.45	24,343.05	333,583.17
2027 TOTALS:		**108,110.00**	**11,819.69**	**96,290.31**	
68	03-01-2028	27,027.50	2,501.87	24,525.63	309,057.54
69	06-01-2028	27,027.50	2,317.93	24,709.57	284,347.97
70	09-01-2028	27,027.50	2,132.61	24,894.89	259,453.08
71	12-01-2028	27,027.50	1,945.90	25,081.60	234,371.48
2028 TOTALS:		**108,110.00**	**8,898.31**	**99,211.69**	
72	03-01-2029	27,027.50	1,757.79	25,269.71	209,101.77
73	06-01-2029	27,027.50	1,568.26	25,459.24	183,642.53
74	09-01-2029	27,027.50	1,377.32	25,650.18	157,992.35
75	12-01-2029	27,027.50	1,184.94	25,842.56	132,149.79
2029 TOTALS:		**108,110.00**	**5,888.31**	**102,221.69**	
76	03-01-2030	27,027.50	991.13	26,036.37	106,113.42
77	06-01-2030	27,027.50	795.85	26,231.65	79,881.77
78	09-01-2030	27,027.50	599.11	26,428.39	53,453.38
79	12-01-2030	27,027.50	400.90	26,626.60	26,826.78
2030 TOTALS:		**108,110.00**	**2,786.99**	**105,323.01**	
80	03-01-2031	27,027.50	200.72	26,826.78	0.00
2031 TOTALS:		**27,027.50**	**200.72**	**26,826.78**	
TOTALS:		**2,162,200.00**	**540,700.00**	**1,621,500.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

SCHEDULE A
SCHEDULE OF AMOUNTS ADVANCED

City of Canton
Clean Water #C461039-03

DATE	ADVANCE	TOTAL AMT ADVANCED	NOTATION MADE BY
03/03/10	$94,237.00	$97,234.00	kw
03/03/10	187,076.00	284,310.00	kw
03/24/10	65,014.00	349,324.00	kw
03/24/10	125,087.00	474,411.00	kw
05/20/10	159,491.00	633,902.00	kw
05/27/10	215,957.00	849,859.00	kw
07/08/10	302,804.00	1,152,663.00	kw
07/22/10	131,337.00	1,284,000.00	kw
08/20/10	111,788.00	1,395,788.00	kw
10/13/10	317,756.00	1,713,544.00	kw
10/28/10	214,790.00	1,928,334.00	kw
11/22/10	123,142.00	2,051,476.00	kw
11/24/10	18,828.00	2,070,304.00	kw
12/17/10	333,893.00	2,404,197.00	kw
01/04/11	14,030.00	2,418,227.00	kw
01/26/11	43,773.00	2,462,000.00	kw
3-1-2011 Prin Forgiveness	(840,500.00)	1,621,500.00	kw

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$731,418.36		07-15-2044					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Canton - Clean Water #4

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
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PIERRE, SD

Principal Advance:	$731,418.36
Amount Financed:	$731,418.36
Finance Charge:	$408,561.33
APR:	3.2500%
Total Principal:	$731,418.36
Total Interest:	$408,561.33
Total of Payments:	$1,139,979.69

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Apr 15, 2015	Quarterly	117	$9,660.86
Regular Payment	Jul 15, 2044	Quarterly	1	$9,659.07

* Interest Payment also includes Admin Surcharge amounts

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
Jan 15, 2015	Beginning Balance					731,418.36
Apr 15, 2015	Regular Payment	9,660.86	9,660.86	3,718.08	5,942.78	727,700.28
Jul 15, 2015	Regular Payment	9,660.86	9,660.86	3,748.29	5,912.57	723,951.99
Oct 15, 2015	Regular Payment	9,660.86	9,660.86	3,778.75	5,882.11	720,173.24
2015 Totals		**28,982.58**	**28,982.58**	**11,245.12**	**17,737.46**	
Jan 15, 2016	Regular Payment	9,660.86	9,660.86	3,809.45	5,851.41	716,363.79
Apr 15, 2016	Regular Payment	9,660.86	9,660.86	3,840.40	5,820.46	712,523.39
Jul 15, 2016	Regular Payment	9,660.86	9,660.86	3,871.60	5,789.26	708,651.79
Oct 15, 2016	Regular Payment	9,660.86	9,660.86	3,903.06	5,757.80	704,748.73
2016 Totals		**38,643.44**	**38,643.44**	**15,424.51**	**23,218.93**	
Jan 15, 2017	Regular Payment	9,660.86	9,660.86	3,934.77	5,726.09	700,813.96
Apr 15, 2017	Regular Payment	9,660.86	9,660.86	3,966.74	5,694.12	696,847.22
Jul 15, 2017	Regular Payment	9,660.86	9,660.86	3,998.97	5,661.89	692,848.25
Oct 15, 2017	Regular Payment	9,660.86	9,660.86	4,031.46	5,629.40	688,816.79
2017 Totals		**38,643.44**	**38,643.44**	**15,931.94**	**22,711.50**	
Jan 15, 2018	Regular Payment	9,660.86	9,660.86	4,064.22	5,596.64	684,752.57
Apr 15, 2018	Regular Payment	9,660.86	9,660.86	4,097.24	5,563.62	680,655.33
Jul 15, 2018	Regular Payment	9,660.86	9,660.86	4,130.53	5,530.33	676,524.80
Oct 15, 2018	Regular Payment	9,660.86	9,660.86	4,164.09	5,496.77	672,360.71
2018 Totals		**38,643.44**	**38,643.44**	**16,456.08**	**22,187.36**	
Jan 15, 2019	Regular Payment	9,660.86	9,660.86	4,197.92	5,462.94	668,162.79
Apr 15, 2019	Regular Payment	9,660.86	9,660.86	4,232.03	5,428.83	663,930.76
Jul 15, 2019	Regular Payment	9,660.86	9,660.86	4,266.42	5,394.44	659,664.34
Oct 15, 2019	Regular Payment	9,660.86	9,660.86	4,301.08	5,359.78	655,363.26
2019 Totals		**38,643.44**	**38,643.44**	**16,997.45**	**21,645.99**	
Jan 15, 2020	Regular Payment	9,660.86	9,660.86	4,336.03	5,324.83	651,027.23
Apr 15, 2020	Regular Payment	9,660.86	9,660.86	4,371.26	5,289.60	646,655.97
Jul 15, 2020	Regular Payment	9,660.86	9,660.86	4,406.78	5,254.08	642,249.19
Oct 15, 2020	Regular Payment	9,660.86	9,660.86	4,442.58	5,218.28	637,806.61
2020 Totals		**38,643.44**	**38,643.44**	**17,556.65**	**21,086.79**	
Jan 15, 2021	Regular Payment	9,660.86	9,660.86	4,478.68	5,182.18	633,327.93
Apr 15, 2021	Regular Payment	9,660.86	9,660.86	4,515.07	5,145.79	628,812.86
Jul 15, 2021	Regular Payment	9,660.86	9,660.86	4,551.75	5,109.11	624,261.11
Oct 15, 2021	Regular Payment	9,660.86	9,660.86	4,588.73	5,072.13	619,672.38
2021 Totals		**38,643.44**	**38,643.44**	**18,134.23**	**20,509.21**	
Jan 15, 2022	Regular Payment	9,660.86	9,660.86	4,626.02	5,034.84	615,046.36
Apr 15, 2022	Regular Payment	9,660.86	9,660.86	4,663.60	4,997.26	610,382.76
Jul 15, 2022	Regular Payment	9,660.86	9,660.86	4,701.50	4,959.36	605,681.26
Oct 15, 2022	Regular Payment	9,660.86	9,660.86	4,739.69	4,921.17	600,941.57
2022 Totals		**38,643.44**	**38,643.44**	**18,730.81**	**19,912.63**	
Jan 15, 2023	Regular Payment	9,660.86	9,660.86	4,778.20	4,882.66	596,163.37

Apr 15, 2023	Regular Payment	9,660.86	9,660.86	4,817.03	4,843.83	591,346.34
Jul 15, 2023	Regular Payment	9,660.86	9,660.86	4,856.17	4,804.69	586,490.17
Oct 15, 2023	Regular Payment	9,660.86	9,660.86	4,895.62	4,765.24	581,594.55
2023 Totals		**38,643.44**	**38,643.44**	**19,347.02**	**19,296.42**	
Jan 15, 2024	Regular Payment	9,660.86	9,660.86	4,935.40	4,725.46	576,659.15
Apr 15, 2024	Regular Payment	9,660.86	9,660.86	4,975.50	4,685.36	571,683.65
Jul 15, 2024	Regular Payment	9,660.86	9,660.86	5,015.93	4,644.93	566,667.72
Oct 15, 2024	Regular Payment	9,660.86	9,660.86	5,056.68	4,604.18	561,611.04
2024 Totals		**38,643.44**	**38,643.44**	**19,983.51**	**18,659.93**	
Jan 15, 2025	Regular Payment	9,660.86	9,660.86	5,097.77	4,563.09	556,513.27
Apr 15, 2025	Regular Payment	9,660.86	9,660.86	5,139.18	4,521.68	551,374.09
Jul 15, 2025	Regular Payment	9,660.86	9,660.86	5,180.94	4,479.92	546,193.15
Oct 15, 2025	Regular Payment	9,660.86	9,660.86	5,223.04	4,437.82	540,970.11
2025 Totals		**38,643.44**	**38,643.44**	**20,640.93**	**18,002.51**	
Jan 15, 2026	Regular Payment	9,660.86	9,660.86	5,265.47	4,395.39	535,704.64
Apr 15, 2026	Regular Payment	9,660.86	9,660.86	5,308.25	4,352.61	530,396.39
Jul 15, 2026	Regular Payment	9,660.86	9,660.86	5,351.38	4,309.48	525,045.01
Oct 15, 2026	Regular Payment	9,660.86	9,660.86	5,394.86	4,266.00	519,650.15
2026 Totals		**38,643.44**	**38,643.44**	**21,319.96**	**17,323.48**	
Jan 15, 2027	Regular Payment	9,660.86	9,660.86	5,438.70	4,222.16	514,211.45
Apr 15, 2027	Regular Payment	9,660.86	9,660.86	5,482.89	4,177.97	508,728.56
Jul 15, 2027	Regular Payment	9,660.86	9,660.86	5,527.44	4,133.42	503,201.12
Oct 15, 2027	Regular Payment	9,660.86	9,660.86	5,572.35	4,088.51	497,628.77
2027 Totals		**38,643.44**	**38,643.44**	**22,021.38**	**16,622.06**	
Jan 15, 2028	Regular Payment	9,660.86	9,660.86	5,617.62	4,043.24	492,011.15
Apr 15, 2028	Regular Payment	9,660.86	9,660.86	5,663.26	3,997.60	486,347.89
Jul 15, 2028	Regular Payment	9,660.86	9,660.86	5,709.28	3,951.58	480,638.61
Oct 15, 2028	Regular Payment	9,660.86	9,660.86	5,755.67	3,905.19	474,882.94
2028 Totals		**38,643.44**	**38,643.44**	**22,745.83**	**15,897.61**	
Jan 15, 2029	Regular Payment	9,660.86	9,660.86	5,802.43	3,858.43	469,080.51
Apr 15, 2029	Regular Payment	9,660.86	9,660.86	5,849.58	3,811.28	463,230.93
Jul 15, 2029	Regular Payment	9,660.86	9,660.86	5,897.10	3,763.76	457,333.83
Oct 15, 2029	Regular Payment	9,660.86	9,660.86	5,945.02	3,715.84	451,388.81
2029 Totals		**38,643.44**	**38,643.44**	**23,494.13**	**15,149.31**	
Jan 15, 2030	Regular Payment	9,660.86	9,660.86	5,993.32	3,667.54	445,395.49
Apr 15, 2030	Regular Payment	9,660.86	9,660.86	6,042.02	3,618.84	439,353.47
Jul 15, 2030	Regular Payment	9,660.86	9,660.86	6,091.11	3,569.75	433,262.36
Oct 15, 2030	Regular Payment	9,660.86	9,660.86	6,140.60	3,520.26	427,121.76
2030 Totals		**38,643.44**	**38,643.44**	**24,267.05**	**14,376.39**	
Jan 15, 2031	Regular Payment	9,660.86	9,660.86	6,190.49	3,470.37	420,931.27
Apr 15, 2031	Regular Payment	9,660.86	9,660.86	6,240.79	3,420.07	414,690.48
Jul 15, 2031	Regular Payment	9,660.86	9,660.86	6,291.49	3,369.37	408,398.99

Oct 15, 2031	Regular Payment	9,660.86	9,660.86	6,342.61	3,318.25	402,056.38
2031 Totals		**38,643.44**	**38,643.44**	**25,065.38**	**13,578.06**	
Jan 15, 2032	Regular Payment	9,660.86	9,660.86	6,394.15	3,266.71	395,662.23
Apr 15, 2032	Regular Payment	9,660.86	9,660.86	6,446.10	3,214.76	389,216.13
Jul 15, 2032	Regular Payment	9,660.86	9,660.86	6,498.47	3,162.39	382,717.66
Oct 15, 2032	Regular Payment	9,660.86	9,660.86	6,551.27	3,109.59	376,166.39
2032 Totals		**38,643.44**	**38,643.44**	**25,889.99**	**12,753.45**	
Jan 15, 2033	Regular Payment	9,660.86	9,660.86	6,604.50	3,056.36	369,561.89
Apr 15, 2033	Regular Payment	9,660.86	9,660.86	6,658.16	3,002.70	362,903.73
Jul 15, 2033	Regular Payment	9,660.86	9,660.86	6,712.26	2,948.60	356,191.47
Oct 15, 2033	Regular Payment	9,660.86	9,660.86	6,766.80	2,894.06	349,424.67
2033 Totals		**38,643.44**	**38,643.44**	**26,741.72**	**11,901.72**	
Jan 15, 2034	Regular Payment	9,660.86	9,660.86	6,821.78	2,839.08	342,602.89
Apr 15, 2034	Regular Payment	9,660.86	9,660.86	6,877.21	2,783.65	335,725.68
Jul 15, 2034	Regular Payment	9,660.86	9,660.86	6,933.08	2,727.78	328,792.60
Oct 15, 2034	Regular Payment	9,660.86	9,660.86	6,989.42	2,671.44	321,803.18
2034 Totals		**38,643.44**	**38,643.44**	**27,621.49**	**11,021.95**	
Jan 15, 2035	Regular Payment	9,660.86	9,660.86	7,046.20	2,614.66	314,756.98
Apr 15, 2035	Regular Payment	9,660.86	9,660.86	7,103.45	2,557.41	307,653.53
Jul 15, 2035	Regular Payment	9,660.86	9,660.86	7,161.17	2,499.69	300,492.36
Oct 15, 2035	Regular Payment	9,660.86	9,660.86	7,219.35	2,441.51	293,273.01
2035 Totals		**38,643.44**	**38,643.44**	**28,530.17**	**10,113.27**	
Jan 15, 2036	Regular Payment	9,660.86	9,660.86	7,278.01	2,382.85	285,995.00
Apr 15, 2036	Regular Payment	9,660.86	9,660.86	7,337.15	2,323.71	278,657.85
Jul 15, 2036	Regular Payment	9,660.86	9,660.86	7,396.76	2,264.10	271,261.09
Oct 15, 2036	Regular Payment	9,660.86	9,660.86	7,456.86	2,204.00	263,804.23
2036 Totals		**38,643.44**	**38,643.44**	**29,468.78**	**9,174.66**	
Jan 15, 2037	Regular Payment	9,660.86	9,660.86	7,517.45	2,143.41	256,286.78
Apr 15, 2037	Regular Payment	9,660.86	9,660.86	7,578.52	2,082.34	248,708.26
Jul 15, 2037	Regular Payment	9,660.86	9,660.86	7,640.10	2,020.76	241,068.16
Oct 15, 2037	Regular Payment	9,660.86	9,660.86	7,702.18	1,958.68	233,365.98
2037 Totals		**38,643.44**	**38,643.44**	**30,438.25**	**8,205.19**	
Jan 15, 2038	Regular Payment	9,660.86	9,660.86	7,764.76	1,896.10	225,601.22
Apr 15, 2038	Regular Payment	9,660.86	9,660.86	7,827.85	1,833.01	217,773.37
Jul 15, 2038	Regular Payment	9,660.86	9,660.86	7,891.45	1,769.41	209,881.92
Oct 15, 2038	Regular Payment	9,660.86	9,660.86	7,955.56	1,705.30	201,926.36
2038 Totals		**38,643.44**	**38,643.44**	**31,439.62**	**7,203.82**	
Jan 15, 2039	Regular Payment	9,660.86	9,660.86	8,020.20	1,640.66	193,906.16
Apr 15, 2039	Regular Payment	9,660.86	9,660.86	8,085.37	1,575.49	185,820.79
Jul 15, 2039	Regular Payment	9,660.86	9,660.86	8,151.06	1,509.80	177,669.73
Oct 15, 2039	Regular Payment	9,660.86	9,660.86	8,217.29	1,443.57	169,452.44
2039 Totals		**38,643.44**	**38,643.44**	**32,473.92**	**6,169.52**	
Jan 15, 2040	Regular Payment	9,660.86	9,660.86	8,284.05	1,376.81	161,168.39

Apr 15, 2040	Regular Payment	9,660.86	9,660.86	8,351.36	1,309.50	152,817.03
Jul 15, 2040	Regular Payment	9,660.86	9,660.86	8,419.22	1,241.64	144,397.81
Oct 15, 2040	Regular Payment	9,660.86	9,660.86	8,487.62	1,173.24	135,910.19
2040 Totals		**38,643.44**	**38,643.44**	**33,542.25**	**5,101.19**	
Jan 15, 2041	Regular Payment	9,660.86	9,660.86	8,556.58	1,104.28	127,353.61
Apr 15, 2041	Regular Payment	9,660.86	9,660.86	8,626.11	1,034.75	118,727.50
Jul 15, 2041	Regular Payment	9,660.86	9,660.86	8,696.19	964.67	110,031.31
Oct 15, 2041	Regular Payment	9,660.86	9,660.86	8,766.85	894.01	101,264.46
2041 Totals		**38,643.44**	**38,643.44**	**34,645.73**	**3,997.71**	
Jan 15, 2042	Regular Payment	9,660.86	9,660.86	8,838.08	822.78	92,426.38
Apr 15, 2042	Regular Payment	9,660.86	9,660.86	8,909.89	750.97	83,516.49
Jul 15, 2042	Regular Payment	9,660.86	9,660.86	8,982.28	678.58	74,534.21
Oct 15, 2042	Regular Payment	9,660.86	9,660.86	9,055.26	605.60	65,478.95
2042 Totals		**38,643.44**	**38,643.44**	**35,785.51**	**2,857.93**	
Jan 15, 2043	Regular Payment	9,660.86	9,660.86	9,128.84	532.02	56,350.11
Apr 15, 2043	Regular Payment	9,660.86	9,660.86	9,203.01	457.85	47,147.10
Jul 15, 2043	Regular Payment	9,660.86	9,660.86	9,277.78	383.08	37,869.32
Oct 15, 2043	Regular Payment	9,660.86	9,660.86	9,353.17	307.69	28,516.15
2043 Totals		**38,643.44**	**38,643.44**	**36,962.80**	**1,680.64**	
Jan 15, 2044	Regular Payment	9,660.86	9,660.86	9,429.16	231.70	19,086.99
Apr 15, 2044	Regular Payment	9,660.86	9,660.86	9,505.77	155.09	9,581.22
Jul 15, 2044	Regular Payment	9,659.07	9,659.07	9,581.22	77.85	
2044 Totals		**28,980.79**	**28,980.79**	**28,516.15**	**464.64**	
Grand Total		**1,139,979.69**	**1,139,979.69**	**731,418.36**	**408,561.33**	

Canton

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2014 Annual Financial Report

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MUNICIPALITY OF CANTON
STATEMENT OF NET POSITION
December 31, 2014

	Primary Government			
	Governmental Activities	Business-Type Activities	Total	Component Unit
ASSETS:				
Cash and Cash Equivalents	$ 2,752,202.61	$ 2,142,423.29	$ 4,894,625.90	$ 86,673.17
Investments	511,750.11	-	511,750.11	182,945.65
Taxes Receivable	40,053.27		40,053.27	
Accounts Receivable, Net	65,003.21	230,878.41	295,881.62	5,053.26
Inventories	104,917.15	152,073.91	256,991.06	
Other Assets	24,733.23	5,370.77	30,104.00	1,531.00
Restricted Assets:				-
Deposits	67,416.39	-	67,416.39	
Capital Assets:				
Land, Improvements and Construction				25,811.20
Work in Progress	536,766.97	116,844.36	653,611.33	
Other Capital Assets, Net of Depreciation	4,270,136.23	10,169,249.44	14,439,385.67	176,720.17
TOTAL ASSETS	8,372,979.17	12,816,840.18	21,189,819.35	478,734.45
LIABILITIES :				
Accounts Payable	49,738.13	161,923.45	211,661.58	3,119.91
Other Current Liabilities	34,825.42	70,963.58	105,789.00	24,196.25
Noncurrent Liabilities:				
Due Within One Year	47,026.98	139,397.01	186,423.99	-
Due in More than One Year	107,514.66	2,637,737.49	2,745,252.15	6,825.82
TOTAL LIABILITIES	239,105.19	3,010,021.53	3,249,126.72	34,141.98
NET POSITION:				
Net Investment in Capital Assets	4,797,421.31	7,517,046.46	12,314,467.77	202,531.37
Restricted for:				
Special Revenue	106,288.28		106,288.28	27,979.46
Debt Service	-	-	-	
Unspendable	1,836,062.81		1,836,062.81	
Unassigned (Deficit)	1,394,101.58		1,394,101.58	214,081.64
Unrestricted (Deficit)	-	2,289,772.19	2,289,772.19	-
TOTAL NET POSITION	$ 8,133,873.98	$ 9,806,818.65	$17,940,692.63	$ 444,592.47

MUNICIPALITY OF CANTON
STATEMENT OF ACTIVITIES
For the Year Ended December 31, 2014

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Position — Primary Government: Governmental Activities	Primary Government: Business-Type Activities	Primary Government: Total	Component Unit
Primary Government:								
Governmental Activities:								
General Government	$ 533,721.72	$ 262,728.94			$ (270,992.78)	$	$ (270,992.78)	
Public Safety	542,240.25	2,832.35	976.50		$ (538,431.40)		(538,431.40)	
Public Works	763,291.28	17,814.20	146,037.49	351,444.28	$ (247,995.31)		(247,995.31)	
Health and Welfare	24,008.67	1,500.00	3,130.00		$ (19,378.67)		(19,378.67)	
Culture and Recreation	474,168.08	47,215.03			$ (426,953.05)		(426,953.05)	
Conservation and Development	34,360.00				$ (34,360.00)		(34,360.00)	
Miscellaneous		32,217.90			$ 32,217.90		32,217.90	
*Interest on Long-term Debt	375.90				(375.90)		(375.90)	
Total Governmental Activities	2,372,165.90	364,308.42	150,143.99	351,444.28	(1,506,269.21)		(1,506,269.21)	
Business-type Activities:								
Liquor	831,346.79	829,560.04				(1,786.75)	(1,786.75)	
Water	560,045.62	548,069.87		190,840.71		178,864.96	178,864.96	
Sewer	1,025,426.96	705,530.14		64,794.65		(255,102.17)	(255,102.17)	
Airport	129,163.40	43,748.90		13,803.15		(71,611.35)	(71,611.35)	
Total Business-type Activities	2,545,982.77	2,126,908.95	-	269,438.51		(149,635.31)	(149,635.31)	
Total Primary Government	$ 4,918,148.67	$ 2,491,217.37	$ 150,143.99	$ 620,882.79	(1,506,269.21)	(149,635.31)	(1,655,904.52)	
Component Unit:								
Housing & Redevelopment Comm	422,227.78	75,065.80	306,184.00	-				(40,977.98)

MUNICIPALITY OF CANTON
STATEMENT OF ACTIVITIES
For the Year Ended December 31, 2014

	Net (Expense) Revenue and Changes in Net Assets			
	Primary Government			
	Governmental Activities	Business-Type Activities	Total	Component Unit
Total Primary Government	(1,506,269.21)	(149,635.31)	(1,655,904.52)	(40,977.98)
General Revenues:				
Taxes:				
Property Taxes	1,171,833.34		1,171,833.34	
Sales Taxes	1,013,991.02		1,013,991.02	
State Shared Revenues	34,619.99	-	34,619.99	
Unrestricted Investment Earnings	18,308.10	3,548.57	21,856.67	
Miscellaneous Revenue	85,189.09		85,189.09	17,379.47
Transfers Net	74,000.00	(74,000.00)	-	-
Total General Revenues and Interest Expense	2,397,941.54	(70,451.43)	2,327,490.11	17,379.47
Change in Net Position	891,672.33	(220,086.74)	671,585.59	(23,598.51)
Net Position-Beginning	7,242,201.65	10,026,905.39	17,269,107.04	468,645.98
Prior Period Adjustment				(455.00)
NET Position - ENDING	$ 8,133,873.98	$ 9,806,818.65	$ 17,940,692.63	$ 444,592.47

* The Municipality does not have interest expense related to the functions presented above. The amount includes indirect interest expense on general long-term debt.

MUNICIPALITY OF CANTON
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2014

	Major Funds				Non-Major	
	General Fund	BBB Sales Tax Fund				Total Governmental Funds
ASSETS:						
Cash and Cash Equivalents	$2,658,721.31	$ 82,709.62			$10,771.68	$2,752,202.61
Taxes Receivable--Delinquent	40,053.27					40,053.27
Special Assessments Receivable--Current						-
Special Assessments Receivable--Deferred						-
Accounts Receivable	63,946.34	1,047.29			9.58	65,003.21
Due from Other Fund						
Inventory	104,917.15					104,917.15
Investments	500,000.00				11,750.11	511,750.11
Prepaid Exp	24,733.23					24,733.23
Deposits	67,416.39					67,416.39
TOTAL ASSETS	$3,459,787.69	$ 83,756.91	$ -	$ -	$22,531.37	$3,566,075.97
LIABILITIES AND FUND BALANCES:						
Liabilities:						
Accounts Payable	$ 49,738.13					$ 49,738.13
Accrued Wages Payable	34,050.42					34,050.42
Due to Other Fund						
Deposits	775.00	-	-	-	-	775.00
Total Liabilities	84,563.55	-	-	-	-	84,563.55
Deferred Inflows of Resources:						
Unavailable Revenue: Property Taxes	40,053.27					40,053.27
Unavailable Revenue: Special Assessments	-	-	-	-	-	-
Total Deferred Inflows of Resources	40,053.27	-	-	-	-	40,053.27
Fund Balances:						
Nonspendable For:						
Next Years Budget	738,226.00					738,226.00
Inventory	104,917.15					104,917.15
Library, Pool & Trail	171,729.27					171,729.27
Fire Equipment	45,000.00		-			45,000.00
Capital Improvement & Dak St	1,074,000.00					1,074,000.00
Equipment	373,000.00					373,000.00
Unassigned Fund Balances:	828,298.45	$ 83,756.91		$ -	22,531.37	934,586.73
Total Fund Balances	3,335,170.87	83,756.91	-	-	22,531.37	3,441,459.15
TOTAL LIABILITIES AND FUND BALANCES	$3,459,787.69	$ 83,756.91	$ -	$ -	$22,531.37	$3,566,075.97

MUNICIPALITY OF CANTON
Reconciliation of the Governmental Funds Balance Sheet to the Statement of Net Position
December 31, 2014

Total Fund Balances - Governmental Funds	$ 3,441,459.15
Amounts reported for governmental activities in the statement of net position are different because:	
Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds.	4,806,903.20
Long-term liabilities, including bonds payable and accrued leave payable are not due and payable in the current period and therefore are not reported in the funds.	(154,541.64)
Assets such as taxes receivable (delinquent) and special assessments receivables (current, delinquent and deferred) are not available to pay for current period expenditures and therefore are deferred in the funds.	40,053.27
Net Position- Governmental Funds	$ 8,133,873.98

MUNICIPALITY OF CANTON
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Major Funds				Nonmajor	
	General Fund	BBB Sales Tax Fund			Special Revenue Fund	Total Governmental Funds
Revenues:						
Taxes:						
General Property Taxes	$ 1,181,697.94					$ 1,181,697.94
General Sales and Use Taxes	963,330.70	$ 50,660.32				1,013,991.02
Penalties and Interest on Delinquent Taxes						-
Licenses and Permits	32,217.90					32,217.90
Intergovernmental Revenue:						
Grants	170,788.15					170,788.15
State Shared Revenue:						
Liquor Tax Reversion	19,930.21					19,930.21
Motor Vehicle Licenses (5%)	17,718.09					17,718.09
Local Government Highway and Bridge Fund	67,942.68					67,942.68
Bank Franchise Tax	14,689.78					14,689.78
County Shared Revenue:						
County Wheel Tax	16,795.64					16,795.64
Charges for Goods and Services:						
General Government	262,728.94					262,728.94
Public Safety	1,712.00					1,712.00
Highways and Streets	6,103.80					6,103.80
Sanitation	11,710.40					11,710.40
Health	1,500.00					1,500.00
Culture and Recreation	35,932.62				11,282.41	47,215.03
Fines and Forfeits:						
Court Fines and Costs	1,120.35					1,120.35
Miscellaneous Revenue:						
Investment Earnings	18,308.10					18,308.10
Special Assessment Revenue						-
Contributions and Donations from Private Sources	8,624.43					8,624.43
Other	79,564.66					79,564.66
Transfers	100,000.00					100,000.00
Total Revenue	3,012,416.39	50,660.32	-		11,282.41	3,074,359.12

MUNICIPALITY OF CANTON
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Major Funds		Nonmajor	
	General Fund	BBB Sales Tax Fund	Special Revenue Fund	Total Governmental Funds
Expenditures:				
General Government:				
Legislative	17,439.06			17,439.06
Executive	198,668.94			198,668.94
Elections	1,946.21			1,946.21
Financial Administration	181,099.98			181,099.98
City Attorney	13,494.44			13,494.44
Other	84,112.65			84,112.65
Total General Government	496,761.28			496,761.28
Public Safety:				
Police	424,607.79			424,607.79
Fire	72,695.59			72,695.59
Total Public Safety	497,303.38			497,303.38
Public Works:				
Highways and Streets	561,923.53			561,923.53
Sanitation	100,382.10	-		100,382.10
Total Public Works	662,305.63	-		662,305.63
Health and Welfare				
Health & Welfare	24,008.67			24,008.67
Total Health and Welfare	24,008.67			24,008.67
Culture and Recreation:				
Recreation	142,775.09			142,775.09
Parks	169,091.40			169,091.40
Libraries	107,573.75		10,816.25	118,390.00
Total Culture and Recreation	419,440.24		10,816.25	430,256.49

MUNICIPALITY OF CANTON
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Major Funds				Nonmajor	
	General Fund	BBB Sales Tax Fund			Special Revenue Fund	Total Governmental Funds
Conservation and Development:						
Economic Development and Assistance (Industrial Development)	17,080.00	17,280.00				34,360.00
Debt Service	3,600.21					3,600.21
Transfers	26,000.00					26,000.00
Capital Outlay	1,015,606.11					1,015,606.11
Total Expenditures	3,162,105.52	17,280.00		-	10,816.25	3,190,201.77
Excess of Revenue Over (Under) Expenditures	(149,689.13)	33,380.32	-	-	466.16	(115,842.65)
Net Change in Fund Balances	(149,689.13)	33,380.32	-	-	466.16	(115,842.65)
Fund Balance - Beginning	3,484,860.00	50,376.59			22,065.21	3,557,301.80
ADJ to Beginning F/B*						-
FUND BALANCE- ENDING	$ 3,335,170.87	$ 83,756.91	$ -	$ -	$ 22,531.37	$ 3,441,459.15

Foot Notes *

MUNICIPALITY OF CANTON
Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances to the Government-Wide Statement of Activities
For the Year Ended December 31, 2014

Net Change in Fund Balances - Total Governmental Funds	$ (115,842.65)
Amounts reported for governmental activities in the statement of activities are different because:	
Governmental funds report capital outlays as expenditures. However, in the statement of activities the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which capital outlay exceeded depreciation in the current period.	1,066,344.09
In the statement of activities, the loss on disposal of assets is reported, whereas in the Governmental funds, the disposal of fixed assets in not reflected.	(37,628.84)
Repayment of bond principal is an expenditure in the governmental funds, but the repayment reduces long-term liabilities in the statement of net assets.	3,224.31
Governmental funds do not reflect the change in accrued leave, but the Statement of Activities reflects the change in accrued leave through expenditures.	198.20
Issuing of financing sources are recorded as revenue in the governmental funds, as opposed to an increase in liabilities in the statement of Activities	(3,000.00)
Governmental funds do not reflect the change in OPEB, but the Statement of Activities reflects the change in OPEB through expenditures.	(11,758.18)
Governmental funds report property taxes as revenue when they meet the available criteria. Because some property taxes will not be collected for several months after the district's fiscal year ends, they are not considered "available" revenues and are deferred in the governmental funds. Deferred tax revenues decreased by this amount this year.	(9,864.60)
Change in Net Position of Governmental Activities	$ 891,672.33

MUNICIPALITY OF CANTON
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Sewer Fund	Airport Fund	Total
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	295,062.76	$ 845,190.57	$ 898,454.70	$ 103,715.26	2,142,423.29
Cash with Fiscal Agent					-
Investments					-
Accounts Receivable, Net	70,194.65	52,371.30	108,312.46	-	230,878.41
Notes Receivable					-
Prepaid Exp		2,959.49	2,411.28		5,370.77
Inventory	-	122,212.73	20,111.43	9,749.75	152,073.91
Total Current Assets	365,257.41	1,022,734.09	1,029,289.87	113,465.01	2,530,746.38
Noncurrent Assets:					
Deposits					-
Capital Assets:					
Land		10,000.00	37,990.11	68,854.25	116,844.36
Buildings		20,602.52	363,592.58		384,195.10
Improvements Other Than Buildings		3,577,247.88	5,374,201.14	2,688,106.00	11,639,555.02
Machinery and Equipment		282,014.77	304,954.06	65,914.00	652,882.83
Construction Work in Progress			819,262.15	-	819,262.15
Less: Accumulated Depreciation	-	(1,429,545.46)	(1,713,354.39)	(183,745.81)	(3,326,645.66)
Total Noncurrent Assets	-	2,460,319.71	5,186,645.65	2,639,128.44	10,286,093.80
TOTAL ASSETS	365,257.41	3,483,053.80	6,215,935.52	2,752,593.45	12,816,840.18

See Accountant's Compilation Report

MUNICIPALITY OF CANTON
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Sewer Fund	Airport Fund	Total
LIABILITIES:					
Current Liabilities:					
Accounts Payable	$ 71,997.08	$ 3,531.33	$ 81,647.60	$ 4,747.44	$ 161,923.45
Accrued Wages Payable		3,347.38	3,321.40		6,668.78
Due to Other Fund					-
Customer Deposits		64,294.80			64,294.80
Other Long Term Debt Current		27,947.89	111,449.12		139,397.01
Total Current Liabilities	71,997.08	99,121.40	196,418.12	4,747.44	372,284.04
Noncurrent Liabilities:					
Accrued Leave Payable		5,366.61	2,720.55		8,087.16
Other Long-Term Debt		268,350.92	2,361,299.41		2,629,650.33
Total Noncurrent Liabilities	-	273,717.53	2,364,019.96		2,637,737.49
NET POSITION:					
Net Investment in Capital Assets	-	2,164,020.90	2,713,897.12	2,639,128.44	7,517,046.46
Restricted for:					
Deposits		-			-
Debt Service		-	-		-
Unrestricted	293,260.33	946,193.97	941,600.32	108,717.57	2,289,772.19
Total Net Position	293,260.33	3,110,214.87	3,655,497.44	2,747,846.01	9,806,818.65

MUNICIPALITY OF CANTON
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Sewer Fund	Airport Fund	Total
Operating Revenue:					
Charges for Goods and Services	$824,451.02	$ 548,069.87	$ 705,530.14	$ 43,748.90	$ 2,121,799.93
Lottery Sales	5,109.02				5,109.02
Total Operating Revenue	829,560.04	548,069.87	705,530.14	43,748.90	2,126,908.95
Operating Expenses:					
Personal Services		126,517.44	122,416.96		248,934.40
Other Current Expense	30,014.26	325,277.78	706,508.67	71,633.01	1,133,433.72
Materials (Cost of Goods Sold)	801,332.53				801,332.53
Depreciation		97,455.60	139,643.64	57,530.39	294,629.63
Total Operating Expenses	831,346.79	549,250.82	968,569.27	129,163.40	2,478,330.28
Operating Income (Loss)	(1,786.75)	(1,180.95)	(263,039.13)	(85,414.50)	(351,421.33)
Nonoperating Revenue (Expense):					
Federal Grant/Contributions		190,840.71	64,794.65	13,803.15	269,438.51
State Grant					-
Investment Earnings		3,522.55	26.02		3,548.57
Miscellaneous Revenue					-
Transfer In (out)	(100,000.00)			26,000.00	(74,000.00)
Interest Expense and Fiscal Charges		(10,794.80)	(56,857.69)		(67,652.49)
Total Nonoperating Revenue (Expense)	(100,000.00)	183,568.46	7,962.98	39,803.15	131,334.59
Change in Net Position	(101,786.75)	182,387.51	(255,076.15)	(45,611.35)	(220,086.74)
Net Position - Beginning	395,047.08	2,927,827.36	3,910,573.59	2,793,457.36	10,026,905.39
* Beginning N/P Adjustment					-
NET POSITION - ENDING	$293,260.33	$3,110,214.87	$3,655,497.44	$ 2,747,846.01	$ 9,806,818.65

MUNICIPALITY OF CANTON
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Sewer Fund	Airport Fund	Total
CASH FLOWS FROM OPERATING ACTIVITIES:					
Cash Receipts from Customers	$ 848,046.66	$ 554,617.14	$ 738,108.17	$ 44,620.86	$ 2,185,392.83
Cash Payments to Employees for Services	-	(128,416.42)	(126,482.39)	-	(254,898.81)
Payments from/to other Funds					$ -
Cash Payments to Suppliers of Goods and Services	(818,912.69)	(325,538.90)	(640,263.84)	(68,647.32)	(1,853,362.75)
Net Cash Provided (Used) by Operating Activities	29,133.97	100,661.82	(28,638.06)	(24,026.46)	77,131.27
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:					
Purchase of Capital Assets		(246,450.19)	(1,054,059.75)		(1,300,509.94)
Loss on Disposition of FA	11,466.88		22,110.89		33,577.77
Proceeds from Capital Debt/Contributions		190,840.71	64,794.65	13,803.15	269,438.51
Principal Paid on Capital Debt		(21,093.48)	581,740.06		560,646.58
Interest Paid on Capital Debt		(10,794.80)	(56,857.69)		(67,652.49)
Other Receipts/Transfers	(100,000.00)			26,000.00	(74,000.00)
Net Cash (Used) by Capital and Related Financing Activities	(88,533.12)	(87,497.76)	(442,271.84)	39,803.15	(578,499.57)
CASH FLOWS FROM INVESTING ACTIVITIES:					
Interest Earnings		3,522.55	26.02		3,548.57
Net Cash Provided by Investing Activities		3,522.55	26.02		3,548.57
Net Increase (Decrease) in Cash and Cash Equivalents	$ (59,399.15)	$ 16,686.61	$ (470,883.88)	$ 15,776.69	$ (497,819.73)

Cash and Cash Equivalents at Beginning of Year	$ 354,461.91	$ 828,503.96	$ 1,369,338.58	$ 87,938.57	$ 2,640,243.02
Cash and Cash Equivalents at End of Year	295,062.76	845,190.57	898,454.70	103,715.26	2,142,423.29
Net Increase (Decrease) in Cash and Cash Equivalents	$ (59,399.15)	$ 16,686.61	$ (470,883.88)	$ 15,776.69	$ (497,819.73)
RECONCILIATION OF OPERATING INCOME (LOSS) TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES:					
Operating Income (Loss)	$ (1,786.75)	$ (1,180.95)	$ (263,039.13)	$ (85,414.50)	$ (351,421.33)
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities:					
Depreciation/Amortization Expense	-	97,455.60	139,643.64	57,530.39	294,629.63
Change in Assets and Liabilities:					
Accounts and Other Receivables	18,486.62	6,547.27	32,578.03	871.96	58,483.88
Inventories	-	5,729.45	(340.91)	(1,609.75)	3,778.79
Accounts and Other Payables	12,434.10	(9,288.50)	66,585.74	4,595.44	74,326.78
Accrued Wages Payable	-	(30.43)	410.00	-	379.57
Accrued Leave Payable	-	(1,868.55)	(4,475.43)	-	(6,343.98)
Customer Deposits		3,297.93			3,297.93
Net Cash Provided (Used) by Operating Activities	$ 29,133.97	$ 100,661.82	$ (28,638.06)	$ (24,026.46)	$ 77,131.27

1. Summary of Significant Accounting Policies

a. Financial Reporting Entity:

The reporting entity of the Municipality of Canton consists of the primary government (which includes all of the funds, organizations, institutions, agencies, departments, and offices that make up the legal entity); those organizations for which the primary government is financially accountable; and other organizations for which the nature and significance of their relationship with the primary government are such that their exclusion would cause the financial reporting entity's financial statements to be misleading or incomplete.

Component units are legally separate organizations for which the elected officials of the primary government are financially accountable. The Municipality is financially accountable if its Governing Board appoints a voting majority of another organization's governing body and it has the ability to impose its will on that organization, or there is a potential for that organization to provide specific financial benefits to, or impose specific financial burdens on, the Municipality (primary government). The Municipality may also be financially accountable for another organization if that organization is fiscally dependent on the Municipality.

The Canton Housing and Redevelopment Commission is a proprietary fund-type, component unit and its financial statements have not been included in that of the primary government. The five members of the Commission are appointed by the Mayor, with the approval of the Governing Board. The Commission elects its own chairperson. The Governing Board, though, retains the statutory authority to approve or deny or otherwise modify the Commission's plans to construct low-income housing units, or to issue debt, which gives the Governing Board the ability to impose its will on the Commission. Separately issued financial statements of the Canton Housing and Redevelopment Commission may be obtained from the Canton Housing and Redevelopment Commission, 903 West Fifth, Canton, SD 57013.

b. Basis of Presentation:

Government-wide Financial Statements:

The Statement of Net Position and Statement of Activities display information about the reporting entity as a whole. They include all funds of the reporting entity, except for fiduciary funds. The statements distinguish between governmental and business-type activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange revenues. Business-type activities are financed in whole or in part by fees charged to external parties for goods or services.

The statement of activities presents a comparison between direct expenses and program revenues for each segment of the business-type activities of the Municipality and for each function of the Municipality's governmental activities. Direct expenses are those that are specifically associated with a program or function and, therefore, are clearly identifiable to a particular function. Program revenues include (a) charges paid by recipients of goods and services offered by the programs and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues that are not classified as program revenues, including all taxes, are presented as general revenues.

Fund Financial Statements:

Fund financial statements of the reporting entity are organized into funds, each of which is considered to be a separate accounting entity. Each fund is accounted for by providing a separate set of self-balancing accounts that constitute its assets, liabilities, fund equity, revenues, and expenditures/expenses. Funds are organized into three major categories: governmental, proprietary, and fiduciary. An emphasis is placed on major funds within the governmental and proprietary categories. A fund is considered major if it is the primary operating fund of the Municipality or it meets the following criteria:

- Total assets, liabilities, revenues, or expenditures/expenses of the individual governmental or enterprise fund are at least 10 percent of the corresponding total for all funds of that category or type, and

- Total assets, liabilities, revenues, or expenditures/expenses of the individual governmental or enterprise fund are at least 5 percent of the corresponding total for all governmental and enterprise funds combined, or

- Management has elected to classify one or more governmental or enterprise funds as major for consistency in reporting from year to year, or because of public interest in the fund's operations.

The funds of the Municipality financial reporting entity are described below:

Governmental Funds:

General Fund – the General Fund is the general operating fund of the Municipality. It is used to account for all financial resources except those required to be accounted for in another fund. The General Fund is always considered to be a major fund.

Special Revenue Funds – special revenue funds are used to account for the proceeds of specific revenue sources (other than trusts for individuals, private organizations, or other governments or for major capital projects) that are legally restricted to expenditures for specified purposes.

BBB Tax Fund-to account for the third penny sales tax revenue.

Library Fund – to account for library contributions, fines and other revenues and related expenditures. This is not a major fund.

Debt Service Funds – debt service funds are used to account for the accumulation of resources for, and the payment of, general long-term debt principal, interest, and related *costs*.

Capital Project Funds – capital projects funds are used to account for financial resources to be used for the acquisition or construction of major capital facilities (other than those financed by proprietary funds or trust funds for individuals, private organizations, or other governments).

Proprietary Funds:

Enterprise Funds – enterprise funds are used to account for operations (a) that are financed and operated in a manner similar to private business enterprises, where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the

general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance, public policy, management control, accountability, or other purposes.

The enterprise funds do not apply any FASB Statements and Interpretations issued after November 30, 1989.

Liquor Fund - financed by liquor, beer and merchandise sales this fund accounts for the operation of the municipal liquor store. This is a major fund.

Water Fund - financed primarily by user charges this fund accounts for the construction and operation of the municipal waterworks system and related facilities. (SDCL 9-47-1) This is a major fund.

Sewer Fund - financed primarily by user charges this fund accounts for the construction and operation of the municipal sanitary sewer system and related facilities. (SDCL 9-48-2) This is a major fund.

Airport Fund - financed primarily by user charges this fund accounts for the construction and operation of the municipal airport system and related facilities. This is a major fund.

c. Measurement Focus and Basis of Accounting:

Measurement focus is a term used to describe "how" transactions are recorded within the various financial statements. Basis of accounting refers to "when" revenues and expenditures or expenses are recognized in the accounts and reported in the financial statements, regardless of the measurement focus.

Fiduciary Funds:

Fiduciary funds consist of the following sub-categories and are never considered to be major funds:

Agency Funds – Agency funds are custodial in nature (assets equal liabilities) and do not involve measurement of results of operations. Agency funds are used to account for the special assessments funds in progress.

Measurement Focus:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities, both governmental and business-type activities are presented using the economic resources measurement focus, applied on the accrual basis of accounting.

Fund Financial Statements:

In the fund financial statements, the "current financial resources" measurement focus and the modified accrual basis of accounting are applied to governmental while the "economic resources" measurement focus and the accrual basis of accounting are applied to the proprietary and fiduciary fund types.

Basis of Accounting:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities and the fund financial statements, governmental and business-type activities are presented using the accrual basis of accounting. Under the accrual basis of accounting, revenues and related assets are recorded when earned (usually when the right to receive cash vests); and, expenses and related liabilities are recorded when an obligation is incurred (usually when the obligation to pay cash in the future vests).

Fund Financial Statements:

All governmental funds are accounted for using the modified accrual basis of accounting. Their revenues, including property taxes, are recognized when they become measurable and available. "Available" means resources are collected or to be collected soon enough after the end of the fiscal year that they can be used to pay the bills of the current period. The accrual period does not exceed one bill-paying cycle, and for the Municipality of Canton, the length of that cycle is 30 days. The revenues that were accrued at December 31, 2014 are sales taxes and other receivables.

Expenditures are generally recognized when the related fund liability is incurred. Exceptions to this general rule include principal and interest on general long-term debt which are recognized when due.

All proprietary funds and fiduciary funds are accounted for using the accrual basis of accounting. Their revenues are recognized when they are earned, and their expenses are recognized when they are incurred.

d. Interfund Eliminations and Reclassifications:

Government-wide Financial Statements:

In the process of aggregating data for the government-wide financial statements, some amounts reported as interfund activity and balances in the fund financial statements have been eliminated or reclassified, as follows:

1 In order to minimize the grossing-up effect on assets and liabilities within the governmental and business-type activities columns of the primary government, amounts reported as interfund receivables and payables have been eliminated in the governmental and business-type activities columns, except for the net, residual amounts due between governmental and business-type activities, which are presented as Internal Balances.

2. In order to minimize the doubling-up effect on internal service fund activity, certain "centralized expenses" including an administrative overhead component, are charged as direct expenses to funds or programs in order to show all expenses that are associated with a service, program, department, or fund. When expenses are charged, in this manner, expense reductions occur in the General Fund, so that expenses are reported only in the function to which they relate.

Fund Financial Statements:

Noncurrent portions of long-term interfund receivables (reported in "Advance to" asset accounts) are equally offset by a fund balance reserve account which indicates that they do not constitute "available spendable resources" since they are not a component of net current assets. Current portions of interfund receivables (reported in "Due from" asset accounts) are considered "available spendable resources."

e. Capital Assets:

Capital assets include land, buildings, machinery and equipment, and all other tangible or intangible assets that are used in operations and that have initial useful lives extending beyond a single reporting period. *Infrastructure assets* are long-lived capital assets that normally are stationary in nature and normally can be preserved for significantly greater number of years than most capital assets.

The accounting treatment over capital assets depends on whether the assets are used in governmental fund operations or proprietary fund operations and whether they are reported in the government-wide or fund financial statements.

Government-Wide Statements

Capital assets are recorded at historical cost, or estimated cost, where actual cost could not be determined. Donated capital assets are valued at their estimated fair value on the date donated. Reported cost values include ancillary charges necessary to place the asset into its intended location and condition for use. Subsequent to initial capitalization, improvements or betterments that are significant and which extend the useful file of a capital asset are also capitalized.

The total December 31, 2014 balance of governmental activities capital assets and business-type capital assets are all valued at original cost.

Infrastructure assets used in general government operations, consisting of certain improvements other than buildings, including roads, bridges, sidewalks, drainage systems, and lighting systems, acquired prior to January 1, 2004, were not required to be capitalized by the Municipality. Infrastructure assets acquired since January 1, 2004 are recorded at cost, and classified as "Improvements Other than Buildings."

For governmental activities Capital Assets, construction-period interest is not capitalized, in accordance with USGAAP, while for capital assets used in business-type activities/proprietary fund's operations, construction period interest is capitalized in accordance with USGAAP.

Depreciation of all exhaustible capital assets is recorded as an allocation expense in the government-wide Statement of Activities, except for that portion related to common use assets for which allocation would be unduly complex, and which is reported as Unallocated Depreciation, with net capital assets reflected in the Statement of Net Assets. Accumulated depreciation is reported on the government-wide Statement of Net Assets and on each proprietary fund's Statement of Net Assets/Balance Sheet.

Capitalization thresholds (the dollar values above which asset acquisitions are added to the capital asset accounts), depreciation methods, and estimated useful lives of capital assets reported in the government-wide statements and proprietary funds are as follows:

	Capitalization Threshold	Depreciation Method	Estimated Useful Life
Land and land rights	ALL	NA	NA
Improvements other than buildings	$25,000	Straight Line	10-30 YRS
Buildings	$50,000	Straight Line	25-75 YRS
Machinery and Equipment	$5,000	Straight Line	5-50 YRS

Land is an inexhaustible capital asset and is not depreciated.

Fund Financial Statements

In the fund financial statements, capital assets used in governmental fund operations are accounted for as Capital Outlay expenditures of the appropriate governmental fund upon acquisition. Capital assets used in proprietary fund operations are accounted for on the accrual basis, the same as in the government-wide statements.

f. Long-Term Liabilities:

The accounting treatment of long-term liabilities depends on whether the assets are used in governmental fund operations or proprietary fund operations and whether they are reported in the government-wide or fund financial statements.

All long-term liabilities to be repaid from governmental and business-type resources are reported as liabilities in the government-wide statements. The long-term liabilities primarily consist of special assessment bonds, state revolving fund loans, promissory notes, certificates of participation and compensated absences.

In the fund financial statements, debt proceeds are reported as revenues (other financing sources), while payments of principal and interest are reported as expenditures when they become due. The accounting for proprietary fund long-term debt is on the accrual basis, the same in the fund statements as in the government-wide statements.

g. Program Revenues:

Program revenues derive directly from the program itself or from parties other than the Municipality's taxpayers or citizenry, as a whole. Program revenues are classified into three categories, as follows:

1. Charges for services – These arise from charges to customers, applicants, or others who purchase, use, or directly benefit from the goods, services, or privileges provided, or are otherwise directly affected by the services.

2. Program-specific operating grants and contributions – These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for use in a particular program.

3. Program-specific capital grants and contributions – These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for the acquisition of capital assets for use in a particular program.

h. Proprietary Funds Revenue and Expense Classifications:

In the proprietary fund's Statement of Activities, revenues and expenses are classified in a manner consistent with how they are classified in the Statement of Cash Flows. That is, transactions for which related cash flows are reported as capital and related financing activities, noncapital financing activities, or investing activities are not reported as components of operating revenues or expenses.

i. Cash and Cash Equivalents:

The Municipality pools the cash resources of its funds for cash management purposes. The proprietary funds essentially have access to the entire amount of their cash resources on demand. Accordingly, each proprietary fund's equity in the cash management pool is considered to be cash and cash equivalents for the purpose of the Statement of Cash Flows.

j. Equity Classifications:

Government-wide Statements:

Equity is classified as net assets and is displayed in three components

1. Investment in capital assets– Consists of capital assets, including restricted capital assets, net of accumulated depreciation (if applicable) and reduced by the outstanding balances of any bonds, mortgages, notes, or other borrowings that are attributable to the acquisition, construction, or improvement of those assets.

2. Restricted net assets – Consists of net assets with constraints placed on their use either by (a) external groups such as creditors, grantors, contributors, or laws and regulations of other governments; or (b) law through constitutional provisions or enabling legislation.

3. Unrestricted net assets – All other net assets that do not meet the definition of "restricted" or "invested in capital assets, net of related debt."

Fund Financial Statements:

Governmental fund equity is classified as fund balance, and may distinguish between "Reserved" and "Unreserved" components. Proprietary fund equity is classified the same as in the government-wide financial statements. Fiduciary fund equity (except for Agency Funds, which have no fund equity) is reported as net assets held in trust for other purposes.

k. Application of Net Assets:

It is the Municipality's policy to first use restricted net assets, prior to the use of unrestricted net assets, when an expense is incurred for purposes for which both restricted and unrestricted net assets are available.

2. Deposits and Investments Credit Risk, Concentrations of Credit Risk and Interest Rate Risk:

The Municipality follows the practice of aggregating the cash assets of various funds to maximize cash management efficiency and returns. Various restrictions on deposits and investments are imposed by statutes. These restrictions are summarized below:

Deposits - The Municipality's cash deposits are made in qualified public depositories as defined by SDCL 4-6A-1, 7-20-1, 7-20-1.1 and 7-20-1.2, and may be in the form of demand or time deposits. Qualified depositories are required by SDCL 4-6A-3 to maintain at all times,

segregated from their other assets, eligible collateral having a value equal to at least 100 percent of the public deposit accounts which exceed deposit insurance such as the FDIC and NCUA. In lieu of pledging eligible securities, a qualified public depository may furnish irrevocable standby letters of credit issued by Federal Home Loan Banks accompanied by written evidence of that bank's public debt rating which may not be less than "AA" or a qualified public depository may furnish a corporate surety bond of a corporation authorized to do business in South Dakota.

Investments – In general, SDCL 4-5-6 permits Municipality funds to be invested only in (a) securities of the United States and securities guaranteed by the United States Government either directly or indirectly; or (b) repurchase agreements fully collateralized by securities described in (a) above; or in shares of an open-end, no-load fund administered by an investment company whose investments are in securities described in (a) above and repurchase agreements described in (b) above. Also, SDCL 4-5-9 requires investments to be in physical custody of the political subdivision or may be deposited in a safe keeping account with any bank or trust company designated by the political subdivision as its fiscal agent.
Credit Risk- State law limits eligible investments for the Municipality, as discussed above. The Municipality has no investment policy that would further limit its investment choices.

As of December 31, 2014, the Municipality had the following investments. All investments are in an internal deposit and investment pool.

External Investment Pools:	
SDFIT - Government Cash Reserves	$ 261,712.58
TOTAL INVESTMENTS	$ 261,712.58

The South Dakota Public Fund Investment Trust (SDFIT-GCR) is an external investment pool created for South Dakota local government investing. It is regulated by a nine-member board with representation from municipalities, school districts and counties. The net asset value of the SDFIT money market account (GCR) is kept at one dollar per share by adjusting the rate of return on a daily basis. Earnings are credited to each account on a monthly basis.

Concentration of Credit Risk- The Municipality places no limit on the amount that may be invested in any one issuer. All of the Municipality's investments are in the South Dakota Public Investment Trust.

Interest Rate Risk- The Municipality does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Assignment of Investment Income – State law allows income from deposits and investments to be credited to either the General Fund or the fund making the investment. The Municipality's policy is to credit all income from investments to the General Fund except for the Water and Sewer Fund Investments.

3. Receivables and Payables:

Receivables and Payables are not aggregated in these financial statements. The Municipality expects all receivables to be collected within one year.

4. Inventory:

Inventory in the General Fund consists of expendable supplies held for consumption. Supply inventories are recorded at cost.

Inventory acquired for resale in the proprietary funds is recorded as an asset when acquired. The consumption of inventories held for resale is charged to expense as it is consumed. Inventories held for resale are recorded at the lower of cost or market, on the first-in, first-out cost flow assumption.

Government-wide Financial Statements:

In the government-wide financial statements, inventory is recorded as an asset at the time of purchase, and charged to expense as it is consumed.

Fund Financial Statements:

In the fund financial statements, purchases of supply inventory items are recorded as an expenditure at the time individual inventory items are purchased. Reported inventories are equally offset by a fund balance reserve, which indicates that they do not constitute "available spendable resources" even though they are a component of net current assets.

5. Deferred Revenue:

Under the modified accrual basis of accounting, receivables may be measurable but not available. Available means collectible within the current period or soon enough thereafter to be used to pay liabilities of the current period. Reported deferred revenues are those where asset recognition criteria have been met but for which revenue recognition criteria have not been met.

6. Property Taxes:

Property taxes attach as an enforceable lien on property as of January 1 of each year. Taxes are levied on or before October 1 and payable in two installments on or before April 30 and October 31 of the following year.

The Municipality is permitted by several state statutes to levy varying amounts of taxes per $1,000 of taxable valuation on taxable real property in the Municipality.

7. Changes In Capital Assets

A summary of changes in capital assets for the year ended December 31, 2014 is as follows:

Governmental Activities	Balance 1/1/2014	Adjustments	Increases	Decreases	Balance 12/31/2014
Capital Assets, not being Depreciated					
Land	$ 290,166.00				$ 290,166.00
Construction Work in Progress	104,399.24	-	153,875.73	11,674.00	246,600.97
Total Capital Assets, not being depreciated	394,565.24	-	153,875.73	11,674.00	536,766.97
Capital Assets, being Depreciated					
Building	2,383,296.01	12,824.98	13,585.10		2,409,706.09
Improvements Other than Building	1,128,438.19	325,966.12	303,791.04	39,660.24	1,718,535.11
Machinery and Equipment	1,633,937.41		784,371.94	273,871.03	2,144,438.32
Library Books	338,791.10	(338,791.10)	-	-	-
Total Being Depreciated	5,484,462.71	-	1,101,748.08	313,531.27	6,272,679.52
Less Accumulated Depreciation for:					
Building	698,425.29		54,990.55		753,415.84
Improvements Other than Building	272,094.17	100,267.46	41,465.10	39,660.24	374,166.49
Machinery and Equipment	1,010,711.51		81,150.12	216,600.67	875,260.96
Library Books	100,267.46	(100,267.46)	-	-	-
Total Accumulated Depreciation	2,081,498.43	-	177,605.77	256,260.91	2,002,843.29
Total Governmental Activities Capital Assets, net	$ 3,797,529.52	$ -	$ 1,078,018.04	$ 68,944.36	$ 4,806,603.20

Depreciation Expense was charged to functions as follows:

General Government	$ 33,685.37
Public Safety	44,172.01
Public Works	57,815.17
Culture and Recreation	41,933.18
Total Depreciation Expense-Governmental	$ 177,605.73

Business - Type Activities:	Balance 1/1/2014	Adjustments	Increases	Decreases	Balance 12/31/2014
Capital Assets, not being Depreciated					
Land	117,444.36			$ 600.00	116,844.36
CWIP	92,303.50	-	726,958.65	-	819,262.15
Total	209,747.86	-	726,958.65	600.00	936,106.51
Capital Assets, being Depreciated					
Building	444,264.06			60,068.96	384,195.10
Improvements Other than Building	11,217,714.32		489,095.89	67,236.59	11,639,573.62
Machinery and Equipment	577,535.04	-	83,316.06	7,986.87	652,864.23
Total	12,239,513.42	-	572,411.95	135,292.42	12,676,632.95
Less Accumulated Depreciation for:					
Building	89,332.26		8,050.56	49,202.08	48,180.74
Improvements Other than Building	2,778,219.57		248,269.72	45,125.70	2,981,363.59
Machinery and Equipment	266,778.85	-	38,309.35	7,986.87	297,101.33
Total Accumulated Depreciation	3,134,330.68	-	294,629.63	102,314.65	3,326,645.66
Total Business-Type Activities Capital Assets, net	$ 9,314,930.60				$10,286,093.80

Depreciation expense was charged to functions as follows:	
Liquor	$ -
Water	97,455.60
Sanitary Sewer	139,643.64
Airport	57,530.39
Total Depreciation Expense- Business-type Activities	$ 294,629.63

8. Long-Term Debt

A summary of changes in long-term debt follows:

	Beginning Balance	Additions	Retired	Ending Balance	Due within One Year
Primary Government:					
Governmental Activities:					
Notes Payable	9,506.21	3,000.00	3,224.32	9,281.89	3,554.90
OPEB	46,557.43	11,758.16		58,315.59	
Accrued Compensated Absences - Governmental Funds	86,754.64	1,479.03	1,289.51	86,944.16	
Total Governmental Activities	142,818.28	16,237.19	4,513.83	154,541.64	3,554.90
Business-Type Activities:					
Certificates of Participation	-			-	
State Revolving Loan	2,208,400.76	672,938.06	118,291.48	2,763,047.34	133,397.01
Accrued Compensated Absences - Business-Type Funds	14,431.14	1,131.45	1,475.43	14,087.16	
Total Business - Type Activities	2,222,831.90	674,069.51	119,766.91	2,777,134.50	133,397.01
Total Primary Government	$ 2,365,650.18	$ 690,306.70	$ 124,280.74	$ 2,931,676.14	$ 136,951.91

Debt payable at December 31, 2014 is comprised of the following:

State Revolving Loans

Drinking Water #1, maturing in 2024 with an interest rate of 3.5%. The payments are made from the Water Fund.	293,298.81
Clean Water #2, maturing in 2024 with an interest rate of 3.50%. The payments are made from the Sewer Fund.	351,920.58
Clean Water #3, maturing in 2031 with an interest rate of 3.00%. The payments are made from the Sewer Fund.	1,386,409.89
Clean Water #4, maturing in 2044 with and interest rate of 3.25%. The payments are made from the Sewer Fund.	731,418.36
Capital Lease:	
Copier lease, maturing in 2017, with a payment of $276.43 per month. Payments to be made from the General Fund.	6,504.29
Copier lease, maturing in 2019, with a payment of $56.61 per month. Payments to be made from the General Fund.	2,777.60
Compensated Absences:	
Vested sick leave, payable as used or on termination. Payments to be made from the General, Liquor, Water, and Sewer Funds.	101,031.32

The annual requirements to amortize all debt outstanding as of December 31, 2014, except for compensated absences are as follows:

Governmental Activities

Year Ending Dec 31,			Copier Capital Lease				Total	
			Principal	Interest			Principal	Interest
2015			3,554.92	441.56			3,554.92	441.56
2016			3,583.21	363.27			3,583.21	363.27
2017			1,111.48	120.70			1,111.48	120.70
2018			642.29	37.03			642.29	37.03
2019	-	-	389.99	6.53	-	-	389.99	6.53
TOTAL	-	-	9,281.89	969.09	-	-	9,281.89	969.09

Business-Type Activities

Year Ending Dec 31,	Certificates of Participation		State Revolving Loan		Total	
	Principal	Interest	Principal	Interest	Principal	Interest
2015			133,973.01	80,445.25	133,973.01	80,445.25
2016			141,563.53	81,939.59	141,563.53	81,939.59
2017			146,189.03	77,314.09	146,189.03	77,314.09
2018			150,966.53	72,536.59	150,966.53	72,536.59
2019			155,900.97	67,602.15	155,900.97	67,602.15
2020-2024			859,387.93	258,127.67	859,387.93	258,127.67
2025-2029			592,104.00	141,663.20	592,104.00	141,663.20
2030-2034			261,732.42	66,622.28	261,732.42	66,622.28
2035-Beyond			321,803.18	54,968.57	321,803.18	54,968.57
TOTAL	-	-	2,763,620.60	901,219.39	2,763,620.60	901,219.39

9. Segment Information for Enterprise Funds:

This requirement is effectively met by the statements in this report because all enterprise funds maintained by the municipality have been reported as major funds, and therefore, the required segment information has already been disclosed in the fund basic financial statements.

10. Restricted Net Assets:

The following table shows the net assets restricted for other purposes on the Statement of Net Assets:

Restriction	Restricted By	Amount
Debt Service	Debt Covenants	$ -
Insurance	Contract Agreement	67,416.39
Special Revenue	State Law	106,288.28
		-
Total		$173,704.67

11. Retirement Plan

All employees, except for part-time employees, participate in the South Dakota Retirement System (SDRS), a cost sharing, multiple employer public employee retirement system established to provide retirement benefits for employees of the State of South Dakota and its political subdivisions. The SDRS provides retirement, disability and survivor benefits. The right to receive retirement benefits vests after three years of credited service. Authority for establishing, administering and amending plan provisions are found in South Dakota Codified Law 3-12. The SDRS issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the SDRS, P.O. Box 1098, Pierre, SD 57501-1098 or by calling (605) 773-3731.

General employees are required by state statute to contribute 6 percent of their salary to the plan, while public safety and judicial employees contribute at 8 percent and 9 percent, respectively. State statute also requires the employer to contribute an amount equal to the employee's contribution. State statute also requires the employer to make an additional contribution in the amount of 6.2 percent for any compensation exceeding the maximum taxable amount for social security for general employees only. The Municipality's share of contributions to the SDRS for the fiscal years ended December 31, 2014, 2013, and 2012 were $60,268.54, $56,201.12, and $56,120.41, respectively, equal to the required contributions each year.

12. Other Post Employment Benefits - Healthcare Plan:

Plan Description. Retiree Healthcare Plan is a single-employer defined benefit healthcare plan administered by the Municipality. The Retiree Healthcare Plan provides medical insurance benefits to eligible retirees and their spouses as permitted by South Dakota Codified Law 6-1-16. Benefit provisions were established and may be amended by governing board. The health plan does not issue separately stated stand-alone financial statements.

Funding Policy. The contribution requirements of plan members and the Municipality are established and may be amended by the governing board. An employee or spouse, who retires from the Municipality on or after the age of 55 and with are eligible for full retirement benefits through the South Dakota Retirement System, may be eligible for retiree health insurance coverage. Coverage ceases when the retiree attains the age of 65. The retiree is responsible for 100% of the full active premium rates for either single or family coverage. (pay-as-you-go basis).

Annual OPEB Cost and Net OPEB Obligation. The Municipality's annual other postemployment benefit (OPEB) cost is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities over a period not to exceed thirty years. The following table shows the financial components of the plan:

Annual Required Contribution (ARC)	$ 11,758.16
Interest on net OPEB obligation	0.00
Adjustment to annual required contribution	(0.00)
Annual OPEB Cost	$ 11,758.16
Contributions made	(0.00)
Increase (Decrease) in net OPEB obligation	$ 0.00
Net OPEB obligation – beginning of year	$ 46,557.43
Net OPEB obligation – end of year	$ 58,315.59

The Municipality's annual OPEB cost data and net OPEB obligation was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
2014	$ 11,758.16	0%	$11,758.16
2013	$ 11,758.16	0%	$11,758.16

Funded Status and Funding Progress. As of December 31, 2012, the most recent actuarial valuation date, the plan's statistics were as follows:

Actuarial Accrued Liability	$ 53,194.00
Actuarial Value of Benefit Assets	0.00
Unfunded Actuarial Accrued Liability	$ 53,194.00
Funded Ratio	0%
Covered Payroll	$ 1,317,002.15
Unfunded Actuarial Accrued Liability as a Percentage of Covered payroll	4.09%

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the alternative measure method, actuarial valuation, the entry age method was used. The actuarial assumptions included a 5.0% rate of return and an annual healthcare cost trend rate of 10 percent initially, reduced by decrements to an ultimate rate of 5 percent after 10 years. Both rates include a 3 percent inflation assumption. The UAAL is being amortized as a level percentage of projected payroll on an open basis. The remaining amortization period at 2014 was 30 years.

13. Risk Management:

The city is exposed to various risks of loss related to tort; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. During the period ended December 31, 2014, the city managed its risks as follows:

Employee Health Insurance:

The city purchases health insurance for its employees from a commercial insurance carrier. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Liability Insurance:
The Municipality joined the South Dakota Public Assurance Alliance, a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local entities. The Municipality pays an annual premium to the pool to provide coverage for torts, thefts, errors and omissions, automobile and general liability.

The agreement with the South Dakota Public Assurance Alliance (SDPAA), a public risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The objective of the SDPAA is to administer and provide risk management services and risk sharing facilities to the members and to defend and protect the members against liability, to advise members on loss control guidelines and procedures, and provide them with risk management service, loss control and risk reduction information and obtain lower costs for that coverage. The Municipality's responsibility is to promptly report to and cooperate with the SDPAA to resolve any incident, which could result in a claim being made by or against the Municipality. The Municipality pays an annual premium, to provide liability coverage detailed below, under a claims-made policy and the premiums are accrued based on the ultimate cost of the experience to date of the SDPAA member, based in their exposure or type of coverage. The Municipality pays an annual premium to the pool to provide coverage for automobile and general liability insurance.

The agreement with the SDPPA provides that the above coverages will be provided to a $5,000,000 limit. Member premiums are used by the pool for payment of claims and to pay for reinsurance for claims in excess of $250,000 to the upper limit. A portion of the member premiums are also allocated to a cumulative reserve fund. The Municipality would be eligible to receive a refund for a percentage of the amount allocated to the cumulative reserve fund on the following basis:

End of Municipality's First Full Year	50%
End of Municipality's Second Full Year	60%
End of Municipality's Third Full Year	70%
End of Municipality's Fourth Full Year	80%
End of Municipality's Fifth Full Year	90%
End of Municipality's Sixth Full Year and Thereafter	100%

The Municipality carries a $500 deductible for official's liability coverage and $2,000 law enforcement liabilities.

The Municipality of Canton does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have never exceeded the liability coverage.

Workmen's Compensation:
The Municipality joined the South Dakota Municipal League Worker's Compensation Fund (Fund), a public risk pool currently operating as a common risk management and insurance program for the South Dakota local government entities. The objective of the Fund is to formulate, develop, and administer, on behalf of the member organizations, a program of worker's compensation coverage, to obtain lower costs for that coverage, and to develop a

comprehensive loss control program. The Municipality's responsibility is to initiate and maintain a safety program to give its employees safe and sanitary working conditions and to promptly report to and cooperate with the Fund to resolve any worker's compensation claims. The Municipality pays an annual premium, to provide worker's compensation coverage for its employees, under a retrospectively rated policy and the premiums are accrued based in the ultimate cost of the experience to date of the Fund members. Coverage limits are set by state statute. The pool pays the first $325,000 of any claim per individual. The pool has reinsurance, which covers up to an additional $1,675,000 per individual per incident.

The Municipality does not carry additional insurance to cover claims in excess of the upper limit. Settled claims from these risks have never exceeded the liability coverage.

Unemployment Benefits:
The city provides coverage for unemployment benefits by paying into the Unemployment Compensation Fund established by state law and managed by the State of South Dakota.

REQUIRED SUPPLEMENTARY INFORMATION
MUNICIPALITY OF CANTON
BUDGETARY COMPARISON SCHEDULE
GENERAL FUND
For the Year Ended December 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Revenues:				
Taxes:				
General Property Taxes	$ 1,194,100.00	$ 1,194,100.00	$ 1,181,697.94	$ (12,402.06)
General Sales and Use Taxes	850,000.00	850,000.00	963,330.70	113,330.70
Penalties and Interest on Delinquent Taxes			-	-
Licenses and Permits	18,550.00	18,550.00	32,217.90	13,667.90
Intergovernmental Revenue:				
Grants			170,788.15	170,788.15
State Shared Revenue:				
Liquor Tax Reversion	20,000.00	20,000.00	34,619.99	14,619.99
Motor Vehicle Licenses (5%)	8,000.00	8,000.00	17,718.09	9,718.09
Local Government Highway and Bridge Fund	60,000.00	60,000.00	67,942.68	7,942.68
County Shared Revenue:				
County Wheel Tax	5,000.00	5,000.00	16,795.64	11,795.64
Other	6,000.00	6,000.00		(6,000.00)
Charges for Goods and Services:				
General Government	229,000.00	229,000.00	262,728.94	33,728.94
Public Safety	4,800.00	4,800.00	1,712.00	(3,088.00)
Highways and Streets	14,150.00	14,150.00	6,103.80	(8,046.20)
Sanitation	23,000.00	23,000.00	11,710.40	(11,289.60)
Health	500.00	500.00	1,500.00	1,000.00
Culture and Recreation	48,500.00	48,500.00	35,932.62	(12,567.38)
Fines and Forfeits:				
Court Fines and Costs	1,000.00	1,000.00	1,120.35	120.35
Miscellaneous Revenue:				
Investment Earnings	26,000.00	26,000.00	18,308.10	(7,691.90)
Special Assessment Revenue	-	-	-	-
Contributions and Donations from Private Sources	2,000.00	2,000.00	8,624.43	6,624.43
Transfers	100,000.00	100,000.00	100,000.00	-
Other	12,000.00	12,000.00	79,564.66	67,564.66
Total Revenue	2,622,600.00	2,622,600.00	3,012,416.39	389,816.39
Expenditures:				
General Government:				
Legislative	24,850.00	24,850.00	17,439.06	7,410.94
Executive	221,750.00	221,750.00	198,668.94	23,081.06
Elections	3,600.00	3,600.00	1,946.21	1,653.79
Financial Administration	207,500.00	223,500.00	196,098.49	27,401.51
City Attorney	25,300.00	25,300.00	13,494.44	11,805.56
Other	86,700.00	109,700.00	84,112.65	25,587.35
Total General Government	569,700.00	608,700.00	511,759.79	96,940.21

REQUIRED SUPPLEMENTARY INFORMATION
MUNICIPALITY OF CANTON
BUDGETARY COMPARISON SCHEDULE
GENERAL FUND
For the Year Ended December 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Public Safety:				
Police	478,100.00	478,100.00	451,866.79	26,233.21
Fire	458,050.00	466,050.00	460,190.59	5,859.41
Total Public Safety	936,150.00	944,150.00	912,057.38	32,092.62
Public Works:				
Highways and Streets	859,950.00	1,864,950.00	1,074,018.90	790,931.10
Sanitation	62,500.00	112,500.00	100,382.10	12,117.90
Total Public Works	922,450.00	1,977,450.00	1,174,401.00	803,049.00
Health and Welfare:				
Health & Welfare	29,500.00	29,500.00	24,008.67	5,491.33
Total Health and Welfare	29,500.00	29,500.00	24,008.67	5,491.33
Culture and Recreation:				
Recreation	163,300.00	171,300.00	142,775.09	28,524.91
Parks	154,450.00	182,950.00	169,091.40	13,858.60
Libraries	217,145.00	217,145.00	184,932.19	32,212.81
Total Culture and Recreation	534,895.00	571,395.00	496,798.68	74,596.32
Conservation and Development:				
Economic Development and Assistance (Industrial Development)	22,150.00	22,150.00	17,080.00	5,070.00
Total Conservation and Development	22,150.00	22,150.00	17,080.00	5,070.00
Total Transfers	26,000.00	26,000.00	26,000.00	-
Total Expenditures	3,040,845.00	4,179,345.00	3,162,105.52	1,017,239.48
Excess of Revenue Over (Under) Expenditures	(418,245.00)	(1,556,745.00)	(149,689.13)	1,407,055.87
Net Change in Fund Balances	(418,245.00)	(1,556,745.00)	(149,689.13)	1,407,055.87
Fund Balance - Beginning	3,484,860.00	3,484,860.00	3,484,860.00	
Adjustment to Beginning F/B				
FUND BALANCE - ENDING	$ 3,066,615.00	$ 1,928,115.00	$ 3,335,170.87	$ 1,407,055.87

Foot Notes *

REQUIRED SUPPLEMENTARY INFORMATION
MUNICIPALITY OF CANTON
BUDGETARY COMPARISON SCHEDULE
BBB SALES TAX FUND
For the Year Ended December 31, 2014

	Budgeted Amounts		Actual Amounts (Budgetary Basis)	Variance Positive (Negative)
	Original	Final		
Revenues:				
Taxes:				
General Sales and Use Taxes	$ 35,000.00	$ 35,000.00	$ 50,660.32	$ 15,660.32
Total Revenue	35,000.00	35,000.00	50,660.32	15,660.32
Expenditures:				
Debt Service	-	-	-	-
Economic Development and Assistance (Industrial Developme	16,500.00	17,500.00	17,280.00	220.00
Total Expenditures	16,500.00	17,500.00	17,280.00	220.00
Net Change in Fund Balances	18,500.00	17,500.00	33,380.32	15,880.32
Fund Balance - Beginning	50,376.59	50,376.59	50,376.59	
FUND BALANCE - ENDING	$ 68,876.59	$ 67,876.59	$ 83,756.91	$ 15,880.32

MUNICIPALITY OF CANTON
SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
For the Year Ended December 31, 2014

Federal Grantor/Pass-Through Grantor Program or Cluster Title	Federal CFDA Number	Pass-Through Entity Identifying Number	Expenditures 2014
Indirect Federal Funding:			
SD Department of Transportation,			
Highway Planning and Construction:			
Transportation Enhancement Projects	20.205		123,100.57
SD Department of Commerce and Regulation,			
State and Community Highway Safety	20.600		659.30
Alcohol Traffic Safety and Drunk Driving Prevention Incentive Grants	20.601		317.20
Total Department of Transportation			124,077.07
General Services Administration:			
Indirect Federal Funding:			
SD Federal Property Agency,			
Donation of Federal Surplus Personal Property **(Note 4)**	39.003		234.74
Total General Services Administration			234.74
Environmental Protection Agency			
Indirect Federal Funding:			
Capitalization Grant for Clean Water State Revolving Funds	66.458		341,497.00
Total Environmental Protection Agency			341,497.00
Homeland Security			
Indirect Federal Funding			
Disaster Grants	97.036		122,178.88
Total Homeland Security			122,178.88
GRAND TOTAL			$587,987.69

(NOTE: Determine and include any in-lieu-of type federal revenues in this statement.)

Note 1: This accompanying schedule of expenditures of federal awards includes the federal grant activity of the municipality and is presented on the modified accrual/full accrual basis of accounting unless otherwise noted. The information in this schedule is presented in accordance with the requirements of OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations. Therefore, some amounts presented in this schedule may differ from amounts presented in, or used in the preparation of, the the general purpose financial statements.

Note 2: Federal reimbursements are not based upon specific expenditures. Therefore, the amounts reported here represent cash received rather than federal expenditures.

Note 3: This represents a Major Federal Financial Assistance Program.

Note 4: The amount reported represents 23.3% of the original acquisition cost of the federal surplus property received by the municipality.

MUNICIPALITY OF CANTON
SCHEDULE OF CHANGES IN LONG-TERM DEBT
For the Year Ended December 31, 2014

Indebtedness	Long-Term Debt January 1, 2014	Add New Debt	Less Debt Retired	Long-Term Debt December 31, 2014
Governmental Long-Term Debt:				
231.01 General Obligation Bonds				
231.02 Revenue Bonds				
231.03 Special Assessment Bonds				
236 Advance from Other Funds				
237 Other Long-Term Liabilities	96,260.85	4,479.03	4,513.83	96,226.05
Enterprise Long-Term Debt: (only cash basis entities need to complete the enterprise section)				
231.01 General Obligation Bonds				
231.02 Revenue Bonds	2,208,400.76	672,938.06	118,291.48	2,763,047.34
231.03 Special Assessment Bonds				
235 Accrued Landfill Closure and Postclosure Care Costs				
236 Advance from Other Funds				
237 Other Long-Term Liabilities	14,431.14	1,131.45	1,475.43	14,087.16
Total	2,319,092.75	678,548.54	124,280.74	2,873,360.55

(Do not include interest in the above figures)

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
FUND 604 Sewer Fund						
DEPT 4325 Sewage Collection & Disposal						
OBJ Alt Code 410 - Personnel Svcs						
411000	Salaries & Wages	$74,571.95	$82,884.51	$68,256.72	$96,000.00	$87,500.00
412000	Social Security	$5,484.44	$6,100.52	$4,986.35	$7,500.00	$7,000.00
413000	Retirement	$4,365.82	$4,968.47	$3,856.16	$5,500.00	$6,000.00
414000	Workmens Compensa	$90.14	$2,155.29	$2,411.28	$1,500.00	$1,500.00
415000	Group Insurance	$18,071.88	$27,491.66	$21,126.38	$18,500.00	$18,000.00
416000	Unemployment	$323.77	$291.94	$319.02	$500.00	$500.00
417000	Leave Payable Expen	-$469.49	-$1,475.43	$0.00	$0.00	$0.00
OBJ Alt Code 410 - Pers		$102,438.51	$122,416.96	$100,955.91	$129,500.00	$120,500.00
OBJ Alt Code 420- Other Current Expense						
421000	Insurance	$6,189.64	$3,696.51	$6,829.03	$6,500.00	$6,500.00
422000	Professional Services	$74,041.83	$157,448.47	$56,093.56	$20,000.00	$21,500.00
422100	Administration Fee	$35,000.00	$39,000.00	$0.00	$43,000.00	$85,000.00
423000	Publishing	$109.37	$227.00	$337.99	$200.00	$300.00
424000	Rentals	$0.00	$0.00	$0.00	$400.00	$400.00
OBJ Alt Code 420- Other		$115,340.84	$200,371.98	$63,260.58	$70,100.00	$113,700.00
OBJ Alt Code 425 - Repairs & Maintenance						
425000	Repairs & Maintenanc	$57,011.54	$35,007.95	$28,263.54	$20,000.00	$20,000.00
425100	Motor Vehicle Repair	$0.00	$80.50	$0.00	$1,500.00	$1,500.00
425200	Equipment Repair &	$0.00	$0.00	$0.00	$5,000.00	$5,000.00
OBJ Alt Code 425 - Repa		$57,011.54	$35,088.45	$28,263.54	$26,500.00	$26,500.00
OBJ Alt Code 426 - Supplies & Materials						
426100	Supplies & Materials	$19,779.85	$20,236.38	$18,129.29	$35,000.00	$39,000.00
426110	Motor Vehicle Fuels	$4,130.47	$4,862.01	$2,389.61	$3,500.00	$3,500.00
426111	Motor Vehicle Oil	$0.00	$0.00	$225.56	$1,000.00	$1,000.00
426112	Tires	$2,767.97	$685.70	$923.46	$2,000.00	$2,000.00
426150	Chemicals	$13,211.75	$3,732.10	$11,045.95	$20,000.00	$5,000.00
426160	Uniforms	$1,534.38	$1,500.79	$1,618.01	$3,500.00	$3,500.00
426170	Postage	$2,020.28	$1,439.17	$928.42	$2,000.00	$6,500.00
OBJ Alt Code 426 - Supp		$43,444.70	$32,456.15	$35,260.30	$67,000.00	$60,500.00
OBJ Alt Code 427 - Travel & Training						
427000	Travel & Training	$3,340.86	$214.50	$482.48	$5,000.00	$5,000.00
427100	Mileage	$22.20	$165.13	$0.00	$150.00	$150.00
427300	Registration Fees	$185.00	$2,557.00	$0.00	$500.00	$500.00
OBJ Alt Code 427 - Trav		$3,548.06	$2,936.63	$482.48	$5,650.00	$5,650.00
OBJ Alt Code 428 - Utility Expense						
428100	Electricity	$44,113.01	$31,603.97	$25,087.25	$45,000.00	$45,000.00
428200	Heating	$1,602.65	$1,892.60	$909.65	$5,000.00	$5,000.00
428300	Telephone	$250.55	$416.77	$206.38	$500.00	$500.00
428320	Cellular Phone Servic	$805.43	$747.93	$778.18	$1,000.00	$1,000.00
428500	Garbage Fees	$268.75	$293.75	$191.25	$300.00	$300.00
OBJ Alt Code 428 - Utilit		$47,040.39	$34,955.02	$27,172.71	$51,800.00	$51,800.00
OBJ Alt Code 429 - Other Expense						
429100	Other Expense	$3,184.60	$20.00	$2,697.65	$8,000.00	$9,500.00
429420	Contingency Fund	$0.00	$0.00	$0.00	$900.00	$900.00
456000	Loss on Disposition of	$0.00	$22,110.89	$0.00	$0.00	$0.00
457000	Depreciation Expense	$132,579.19	$139,643.64	$0.00	$50,000.00	$65,000.00

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
OBJ Alt Code 429 - Othe		$135,763.79	$161,774.53	$2,697.65	$58,900.00	$75,400.00
OBJ Alt Code 430 - Capital Expense						
431000	Land	$0.00	$0.00	$0.00	$2,000.00	$2,000.00
432000	Buildings	$0.00	$0.00	$0.00	$0.00	$0.00
434000	Machinery & Equipme	$0.00	$10,248.70	$15,564.60	$380,000.00	$25,000.00
434100	Computers & Softwar	$650.73	$6,083.00	$1,331.92	$10,000.00	$12,500.00
435000	Furniture, etc.	$0.00	$0.00	$0.00	$0.00	$0.00
436900	Water/Sewer Line Ins	$0.00	$21,847.03	$0.00	$50,000.00	$50,000.00
436912	Sewer Lagoons Proje	$0.00	$0.00	$164,925.59	$0.00	$0.00
436915	East 5th Street - W/S	$0.00	$284,134.60	$0.00	$57,500.00	$27,000.00
OBJ Alt Code 430 - Capit		$650.73	$322,313.33	$181,822.11	$499,500.00	$116,500.00
OBJ Alt Code 440 - Debt Service						
444100	SRF Loan - Principal P	$0.00	$319.42	$83,861.09	$105,000.00	$115,500.00
444110	SRF Loan - Interest P	$57,023.68	$56,538.27	$62,817.69	$55,000.00	$73,500.00
445100	Debt Leasing - Princip	$0.00	$0.00	$0.00	$0.00	$0.00
445110	Debt Leasing - Intere	$2,289.99	$0.00	$0.00	$0.00	$0.00
445120	Debt Leasing - Trust	$1,666.67	$0.00	$0.00	$0.00	$0.00
449100	Other Debt Service C	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 440 - Debt		$60,980.34	$56,857.69	$146,678.78	$160,000.00	$189,000.00
OBJ Alt Code 999 - Budget Supplements						
999999	Budget Supplements	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 999 - Budg		$0.00	$0.00	$0.00	$0.00	$0.00
DEPT 4325 Sewage Collecti		$566,218.90	$969,170.74	$586,594.06	$1,068,950.00	$759,550.00

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
DEPT 4328 Sewer Billing Operations						
OBJ Alt Code 410 - Personnel Svcs						
411000	Salaries & Wages	$0.00	$0.00	$0.00	$0.00	$0.00
412000	Social Security	$0.00	$0.00	$0.00	$0.00	$0.00
413000	Retirement	$0.00	$0.00	$0.00	$0.00	$0.00
414000	Workmens Compensa	$0.00	$0.00	$0.00	$0.00	$0.00
415000	Group Insurance	$0.00	$0.00	$0.00	$0.00	$0.00
416000	Unemployment	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 410 - Pers		$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 420- Other Current Expense						
421000	Insurance	$0.00	$0.00	$643.29	$0.00	$0.00
422000	Professional Services	$437.44	$477.13	$1,877.77	$1,500.00	$0.00
422100	Administration Fee	$35,000.00	$39,000.00	$0.00	$42,000.00	$0.00
423000	Publishing	$0.00	$0.00	$0.00	$100.00	$0.00
OBJ Alt Code 420- Other		$35,437.44	$39,477.13	$2,521.06	$43,600.00	$0.00
OBJ Alt Code 425 - Repairs & Maintenance						
425000	Repairs & Maintenanc	$390.00	$0.00	$447.32	$700.00	$0.00
OBJ Alt Code 425 - Repa		$390.00	$0.00	$447.32	$700.00	$0.00
OBJ Alt Code 426 - Supplies & Materials						
426100	Supplies & Materials	$1,165.93	$2,000.78	$2,710.84	$4,000.00	$0.00
426130	Office Supplies	$0.00	$0.00	$0.00	$600.00	$0.00
426170	Postage	$3,337.35	$3,925.24	$1,786.38	$4,500.00	$0.00
OBJ Alt Code 426 - Supp		$4,503.28	$5,926.02	$4,497.22	$9,100.00	$0.00
OBJ Alt Code 427 - Travel & Training						
427000	Travel & Training	$0.00	$0.00	$0.00	$0.00	$0.00
427100	Mileage	$0.00	$0.00	$0.00	$0.00	$0.00
427300	Registration Fees	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 427 - Trav		$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 429 - Other Expense						
429100	Other Expense	$21.82	$18.92	$23.99	$1,500.00	$0.00
429120	RSVP Donation	$1,250.00	$1,250.00	$0.00	$0.00	$0.00
OBJ Alt Code 429 - Othe		$1,271.82	$1,268.92	$23.99	$1,500.00	$0.00
OBJ Alt Code 430 - Capital Expense						
434100	Computers & Softwar	$0.00	$9,584.15	$1,768.50	$2,500.00	$0.00
435000	Furniture, etc.	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 430 - Capit		$0.00	$9,584.15	$1,768.50	$2,500.00	$0.00
DEPT 4328 Sewer Billing Op		$41,602.54	$56,256.22	$9,258.09	$57,400.00	$0.00

SRC	SRC Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
FUND 604 Sewer Fund						
DEPT 3830 Sewer Revenues						
83110	Sewer Fees	$751,296.29	$697,310.41	$611,540.45	$800,000.00	$800,000.00
83920	Sewer Late Fees	$6,490.00	$7,345.00	$6,261.73	$6,500.00	$6,500.00
83930	State Sewer Fees Collected	$0.00	-$134.59	$0.00	$0.00	$0.00
83960	Interest Revenue	$165.20	$26.02	$10.90	$500.00	$500.00
83990	Other Sewer Revenues	$85,275.90	$500.00	$2,073.21	$0.00	$0.00
83991	Non-Operating Grant Reven	$0.00	$0.00	$0.00	$0.00	$0.00
85210	Farm Land & Pasture Rents	$9,524.46	$509.32	$9,275.20	$8,500.00	$8,500.00
91100	SRF Loan Proceeds	$0.00	$0.00	$0.00	$0.00	$0.00
91300	Sale of General Fixed Assets	$0.00	$0.00	$0.00	$0.00	$0.00
DEPT 3830 Sewer Revenues		$852,751.85	$705,556.16	$629,161.49	$815,500.00	$815,500.00
DEPT 3910 Other Financing Sources						
31900	Other Federal Grants	$0.00	$64,794.65	$41,158.97	$0.00	$0.00
DEPT 3910 Other Financing Sour		$0.00	$64,794.65	$41,158.97	$0.00	$0.00
FUND 604 Sewer Fund		$852,751.85	$770,350.81	$670,320.46	$815,500.00	$815,500.00

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
FUND 604 Sewer Fund						
DEPT 4325 Sewage Collection & Disposal						
OBJ Alt Code 410 - Personnel Svcs						
411000	Salaries & Wages	$74,571.95	$82,884.51	$68,256.72	$96,000.00	$87,500.00
412000	Social Security	$5,484.44	$6,100.52	$4,986.35	$7,500.00	$7,000.00
413000	Retirement	$4,365.82	$4,968.47	$3,856.16	$5,500.00	$6,000.00
414000	Workmens Compensa	$90.14	$2,155.29	$2,411.28	$1,500.00	$1,500.00
415000	Group Insurance	$18,071.88	$27,491.66	$21,126.38	$18,500.00	$18,000.00
416000	Unemployment	$323.77	$291.94	$319.02	$500.00	$500.00
417000	Leave Payable Expen	-$469.49	-$1,475.43	$0.00	$0.00	$0.00
OBJ Alt Code 410 - Pers		$102,438.51	$122,416.96	$100,955.91	$129,500.00	$120,500.00
OBJ Alt Code 420- Other Current Expense						
421000	Insurance	$6,189.64	$3,696.51	$6,829.03	$6,500.00	$6,500.00
422000	Professional Services	$74,041.83	$157,448.47	$56,093.56	$20,000.00	$21,500.00
422100	Administration Fee	$35,000.00	$39,000.00	$0.00	$43,000.00	$85,000.00
423000	Publishing	$109.37	$227.00	$337.99	$200.00	$300.00
424000	Rentals	$0.00	$0.00	$0.00	$400.00	$400.00
OBJ Alt Code 420- Other		$115,340.84	$200,371.98	$63,260.58	$70,100.00	$113,700.00
OBJ Alt Code 425 - Repairs & Maintenance						
425000	Repairs & Maintenanc	$57,011.54	$35,007.95	$28,263.54	$20,000.00	$20,000.00
425100	Motor Vehicle Repair	$0.00	$80.50	$0.00	$1,500.00	$1,500.00
425200	Equipment Repair &	$0.00	$0.00	$0.00	$5,000.00	$5,000.00
OBJ Alt Code 425 - Repa		$57,011.54	$35,088.45	$28,263.54	$26,500.00	$26,500.00
OBJ Alt Code 426 - Supplies & Materials						
426100	Supplies & Materials	$19,779.85	$20,236.38	$18,129.29	$35,000.00	$39,000.00
426110	Motor Vehicle Fuels	$4,130.47	$4,862.01	$2,389.61	$3,500.00	$3,500.00
426111	Motor Vehicle Oil	$0.00	$0.00	$225.56	$1,000.00	$1,000.00
426112	Tires	$2,767.97	$685.70	$923.46	$2,000.00	$2,000.00
426150	Chemicals	$13,211.75	$3,732.10	$11,045.95	$20,000.00	$5,000.00
426160	Uniforms	$1,534.38	$1,500.79	$1,618.01	$3,500.00	$3,500.00
426170	Postage	$2,020.28	$1,439.17	$928.42	$2,000.00	$6,500.00
OBJ Alt Code 426 - Supp		$43,444.70	$32,456.15	$35,260.30	$67,000.00	$60,500.00
OBJ Alt Code 427 - Travel & Training						
427000	Travel & Training	$3,340.86	$214.50	$482.48	$5,000.00	$5,000.00
427100	Mileage	$22.20	$165.13	$0.00	$150.00	$150.00
427300	Registration Fees	$185.00	$2,557.00	$0.00	$500.00	$500.00
OBJ Alt Code 427 - Trav		$3,548.06	$2,936.63	$482.48	$5,650.00	$5,650.00
OBJ Alt Code 428 - Utility Expense						
428100	Electricity	$44,113.01	$31,603.97	$25,087.25	$45,000.00	$45,000.00
428200	Heating	$1,602.65	$1,892.60	$909.65	$5,000.00	$5,000.00
428300	Telephone	$250.55	$416.77	$206.38	$500.00	$500.00
428320	Cellular Phone Servic	$805.43	$747.93	$778.18	$1,000.00	$1,000.00
428500	Garbage Fees	$268.75	$293.75	$191.25	$300.00	$300.00
OBJ Alt Code 428 - Utilit		$47,040.39	$34,955.02	$27,172.71	$51,800.00	$51,800.00
OBJ Alt Code 429 - Other Expense						
429100	Other Expense	$3,184.60	$20.00	$2,697.65	$8,000.00	$9,500.00
429420	Contingency Fund	$0.00	$0.00	$0.00	$900.00	$900.00
456000	Loss on Disposition of	$0.00	$22,110.89	$0.00	$0.00	$0.00
457000	Depreciation Expense	$132,579.19	$139,643.64	$0.00	$50,000.00	$65,000.00

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
OBJ Alt Code 429 - Othe		$135,763.79	$161,774.53	$2,697.65	$58,900.00	$75,400.00
OBJ Alt Code 430 - Capital Expense						
431000	Land	$0.00	$0.00	$0.00	$2,000.00	$2,000.00
432000	Buildings	$0.00	$0.00	$0.00	$0.00	$0.00
434000	Machinery & Equipme	$0.00	$10,248.70	$15,564.60	$380,000.00	$25,000.00
434100	Computers & Softwar	$650.73	$6,083.00	$1,331.92	$10,000.00	$12,500.00
435000	Furniture, etc.	$0.00	$0.00	$0.00	$0.00	$0.00
436900	Water/Sewer Line Ins	$0.00	$21,847.03	$0.00	$50,000.00	$50,000.00
436912	Sewer Lagoons Proje	$0.00	$0.00	$164,925.59	$0.00	$0.00
436915	East 5th Street - W/S	$0.00	$284,134.60	$0.00	$57,500.00	$27,000.00
OBJ Alt Code 430 - Capit		$650.73	$322,313.33	$181,822.11	$499,500.00	$116,500.00
OBJ Alt Code 440 - Debt Service						
444100	SRF Loan - Principal P	$0.00	$319.42	$83,861.09	$105,000.00	$115,500.00
444110	SRF Loan - Interest P	$57,023.68	$56,538.27	$62,817.69	$55,000.00	$73,500.00
445100	Debt Leasing - Princip	$0.00	$0.00	$0.00	$0.00	$0.00
445110	Debt Leasing - Intere	$2,289.99	$0.00	$0.00	$0.00	$0.00
445120	Debt Leasing - Trust	$1,666.67	$0.00	$0.00	$0.00	$0.00
449100	Other Debt Service C	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 440 - Debt		$60,980.34	$56,857.69	$146,678.78	$160,000.00	$189,000.00
OBJ Alt Code 999 - Budget Supplements						
999999	Budget Supplements	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 999 - Budg		$0.00	$0.00	$0.00	$0.00	$0.00
DEPT 4325 Sewage Collecti		$566,218.90	$969,170.74	$586,594.06	$1,068,950.00	$759,550.00

OBJ	OBJ Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
DEPT 4328 Sewer Billing Operations						
OBJ Alt Code 410 - Personnel Svcs						
411000	Salaries & Wages	$0.00	$0.00	$0.00	$0.00	$0.00
412000	Social Security	$0.00	$0.00	$0.00	$0.00	$0.00
413000	Retirement	$0.00	$0.00	$0.00	$0.00	$0.00
414000	Workmens Compensa	$0.00	$0.00	$0.00	$0.00	$0.00
415000	Group Insurance	$0.00	$0.00	$0.00	$0.00	$0.00
416000	Unemployment	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 410 - Pers		$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 420- Other Current Expense						
421000	Insurance	$0.00	$0.00	$643.29	$0.00	$0.00
422000	Professional Services	$437.44	$477.13	$1,877.77	$1,500.00	$0.00
422100	Administration Fee	$35,000.00	$39,000.00	$0.00	$42,000.00	$0.00
423000	Publishing	$0.00	$0.00	$0.00	$100.00	$0.00
OBJ Alt Code 420- Other		$35,437.44	$39,477.13	$2,521.06	$43,600.00	$0.00
OBJ Alt Code 425 - Repairs & Maintenance						
425000	Repairs & Maintenanc	$390.00	$0.00	$447.32	$700.00	$0.00
OBJ Alt Code 425 - Repa		$390.00	$0.00	$447.32	$700.00	$0.00
OBJ Alt Code 426 - Supplies & Materials						
426100	Supplies & Materials	$1,165.93	$2,000.78	$2,710.84	$4,000.00	$0.00
426130	Office Supplies	$0.00	$0.00	$0.00	$600.00	$0.00
426170	Postage	$3,337.35	$3,925.24	$1,786.38	$4,500.00	$0.00
OBJ Alt Code 426 - Supp		$4,503.28	$5,926.02	$4,497.22	$9,100.00	$0.00
OBJ Alt Code 427 - Travel & Training						
427000	Travel & Training	$0.00	$0.00	$0.00	$0.00	$0.00
427100	Mileage	$0.00	$0.00	$0.00	$0.00	$0.00
427300	Registration Fees	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 427 - Trav		$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 429 - Other Expense						
429100	Other Expense	$21.82	$18.92	$23.99	$1,500.00	$0.00
429120	RSVP Donation	$1,250.00	$1,250.00	$0.00	$0.00	$0.00
OBJ Alt Code 429 - Othe		$1,271.82	$1,268.92	$23.99	$1,500.00	$0.00
OBJ Alt Code 430 - Capital Expense						
434100	Computers & Softwar	$0.00	$9,584.15	$1,768.50	$2,500.00	$0.00
435000	Furniture, etc.	$0.00	$0.00	$0.00	$0.00	$0.00
OBJ Alt Code 430 - Capit		$0.00	$9,584.15	$1,768.50	$2,500.00	$0.00
DEPT 4328 Sewer Billing Op		$41,602.54	$56,256.22	$9,258.09	$57,400.00	$0.00

SRC	SRC Descr	2013 Amt	2014 Amt	2015 YTD Amt	2015 Budget	2016 Budget
FUND 604 Sewer Fund						
DEPT 3830 Sewer Revenues						
83110	Sewer Fees	$751,296.29	$697,310.41	$611,540.45	$800,000.00	$800,000.00
83920	Sewer Late Fees	$6,490.00	$7,345.00	$6,261.73	$6,500.00	$6,500.00
83930	State Sewer Fees Collected	$0.00	-$134.59	$0.00	$0.00	$0.00
83960	Interest Revenue	$165.20	$26.02	$10.90	$500.00	$500.00
83990	Other Sewer Revenues	$85,275.90	$500.00	$2,073.21	$0.00	$0.00
83991	Non-Operating Grant Reven	$0.00	$0.00	$0.00	$0.00	$0.00
85210	Farm Land & Pasture Rents	$9,524.46	$509.32	$9,275.20	$8,500.00	$8,500.00
91100	SRF Loan Proceeds	$0.00	$0.00	$0.00	$0.00	$0.00
91300	Sale of General Fixed Assets	$0.00	$0.00	$0.00	$0.00	$0.00
DEPT 3830 Sewer Revenues		$852,751.85	$705,556.16	$629,161.49	$815,500.00	$815,500.00
DEPT 3910 Other Financing Sources						
31900	Other Federal Grants	$0.00	$64,794.65	$41,158.97	$0.00	$0.00
DEPT 3910 Other Financing Sour		$0.00	$64,794.65	$41,158.97	$0.00	$0.00
FUND 604 Sewer Fund		$852,751.85	$770,350.81	$670,320.46	$815,500.00	$815,500.00

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  - Inactive Exclusions
  - Excluded Family Members

BACK TO USER DASHBOARD

CITY OF CANTON
DUNS: 033541236 CAGE Code: 5L3D0
Status: Active
Expiration Date: 04/08/2016
Purpose of Registration: Federal Assistance Awards Only

216 N DAKOTA ST
CANTON, SD, 57013-1824
UNITED STATES

Entity Overview

Entity Information

DUNS: 033541236
Name: CITY OF CANTON
Doing Business As: CITY HALL
Business Type: US Local Government
POC Name: Kyle Cwach
Registration Status: Active
Activation Date: 04/09/2015
Expiration Date: 04/08/2016

Exclusions

Active Exclusion Records? No

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.

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Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF LINCOLN

ANDY WILCOX

being first duly sworn on his oath says; that the Sioux Valley News is a legal weekly newspaper of general circulation as required by South Dakota Code of Nineteen Hundred Thirty-Nine, and any acts amendatory thereto, printed and published by the Sioux Valley News, Inc., in Canton, in said county and State, and has been such legal newspaper during the time hereinafter mentioned; that he is and during all of said time was publisher of said newspaper and has personal knowledge of the facts stated in this affidavit; that the advertisement headed:

City of Canton
Notice of Public Hearing

a printed copy of which is hereto attached, was printed and published in said newspaper for **ONE** successive week(s) upon the following dates, to-wit:

December 10, 2015

that the full amount of the fees charged for publishing the same to-wit: the sum of **$26.35** inures solely to the benefit of the publishers of said newspaper; that no agreement or understanding for any division of this sum has been made with any other person; and that no part of said sum has been agreed to be paid to any person whomsoever.

Andy Wilcox

Ascribed and sworn to before me this **10th** day of **December, 2015.**

Notary Public, South Dakota

(Seal)

TERESA J. WILCOX NOTARY Seal PUBLIC STATE OF SOUTH DAKOTA

My Commission Expires
December 9, 2020

NOTICE OF PUBLIC HEARING
for the
DAKOTA STREET IMPROVEMENTS PROJECT-PHASE 1

Notice is hereby given that the City of Canton will hold a Public Hearing on December 21st, 2015, regarding drinking water and wastewater utility improvements to Dakota Street. The City is seeking up to $960,000 of funding from the Board of Water and Natural Resources for the drinking water improvements. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the either the Drinking Water State Revolving Funds (SRF) Program. The expected Drinking Water SRF loan terms are 3 percent for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal.

The City is seeking up to $1,848,000 of funding from the Board of Water and Natural Resources for the wastewater improvements. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the either the Clean Water State Revolving Funds (SRF) Program. The expected Clean Water SRF loan terms are 3.25 percent for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal.

The amount and source of funds will be determined by the Board of Water and Natural Resources when the applications are presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

This public hearing will be held at the following time, date and location:

7:00 P.M.
December 21st, 2015
Canton Depot (600 West Fifth Street, Canton, SD)
Viking Room (lower level)

In compliance with the Americans with Disabilities Act (ADA), if you need special assistance to participate in this hearing, please contact the Canton Finance Officer at (605) 987-2881. Anyone who is deaf, hard-of-hearing or speech-disabled may utilize Relay South Dakota at (800) 877-1113 (TTY/Voice). Notification 48 hours prior to the hearing will enable the City to make reasonable arrangements to ensure accessibility to this hearing.

Kyle Cwach
Canton Finance Officer

Published in the Sioux Valley news on December 10, 2015 at the total approximate cost of $26.35.

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Lacey Schmeling	SECOG
Myron Adam	JSA
Larissa VanBeek	
David Miller	Canton Police Dept
Chuck Andresen	Canton

2

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Andy Wilcox	Sioux Valley News
Lucy Wilcox	412 west 5th Street
Jerit Donelaar	606 E Poplar

3

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Jeff Fossum	814 E 5 Canton City of Canton
Bill Thorson	503 N Lincoln City of Canton

4

1885

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING	
STEVE ZIEGARTH	1012 N. KIDDER ST.	CITY OF CANTON
Kristen Townsend	1700 Holiday Drive	City of Canton

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City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING	
Kyle Cundy	210 N. Dakota	City of Canton
Karen Leffler	210 N Dakota	City of Canton
Chuck Smith	724 E. Walnut	City of Canton
John Devick	420 N. Milwaukee Ave	City of Canton
Shelly Eich	1015 N. Kidder	City of Canton
Richard S. Eble	314 W. 3rd	City of Canton
Farrell Ad	910 Candy Ct	City of Canton

Unapproved

MINUTES OF CANTON CITY COMMISSION MEETING
DECEMBER 21, 2015

The Canton City Commission met at the Depot Viking Room, on Monday, December 21st, 2015 at 7:00 p.m. with the following members present: Commissioners Anderson, Devick, Eich, Ekle, Ziebarth and Mayor Smith.
Commissioner Toso, Townsend and Elrod were absent at the time of roll call.

Also present were Interim City Manager Cwach and Deputy Finance Officer Leffler.

Guests who signed in are as follows: Myron Adam, Lacey Schmeling, Bill Thorson, Jeff Fossum, David Miller, Larissa Van Beek, Andy Wilcox, Lucy Wilcox, Gert Havelaar, and Chuck Andreson.

The Pledge of Allegiance was recited.

CONSENT CALENDAR
Commissioner Devick moved and Commissioner Ziebarth seconded to approve the consent calendar consisting of the following: 1) to approve the minutes, from the December 4th, 2015 Special Meeting, December 5th Special Meeting, December 7th Regular Commission meeting, and December 10th Special Meeting and that they are signed and published; 2) to approve the warrants to be listed at the end of the minutes; 3) to approve the November month-end reports; and 4) to approve the agenda. Unanimous Approval.

VISITOR DIALOGUE:

Commissioner Townsend arrived.

SRF PUBLIC HEARING – DAKOTA STREET PROJECT
This being the time and place for a public hearing for the SRF Funding for the Dakota Street project. Mayor Smith opened the hearing. Myron Adam, JSA and Lacey Schmeling, SECOG were present to report on the process so far; concerning the need to do this project, the options, and costs involved and the applications for State Revolving Fund finances. There were no proponents, nor opponents to be heard. Mayor Smith closed the hearing and invited discussion from the Commissioners.
Commissioner Anderson moved and Commissioner Ziebarth seconded to approve the applications for the SRF funding, the Cost and Effectiveness Certification Form and the following Resolutions for the SRF funding, that the Resolutions be given a number and authorize the Mayor to sign the Resolutions, applications and the Cost and Effectiveness Certification Form. Unanimous Approval.

RESOLUTION NO. 1233

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $1,648,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

_____

Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

RESOLUTION NO. 1234

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Drinking Water System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $760,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

_____
Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

2016 SALARY RESOLUTION
Commissioner Devick moved and Commissioner Anderson seconded to approve the following 2016 Salary Resolution, that it be given a number, signed and published as required by State law. Unanimous Approval.

RESOLUTION # 1235

CITY OF CANTON
2016 PAYROLL RESOLUTION

WHEREAS, it is in the best interests of the City of Canton to pay a competitive wage to attract and retain the best employees to effectively and responsibly serve the community; and

WHEREAS, the City of Canton, as an employer, makes periodic adjustments to wages and compensation for inflation, regulatory requirements, and in comparison to other employers; and
WHEREAS, Full-Time Police Personnel's Hourly Rate is based on a work schedule of 2,184 hours/year, and all other City Full-time Personnel's Hourly Rate is based on a work schedule of 2,080 hours/year.
NOW, THEREFORE, BE IT RESOLVED, that the Governing Body of the City of Canton hereby approves and adopts the following wage rates for 2016 payment schedule

ELECTED OFFICIALS
Mayor: Charles Smith/$46.15/Bi-Weekly **City Commission:** Farrell Anderson/$46.15/Bi-Weekly; John Devick/$46.15/Bi-Weekly; Shelly Eich/$46.15/Bi-Weekly; Richard Ekle/$46.15/Bi-Weekly; Kari Elrod/$46.15/Bi-Weekly; Jonathan Toso/$46.15/Bi-Weekly; Kristen Townsend/$46.15/Bi-Weekly; Steve Ziebarth/46.15/Bi-Weekly

FULL-TIME/PART-TIME:
Building Inspector: Eric Eneboe/$25.00 per inspection plus mileage **Custodial**: Marge Buysman/$13.06; Ron Buysman/$13.06; **Finance**: Kyle Cwach/$35.56; Karen Leffler/$23.15; Tiffany VanDeKieft/$14.50 **General Government**: Larissa Van Beek/$15.86; Carol Mulder/$12.02 **Library**: Edith Nelson/$23.66; Jonette Chaon/$10.82; Levi Magnuson/$10.57; Laura Olson/$11.30; Tracey Zylstra/$13.47 **Parks & Recreation**: Mark Swier/$15.56 **Police**: David Miller/$32.34; David Jacobs/$24.66; Patrick McGawley/$18.52; Michael Meinzer/$18.52; Christine Reitsma/$19.93; Joseph Carlson/$18.02; Travis Johns/$18.02; Steve Lowry/$18.02 **Public Works**: Bill Thorson/$32.34; Ryan Vandemore/$22.36; Justin Blade/$17.82; Chris Krogmann/$15.19; Dalton Nelson/$8.94 **Rubble Site**: Gary Jones/$9.60; Laurie Gates/$9.03 **Snow Removal**: David Baldwin/$10.95; Craig Dittberner/$10.95; Kelly Eilers/$11.48; Sherman Gardner/$10.95; Andy McCann/$10.95; Gary Renli/$10.95; Dwaine Tiedemann/$10.95; **Water & Sewer:** Jeff Fossum/$29.19; Russell Doty/$15.19; Steve Erickson/$15.19

PROVIDED, HOWEVER, the City Manager may make wage increases for the completion of education requirements, for passing certification tests, for fulfillment of job requirements set at the date of employment, and the City Manager may make meritorious wage increases for Department Heads within the budgetary appropriation of the respective departments.

Dated at Canton, South Dakota this 21st day of December 2015.

FOR THE GOVERNING BODY OF THE
CITY OF CANTON, SOUTH DAKOTA

By _____
Charles Smith, Mayor

ATTEST:

By _____
Kyle Cwach, Finance Officer

Adopted: 12/21/2015
Publish: 12/31/2015

Published once at the approximate cost of _____.

2016 EMPLOYEE WELLNESS PROGRAM
Commissioner Ziebarth moved and Commissioner Townsend seconded to approve DakotaCare's year-long wellness program and the FITBIT program for 2016 and authorize the Mayor to sign. Commissioners Anderson, Devick, Eich, Townsend, Ziebarth, and Mayor Smith voted aye. Commissioner Ekle voted nay. Motion Carried.

SANFORD CANTON-INWOOD AMBULANCE LEASE AMENDMENT
Commissioner Devick moved and Commissioner Ziebarth seconded to approve the amendment increasing the rent to $150.00 for use of the Fire Hall. Unanimous Approval.

2016 FEE SCHEDULE
Commissioner Devick moved and Commissioner Eich seconded to approve the proposed changes to the 2016 Fee Schedule as recommended by the City Staff, as presented and on file. Unanimous Approval.

CWSRF CERTIFICATION OF PROJECT COMPLETION
Commissioner Ziebarth moved and Commissioner Devick seconded to approve the Certificate of Project Completion for the Beaver Creek Life Station Project and authorize the Mayor to sign. Unanimous Approval.

2015 AUDIT CONTRACT
Commissioner Devick moved and Commissioner Eich seconded to approve the Audit Engagement Letter for the 2015 Audit, as presented and on file, with the fee for $9,900.00 and authorize the Mayor to sign. Unanimous Approval.

CONNECTING KIDS CONTRACT FOR 2016
Commissioner Ziebarth moved and Commissioner Eich seconded to approve the contract for the Connecting Kids program for 2016, as presented and on file, and authorize the Mayor to sign. Unanimous Approval.

DIALOGUE

Interim City Manager Cwach commented on:

The City Offices will be closed on Thursday afternoon and Friday to observe the Christmas Holidays.

The Library and the rubble site will be closed as well.

City staff visited the holiday open houses last week.

Please have the Employee of the Year nominations in by December 31st, as well as the RSVP's for the City Employee Appreciation Banquet.

Commissioner Eich reported:

That she has received a phone call regarding the pickup of garbage by the garbage haulers before 6:00am.

Mayor Smith wished everyone a Merry Christmas and Happy New Year.

ADJOURN

FACILITIES PLAN

DAKOTA STREET PROJECT - PHASE 1

WATER DISTRIBUTION, SANITARY SEWER COLLECTION AND STORM SEWER FACILITY IMPROVEMENTS

DECEMBER 2015

Prepared By:

JSA ENGINEERS AND LAND SURVEYORS
Land Development • Municipal • Streets • Water • Sewer • GPS • Construction Staking

DAKOTA STREET PROJECT - PHASE 1

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WATER DISTRIBUTION, SANITARY SEWER COLLECTION AND STORM SEWER FACILITY IMPROVEMENTS

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I hereby certify that this plan, specification or report was prepared by me or under my direct personal supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Myron Adam, PE/LS
Registration Number 6790

Date 12-23-15

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
REG. NO.
6790
MYRON K.
ADAM
SOUTH DAKOTA

1. Project Executive Summary

The City of Canton is planning to reconstruct approximately 2,700 lineal feet of Dakota Street from US Highway 18 (5th Street) to Lynn Avenue (Project) within the corporate limits of the community to improve the underground public utility infrastructure. Dakota Street is an existing concrete/asphalt street. The project generally includes the removal of the existing street section, replacement of the existing underground utilities, and the reconstruction of the roadway comprised of a concrete driving surface, curb and gutter, and sidewalks. Refer to the appendices for location maps and preliminary layout details for the project.

The existing water distribution system, sanitary sewer system and storm sewer system within the project corridor are in need of replacement due to the age of the existing infrastructure and, in the case of the water and storm sewer systems, due to undersized mains.

The existing sanitary sewer gravity collection system is comprised of VCP sewer mains, VCP and PVC service lines and brick and concrete manholes. Approximately 2,740 feet of existing sanitary sewer main will be replaced once the existing street surfacing is removed. The new sanitary collection system will be comprised of 8” diameter PVC mains and 4” or 6” diameter PVC sewer service lines. Eight new 48” diameter reinforced concrete pipe manholes will also be installed along the project corridor. A portion of the existing sanitary main will be deepened to allow sanitary service to expand to an undeveloped portion of the City. The additional flow from the undeveloped land will not make a significant impact to the downstream collection system and no increases in sanitary sewer pipes sizes are warranted.

The existing storm water system consists of approximately various sizes of storm sewer pipe (PVC, VCP and RCP) between 4th Street and 1st Street along Dakota Street. At 4th Street, a pair of 36” diameter pipes convey storm water to the east and then south, ultimately discharging into a drainage channel leading to the Big Sioux River. The proposed municipal storm sewer system is comprised of a combination of 3,135 feet of reinforced concrete pipe, 11 storm sewer junction boxes and 33 inlets. The storm sewer system is designed to carry the runoff from a 20% chance storm event. The proposed storm sewer system will extend from 5th Street to the north up to Lynn Avenue to reduce the spread of surface water draining down Dakota Street. The discharge point for the new storm sewer system will be the twin 36” diameter pipes at the intersection of 4th Street and Dakota Street. No downstream improvements to the City’s storm sewer system are planned with this project.

There is currently water distribution main within the Dakota Street corridor along the entire project. Existing water mains range from 2” in diameter to 8” in diameter and are either cast iron, ductile iron, PVC or asbestos cement pipes. Approximately 2,840 feet of new 12" diameter PVC water main is proposed to replace the existing water main along Dakota Street. This new 12” PVC main will become a portion of the main connection between the City’s ground storage reservoir located on the south edge of the community and the City’s elevated storage tank located on the northern edge of the community. Other water system improvements along Dakota Street include the addition of several main line valves to properly isolate the water system and the addition of several new fire hydrants to replace existing hydrants with small diameter barrels and pipe leads.

Due to the presence of multiple underground utilities, both public and private, within the street corridor, the proposed method of installing the utilities is by typical open-cut trenching. Horizontal

directional drilling or boring/jacking trenchless techniques are not recommended methods because of the numerous unknown conflicts with various utilities within the project corridor.

Operation and maintenance costs as a result of completing the project are not expected to change appreciably. The City is currently providing operation and maintenance on the existing aging utilities to be replaced within the project corridor. Once the utilities are replaced with new materials, City staff will continue to operate and maintain the systems as before the project.

An analysis of the net present value of each option is provided in Section 4 of this report. The net present value compares the initial capital cost, operation and maintenance costs and salvage values of each option. From that analysis, the option with the lowest net present value is Option 1. A detailed line item estimate of project costs is provided elsewhere within this facilities plan.

OPTION 1 DAKOTA STREET PHASE 1 IMPROVEMENTS – TOTAL CAPITAL COST SUMMARY

Work Items	Construction Subtotal	Engineering and Construction Admin	Legal/ Administration	Totals
General	$ 379,000	$ 57,000	$ 15,000	$ 451,000
Surfacing	$ 961,000	$ 144,000	$ 38,000	$ 1,143,000
Erosion Control	$ 35,000	$ 5,000	$ 1,000	$ 41,000
Traffic Control	$ 14,000	$ 2,000	$ 1,000	$ 17,000
Street Lighting	$ 52,000	$ 8,000	$ 2,000	$ 62,000
Storm Sewer	$ 428,000	$ 64,000	$ 17,000	$ 509,000
Water Main	$ 339,000	$ 51,000	$ 14,000	$ 404,000
Sanitary Sewer Main	$ 152,000	$ 23,000	$ 6,000	$ 181,000
TOTAL COST:	$ 2,360,000	$ 354,000	$ 94,000	$ 2,808,000

Project Implementation Schedule

Item	Date
• Preliminary Design	Ongoing
• Initiate Final Design	January 2016
• Draft Plans to City for Review	November 2016
• Advertise	January 2017
• Bid Letting	February 2017
• Award Contracts	March 2017
• Begin Construction	April/May 2017
• Complete Construction	November 2017

2. Project Development

Dakota Street in Canton is in need of new underground utilities and subsequent resurfacing. The exhibits on the following pages illustrate the project area in relation to the region and community of Canton.

Standing Water in Curb Line and Surface Cracking

The existing roadway consists of a deteriorating asphalt/concrete two-lane urban street section with concrete curb and gutter. The majority of the functional drainage capacity of the existing curb and gutter has been eliminated due to various asphalt overlays on the street over the past years. Numerous reflective cracks, raveling and potholes are evident along the existing street. Several potholes of various degrees are present along the project corridor. The City has patched and filled deficiencies in the pavement surfacing for several ongoing years to extend the life of the street.

Asphalt Overlay Delaminating from Underlying Concrete

Storm water fails to drain down the gutter. The water sits in the gutter until draining down thru cracks in the surfacing. This condition accelerates the deterioration of the surrounding surfacing.

Portions of the existing asphalt overlay have eroded away from the underlying concrete leaving potholes in the driving surface and again, accelerating the deterioration of the surrounding pavement.

Existing Sidewalk along Dakota Street

There are existing concrete sidewalks along the majority of the project in varying conditions. A portion of the existing sidewalk is shown in the following photograph taken after a rain event. Severe cracking and surface deformation is noticeable, a potential hazard to pedestrians using the sidewalks. Other sidewalk deformities included cracked panels and misaligned joints either in the vertical or horizontal plane. Very few sidewalks at the street intersections meet current ADA guidelines pertinent to curb ramps, landings and detectable warning panels.
The overall condition of the street is best described as a street that has been overlayed and patched numerous times with various deformities creating poor driving conditions

Deteriorated Approach - Blocking Drainage Thru Approach

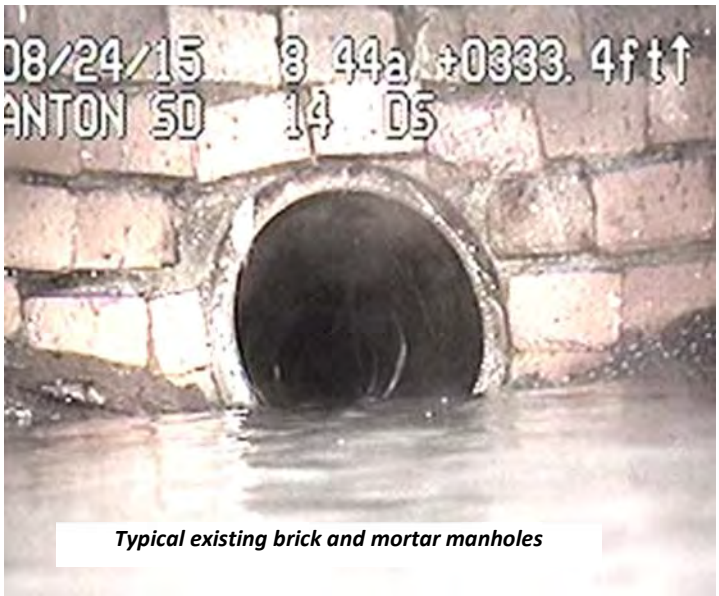
Storm Sewer:

The existing storm water system consists of various sizes of storm sewer pipe (PVC, VCP and RCP) between 4th Street and 1st Street along Dakota Street. At 4th Street, a pair of 36" diameter pipes convey storm water to the east and then south, eventually discharging to the Big Sioux River. The majority of the existing storm sewer system was installed with the original Dakota Street construction in approximately 1949. Various modifications and repairs to the existing storm sewer system have been made over the years.

The proposed municipal storm sewer system is comprised of a combination of reinforced concrete pipe, storm sewer junction boxes and inlets. The storm sewer system is designed to carry the runoff from a 20% chance storm event. The proposed storm sewer system will extend from 5th Street to the north up to Lynn Avenue to reduce the spread of surface water draining down Dakota Street. The discharge point for the new storm sewer system will be the twin 36" diameter pipes at the intersection of 4th Street and Dakota Street. No downstream improvements to the City's storm sewer system are planned with this project.

Sanitary Sewer:

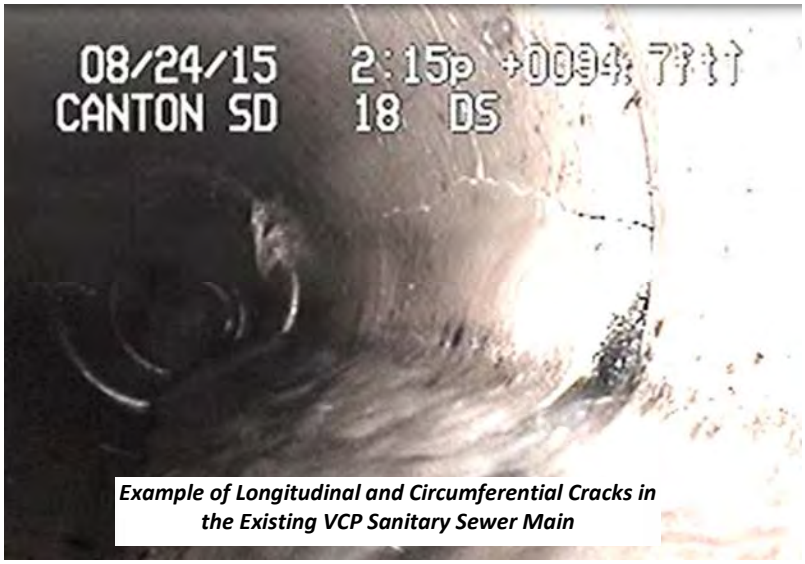
There is existing 8" diameter VCP sanitary sewer main on Dakota Street between 5th Street and 3rd Street and between 2nd Street and Lynn Avenue. The existing age of the sanitary sewer main is not certain but is estimated to be seventy-five years old or older, being constructed about the same time as the original street construction of Dakota Street. The existing manholes are typically brick and mortar construction exhibiting signs of open joints and mortar degradation. The existing mains are vitrified clay pipe with numerous joints and longitudinal and circumferential cracking. Tree roots are evident in numerous joints and cracks.



Typical existing brick and mortar manholes

The City of Canton is planning to replace the aging VCP mains and related sanitary sewer service lines within the project limits. This replacement of the sanitary main and services will result in less infiltration into the City's wastewater collection system and provide a reliable, long-term improvement to the system as a whole.

A portion of the existing sanitary main will be deepened to allow sanitary service to expand to an undeveloped portion of the City. The additional flow from the undeveloped land will not make a significant impact to the downstream collection system and no increases in pipes sizes are warranted.



Example of Longitudinal and Circumferential Cracks in the Existing VCP Sanitary Sewer Main

Section of existing main illustrating tree roots growing through the pipe joints and cracks

<u>Water Main:</u>
There is currently water distribution main within the Dakota Street corridor along the entire project. Existing water mains range from 2” in diameter to 8” in diameter and are either cast iron, ductile iron, PVC or asbestos cement pipes. The age of the existing water system is approximately seventy-five years and older. Records were not found to accurately verify the true age. The approximated age is based upon local knowledge and original road construction plans.

A new 12" diameter PVC water main is proposed to replace the existing water main along Dakota Street. This new 12” PVC main will become a portion of the main connection between the City’s ground storage reservoir located on the south edge of the community and the City’s elevated storage tank located on the northern edge of the community. The City’s hydraulic model of the distribution system indicates the proposed improvements to the water distribution system will impact a significant portion of the community by providing increased flows around the community. Other water system improvements along Dakota Street include the addition of several main line valves to properly isolate the water system and the addition of several new fire hydrants to replace existing hydrants with small barrels and pipe leads.

3. <u>Environmental Considerations</u>

In general, this section discusses the environmental resources within the project corridor. In review, the project corridor is Dakota Street between US Highway 18 and Lynn Avenue in Canton. Each alternative including the No Action alternative are addressed herein. This section identifies the existing conditions for each affected resource followed by potential direct impacts of the proposed alternatives and No Action alternative.

a. Floodplains

Existing Conditions: The City of Canton and Lincoln County participate in the National Flood Insurance Program. The project corridor contains no FEMA designated flood zones. The FIRM panel covering the project area is Panel 46083C0287 with an Effective Date of April 2, 2008.

Alternatives Impacts: Neither the No Action nor any of the project alternatives would have an impact on the FEMA designated flood zones.

b. Wetlands and Other Waters of the U.S.

Existing Conditions: A wetland survey along the project corridor was completed by Clark Engineering in 2014. No wetlands were found to be within the project limits.

Alternatives Impacts: Due to the absence of wetlands within the project corridor, neither the No Action nor any of the project alternatives would have wetland impacts.

c. Historical, Archaeological, Cultural Resources

Existing Conditions: Federal Agencies are required to determine if their projects impact historic properties that are listed on or eligible on the National Register of Historic Places (refer to Section 106 of the National Historic Preservation Act of 1966).

Patricia Downing with Prairie Lakes Archaeological Services performed a Level III cultural resources survey of the project corridor in June of 2014. The results of the survey indicated that no prehistoric, historic or architectural sites were found within the project corridor. It was recommended that a determination of No Historic Properties Affected be made for the project and that Section 106 Clearance be granted for the project. A copy of the Level III survey and the Cultural Resources Effects Assessment Summary are included in the appendices of this facilities plan.

Alternatives Impacts: Based on the Level III cultural resources survey, none of the project alternatives would have archaeological or cultural resources impacts. If evidence of any unrecorded or buried cultural resources is found during construction then all work should stop and the State Historic Preservation Officer should be notified of the find.

d. Noise

Existing Conditions: The project corridor falls within the City of Canton resulting in an existing level of noise due to the typical movement of vehicular and pedestrian traffic along the corridor.

Alternative Impacts: The No Action alternative would not impact the existing noise levels. The other project alternatives would not impact the long-term noise levels when compared to the existing noise levels. After construction, the project's function will be to move traffic through the corridor, the same as existing conditions.

For the other project alternatives, Best Management Practices will be employed to reduce the short-term noise levels typical of a construction project of this nature. BMPs will include not

allowing construction activities along the corridor in the early morning and evening hours nor on Sundays and holidays. The project alternatives will increase short-term noise levels but the implementing of the BMPs will lessen/minimize the short-term noise levels.

e. Agricultural Lands

Existing Conditions: Federal projects are required to minimize the conversion of farmland to nonagricultural uses (refer to Farmland Protection Act of 1981). Farmland is not present in the project corridor.

Alternative Impacts: Due to the absence of farmland within the project corridor, all alternatives will have no impacts to agricultural lands.

f. Wild and Scenic Rivers

The Wild and Scenic Rivers Act (and amendments thereto) describes the rivers designated on or eligible for the Wild and Scenic Rivers system. There are no such designated rivers within the project corridor. None of the project alternatives will have any impacts to wild and scenic rivers.

g. Fish and Wildlife Protection

Existing Conditions: Wildlife habitat within the project corridor consists of an urban area. In accordance with the Endangered Species Act (Section 7(c)), project information was provided to USFWS and SDGFP for consultation for the presence of threatened and endangered (T&E) species. A database of T&E species is maintained by the SDGFP.

The list of T&E species on the SDGFP database for Lincoln County was updated as of 8/10/2015. The list currently includes:

- Northern Redbelly Dace (State Threatened)
- Topeka Shiner (Federally Endangered)
- Lined Snake (State Endangered),
- Northern River Otter (State Threatened).

The Dace, Shiner and Otter are outside of the project corridor given the aquatic natures of the species. According to SDGFP information, the Lined Snake has a habitat consisting of open prairie hillsides and rocky, woodland areas and is generally found in extreme southeastern South Dakota including the majority of Lincoln County.

Alternative Impacts: The No Action alternative would have no impacts to T&E species or habitats.

For the Lined Snake, none of the proposed alternatives contain habit frequented by the Lined Snake so it is determined there will be no impact to the Lined Snake.

Letters received from USFWS and SDGFP dated 8/10/15 and 7/27/15, respectively, both indicate there will be no significant impacts on fish and wildlife resources due to the proposed project.

Copies of the correspondence with the agencies are provided in the appendices of this facilities plan.

h. Water Quality and Quantity

Existing Conditions: There are no waterways or related water systems within the project corridor. Storm water currently is collected in drainage inlets and is conveyed in a municipal storm sewer system. Overland storm water flow travels within urban street sections typically consisting of curb and gutter and paved street surfacing.

The existing sanitary sewer system consists of brick manholes and old vitrified clay pipe mains and service lines with numerous pipe joints showing visible signs of infiltration and root intrusion. Depending on the depth of the groundwater at any time there is potential for sanitary sewer flows to exfiltrate into the existing soil stratum and groundwater thru damaged portions of the pipe or non-functional pipe joints.

Alternative Impacts: The No Action alternative would have no impacts to water quality and quantity as this relates to the municipal storm sewer system. In regards to the sanitary sewer collections system, the existing system would continue to age and deteriorate likely increasing the frequency and quantity of sanitary sewer flows exfiltrating into the soils and groundwater.

The proposed alternatives would have no long-term impacts to water quality and quantity as this relates to the municipal storm sewer system. In regards to the sanitary sewer collection system, improvements to the collection system will eliminate or significantly decrease the potential of sanitary sewer flows exfiltrating into the soils and groundwater.

A Stormwater Pollution Prevention Plan (SWPPP) is required during construction of the selected alternative to prevent erosion. Requirements of the SWPPP include temporary and permanent erosion control measures and the reestablishing vegetation following construction. BMPs will be implemented to minimize impacts to adjacent and downstream areas.

i. Regulated Materials

Existing Conditions: Properties where hazardous materials have spilled or leaked into the soils may present a risk to the project due to the liability and potential high costs associated with cleanup. There may also be concerns over exposure to contaminants in the soils, groundwaters or surface waters.

A search of the SDDENR Spills database was conducted to determine the presence of any known spills in the project corridor. One site was identified (DENR # 93.307) located in the northwest quadrant of the US Hwy 18 and Dakota Street intersection which is generally located at the south end of the project corridor. The address of the property is 324 E. 5th Street. The site status has been closed as of June 16, 2003 (see attached documentation in the appendices).

Alternative Impacts: Neither the No Action alternative nor the other project alternatives would impact or be impacted by regulated materials. The project contractor should be made aware of the discovery of any oil drums or underground storage tanks or of any areas containing soil

staining or soils with objectionable odors. If such items are found, no additional work in the area shall take place until the SDDENR is contacted.

j. Air Quality

Existing Conditions: The U.S. Environmental Protection Agency (USEPA) regulates air quality impart by primary and secondary National Ambient Air Quality standards. Sioux Falls has a monitoring site tracking the concentrations of regulated pollutants including particulate matter, sulfur dioxide, carbon monoxide, nitrogen dioxide and ozone. The project corridor is currently in attainment for ambient air quality as measured at the Sioux Falls monitoring site.

Alternative impacts: The No Action alternative would have no impacts on air quality. For other project alternatives, construction activities may result in short-term increases of air emissions. During construction, air emissions can be minimized by smooth traffic-flow patterns and implementation of dust control measures including regular watering schedules, if needed.

k. Mitigation Actions

Selected Alternative: The following mitigation items will be implemented as part of the selected alternative for the project construction.

- Floodplains. No FEMA regulated floodplains are within or impacted by the project.
- Wetlands and Other Waters of the U.S.. No wetlands or related Waters of the U.S. are within or are impacted by the project.
- Historical, Archaeological, Cultural Resources. If evidence of any unrecorded or buried cultural resources is found during construction then all work should stop and the State Historic Preservation Officer should be notified of the find.
- Noise. Best Management Practices will be employed to reduce the short-term noise levels typical of a construction project of this nature. BMPs will include not allowing construction activities along the corridor in the early morning and evening hours nor on Sundays and holidays.
- Agricultural Lands. No agricultural lands are impacted by the project.
- Wild and Scenic Rivers. No waterbody designated as or eligible for inclusion under the Wild and Scenic Rivers act is impacted by this project.
- Fish and Wildlife Protection. No T&E species are expected to be present or impacted by this project. If any T&E species are found on the project site during construction, the appropriate agencies will be notified.
- Water Quality and Quantity. Water quantity will not impacted by the selected alternative. NPDES regulations require erosion control measures be implemented. A SWPPP will be prepared for the project requiring the contractor to provide temporary

and permanent erosion control measures to minimize erosion and sediment runoff due to construction activities.

- Regulated Materials. The project contractor should be made aware of the discovery of any oil drums or underground storage tanks or of any areas containing soil staining or soils with objectionable odors during construction. If such items are found, no additional work in the area shall take place until the SDDENR is contacted.

- Air Quality. During construction, air emissions can be minimized by smooth traffic-flow patterns and implementation of dust control measures including regular watering schedules, if needed.

4. Alternative Development and Selection

Three project alternatives are discussed below:

- No Action Alternative
- Option 1: Open Trench Construction
- Option 2: Trenchless Technology Construction

a. No Action Alternative

Based on the deteriorating conditions of both the City's underground infrastructure and the existing street surfacing, it is not recommended that the City adopt the No Action alternative. If the No Action Alternative is selected, the following items, at a minimum, should be anticipated:

- Initially perform a mill and overlay of the existing street surface and remove and replace the worst sections of existing curb and gutter.
- In year ten, perform an overlay of the existing surface to extend the street life an additional five to eight years.
- In year fifteen, plan to totally reconstruct the street and utilities.

b. Option 1: Open Trench Construction

It is recommended the improvements to the water distribution system, sanitary sewer collection system and the storm sewer system be constructed utilizing typical open-trench construction techniques. Option 1 represents the most cost effective measure for the City to construct the project in its entirety. The existing street surfacing has deteriorated and the functional capacity of the existing gutters to convey stormwater has diminished due to previous overlays.

The estimated total capital project cost for Option 1 is $2,808,000. The general breakdown of costs is shown in the following table:

Summary of Project Costs – Option 1

Work Items	Construction Subtotal	Engineering and Construction Admin	Legal/ Administration	Totals
General	$ 379,000	$ 57,000	$ 15,000	$ 451,000
Surfacing	$ 961,000	$ 144,000	$ 38,000	$ 1,143,000
Erosion Control	$ 35,000	$ 5,000	$ 1,000	$ 41,000
Traffic Control	$ 14,000	$ 2,000	$ 1,000	$ 17,000
Street Lighting	$ 52,000	$ 8,000	$ 2,000	$ 62,000
Storm Sewer	$ 428,000	$ 64,000	$ 17,000	$ 509,000
Water Main	$ 339,000	$ 51,000	$ 14,000	$ 404,000
Sanitary Sewer Main	$ 152,000	$ 23,000	$ 6,000	$ 181,000
TOTAL COST:	$ 2,360,000	$ 354,000	$ 94,000	$ 2,808,000

Advantages:

- The existing street surfacing is in need of replacement. Due to the nature of the open trench technique, the majority of the existing surfacing will be removed to install the underground utilities. Replacing the existing street surfacing allows for recommended improvements to the storm water drainage system by increasing the capacity of the gutter system. Over the past years the capacity of the existing gutters has been minimized by overlays extending into the gutters to the face of the curb. The need to save the existing surfacing is not present with this project.
- All piping and appurtenant materials (valves, hydrants, fittings, manholes, and both water and sewer service lines) will be replaced with new materials likely extending the useful life of the utilities for fifty years or more.
- Sags in the existing sanitary sewer mains can be eliminated.
- Improved as-constructed records of underground facilities and soil conditions within the project corridor. Types, sizes, locations and depths of all private/public utilities can be accurately measured and recorded for future reference.
- Does not require cleaning of the sanitary sewer main prior to replacement nor the removal of tree roots or other debris form the sewer main.
- Ensure all required horizontal and vertical separation requirements are adhered to for the water main placement.

Disadvantages:

- Additional site restoration including increased amount of pavement removal and replacement necessary when compared to Option 2.
- Increases the level of short-term construction noise and emissions as compared to Option 2.
- Maximizes the potential for disturbing other private/public utilities during construction.
- Risk of job site injury inherently increases with deep open trenches as compared to Option 2.
- Longer construction time as compared to Option 2.

The costs for operating and maintaining the proposed water, sanitary and storm systems as well as replacing the systems in the future will be the same for both Option 1 and Option 2. There is no anticipated salvage value to the proposed systems once the systems have reached their respected useful lives.

c. Option 2: Trenchless Technology Construction

This option includes horizontal directional drilling of new water main, sanitary sewer main lining (CIPP), and sanitary manhole rehabilitation by lining. Due to the shallow depths of the proposed storm sewer system, this option includes the installation of the new storm sewer system by open trench construction.

The existing street surfacing along the project corridor needs to be replaced. Any surfacing that is not removed because of the trenchless installation will be removed and replaced by the City on a non-participating cost basis.

The estimated participating total capital project cost for Option 2 is $1,848,000 and the non-participating cost is $990,000. The total capital project cost to the City is estimated to be $2,838,000. The general breakdown of costs is shown in the following table:

Summary of Project Costs – Option 2

Work Items	Participating (DW and CW) Project Costs			NON-Participating Project Costs		
	Construction Subtotal	Engineering and Construction Admin	Totals	Construction Subtotal	Engineering and Construction Admin	Totals
General	$ 184,000	$ 27,500	$ 211,500	$ 175,000	$ 26,300	$ 201,300
Surfacing	$ 393,000	$ 55,700	$ 448,700	$ 585,000	$ 86,900	$ 671,900
Erosion Control	$ 16,000	$ 2,300	$ 18,300	$ 26,000	$ 3,800	$ 29,800
Traffic Control	$ 18,000	$ 2,800	$ 20,800	$ -	$ -	$ -
Street Lighting	$ -	$ -	$ -	$ 47,000	$ 7,000	$ 54,000
Storm Sewer	$ 388,000	$ 58,200	$ 446,200	$ -	$ -	$ -
Water Main	$ 375,000	$ 56,200	$ 431,200	$ -	$ -	$ -
Sanitary Sewer Main	$ 182,000	$ 27,300	$ 209,300	$ -	$ -	$ -
Legal/Administration	$ 62,000		$ 62,000	$ 33,000	$ -	$ 33,000
TOTAL COSTS:	$ 1,618,000	$ 230,000	$ 1,848,000	$ 866,000	$ 124,000	$ 990,000

Advantages:

- If the street was not in need of full replacement, Option 2 would reduce the amount of street surfacing requiring removal and replacement.
- Potential to reduce noise and emissions resulting from construction activities.
- Minimize the potential for disturbing other private/public utilities during construction.
- Increase job site safety by eliminating deep open trenches.
- Reduce construction time.

Disadvantages:

- Still requires substantial removal of existing street surfacing for installation of the storm sewer system, installation of new water main fittings, hydrants and valves, installation of new water service lines, and connections to the existing water system.
- Requires the sanitary sewer main to be cleaned and all roots and debris removed from the main prior to CIPP lining.
- This option does not replace the aging sanitary sewer service lines within the street right-of-way. The existing services are reinstated internal to the main after the pipe lining is completed.
- This option does not replace the aging water service lines within the street. Open trench excavation will be needed to tie-over each water service to the new HDD water main.
- CIPP lining of the existing sanitary sewer main will not eliminate any existing sags in the sewer main.

- In an urban established corridor with multiple utilities (both private and public), it is difficult to maintain required water main separations from the other utilities. For example, the new HDD water main will be immediately adjacent to or under existing storm sewer main that will be abandoned in place to save the cost of pavement removal. This will make future repairs on the water main more difficult.

The costs for operating and maintaining the proposed water, sanitary and storm systems as well as replacing the systems in the future will be the same for both Option 1 and Option 2. There is no anticipated salvage value to the proposed systems once the systems have reached their respected useful lives.

d. Net Present Worth Evaluation of Options

The following table represents the present worth of each of the three project options.

		Option 1	Option 2
	No Action Alternative	**Open Trench Construction**	**Trenchless Technology Construction**
Total Capital Cost	**$ 379,400**	**$ 2,808,000**	**$ 2,838,000**
Present Worth of Annual O&M	**$ 162,200**	**$ 136,200**	**$ 136,200**
Present Worth of Street Overlay at Year 10	**$ 188,000**	**$ -**	**$ -**
Present Worth of Total Reconstruct at Year 15	**$ 2,980,000**	**$ -**	**$ -**
Present Worth of Salvage Value	**$ -**	**$ -**	**$ -**
Net Present Value	**$ 3,709,600**	**$ 2,944,200**	**$ 2,974,200**

Assumptions and variables used in the above present value evaluation.

1. If No Action alternative is selected, at a minimum, a mill and overlay of the existing street is recommended to extend the life of the street. At some point within the twenty year design period, total reconstruction of the street and utilities should be anticipated and planned for.
2. Cost of construction inflation was assumed to be 4% annually.
3. The discount rate was assumed to be 3.519% which was obtained from the South Dakota Department of Legislative Audit.
4. Operation and maintenance costs were extrapolited from City budgetary numbers. Historical records of annual maintenance costs on a per street block or per underground utility were not available. Operation and maintenance costs were assumed to increase with the age of the street and utility.
5. A design period of 20 years was used.
6. The accounting procedure for the City sets the salvage value of street and underground utility assets at zero using straight line depreciation methods.

e. Nonmonetary Evaluation of Options

The following table contains several nonmonetary project factors that have been ranked for each of the three project options. This evaluation provides a qualitative means of evaluating each of the project options. The higher the ranking on a scale of 1 to 5 indicates a more positive or favorable condition.

Nonmonetary Factors

No Action Alternative
Option 1 - Open Trench Construction
Option 2 - Trenchless Technology Construction

	No Action	Option 1	Option 2	General Comments
National, Regional, State, or Local Priorities				
Region-specific considerations including water quality objectives/initiatives	2	5	5	Options 1 and 2 reduce infiltration by replacing deteriorating pipes.
Consolidation/regionalization	1	1	1	No option is part of a regionalization plan.
Reduce Contaminants	1	5	5	Options 1 and 2 reduce infiltration by replacing deteriorating pipes.
Technical Factors				
Project Location and Physical Aspects	2	5	5	Options 1 and 2 provide required separation clearances between utilities.
Project Reliability	2	5	5	Options 1 and 2 reduce occurrences of pipe failures.
Constructability	4	5	1	Existing corridor with several existing private/public utilities difficult for trenchless methods.
Presence of qualified personnel to operate and maintain infrastructure	5	5	5	Current City staff profient in O&M of all municipal utility systems.
Environmental Factors				
Floodplains	5	5	5	No option impacts FEMA identified floodplains.
Wetlands and other waters of the US	5	5	5	No option impacts identified wetlands or other waters of the US.
Historical, archaelogical, cultural resources	5	5	5	No option impacts identified cultural resources.
Noise	4	3	3	The length of temporary construction noise longer with Options 1 and 2.
Fish and wildlife protection	5	4	4	Options 1 and 2 require tree removals.
Water quality and quantity	2	5	5	Options 1 and 2 reduce infiltration by replacing deteriorating pipes.
Air quality	4	3	3	Temporary air emmissions from construction vehicles are greater with Options 1 and 2.
Opportunities for water conservation, reuse, and/or recapture	1	5	5	Options 1 and 2 reduce infiltration by replacing deteriorating pipes.
Socioeconomic Factors				
Project acceptability/affordability	2	5	4	Based on total project costs for each option.
Summation of Rating Factors	**50**	**71**	**66**	

Rating System
5: Most Favorable
4: Advantageous
3: Average
2: Detrimental
1: Least Favorable

5. Financing and User Fee Impact

Option 1 – Open Trench Construction is the recommended option at a total capital cost of $2,808,000. The proposed project financing and user rates impact are as follows:

Clean Water SRF Loan Rate: 3.25% for 30 year term User Impact: $5.45 per User per month	$1,648,000
Drinking Water SRF Loan Rate: 3.00% for 30 year term User Impact: $2.41 per User per month	$ 760,000
Community Access Grant	$ 400,000
Total Funding:	$2,808,000

The City is in the process of applying for other grant funding for the project. If additional grant funds were to be awarded to the City, the loan amounts and associated user impact fees would likely decrease accordingly with the value of the grant.

6. Public Participation

A public hearing to discuss the project was held at the City Commission Chambers in Canton on December 21, 2015. The "Notice to Public Hearing" was published in the City's legal newspaper at least ten days prior to the public hearing. A copy of the affidavit of publication as well as the minutes from the public meeting are enclosed in the appendices of this facilities plan. The following items were generally discussed at the public hearing:

- Project description and need
- Project alternatives and related present worth costs
- Proposed financing for the project (identify anticipated SRF loan amounts)
- Proposed revenue sources for repayment of loan funds
- Terms of the SRF loan(s)
- User rate impacts

7. APPENDICES

The following items are included in the appendices of this Facilities Plan:

a. SD DENR Cost and Effectiveness Certification Form

b. Itemized Present Worth Cost Estimates for Option 1

c. Itemized Present Worth Cost Estimates for Option 2

d. Cultural Resources Effects Assessment Summary

e. Correspondence with Reviewing Agencies

f. SD DENR No Further Action Letter Regarding Petroleum Spill (DENR # 93.307)

g. Notice of Public Hearing, Affidavit of Publication, and Public Hearing Minutes

h. Project Location Maps

i. Preliminary Plan and Profile Drawings

a. SD DENR Cost and Effectiveness Certification Form

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name: City of Canton, South Dakota

Project Name: Dakota Street Project - Phase 1

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature:

Printed Name: Chuck Smith

Title: Mayor

Date: 12/21/15

Project Engineer

Signature:

Printed Name: Myron Adam

License #: SD 6790

Date: 12/21/15

b. Itemized Capital Project Cost Estimate for Option 1

Prepared by:
JSA Engineers/Land Surveyors
12/23/2015

Option 1 - Open Trench Construction
DAKOTA STREET IMPROVEMENTS - PHASE 1
(US HWY 18 TO LYNN STREET)
CANTON, SOUTH DAKOTA
PRELIMINARY PROJECT ESTIMATE

LINE ITEM	DESCRIPTION	UNITS	PHASE 1 TOTAL QUANTITY	UNIT PRICE	DW-SRF QUANTITY	DW-SRF PRICE	CW-SRF QUANTITY	CW-SRF PRICE	PHASE 1 TOTAL PRICE
	GENERAL								
1	MOBILIZATION	LS	1	$96,460.00	0.33	$31,831.80	0.67	$64,628.20	$96,460.00
2	CLEAR AND GRUB TREE	EACH	41	$500.00	13.53	$6,765.00	27.47	$13,735.00	$20,500.00
3	REMOVE TRAFFIC SIGN	EACH	25	$25.00	8.25	$206.25	16.75	$418.75	$625.00
4	REMOVE CONCRETE CURB AND GUTTER	FT	4275	$3.00	1410.75	$4,232.25	2864.25	$8,592.75	$12,825.00
5	REMOVE DROP INLET	EACH	10	$500.00	3.3	$1,650.00	6.7	$3,350.00	$5,000.00
6	REMOVE JUNCTION BOX	EACH	5	$500.00	1.65	$825.00	3.35	$1,675.00	$2,500.00
7	REMOVE SANITARY MANHOLE	EACH	9	$910.50	2.97	$2,704.19	6.03	$5,490.32	$8,194.50
8	REMOVE FIRE HYDRANT	EACH	6	$400.00	1.98	$792.00	4.02	$1,608.00	$2,400.00
9	REMOVE SANITARY SEWER PIPE	FT	2736	$5.00	902.88	$4,514.40	1833.12	$9,165.60	$13,680.00
10	REMOVE STORM SEWER PIPE	FT	1305	$10.00	430.65	$4,306.50	874.35	$8,743.50	$13,050.00
11	REMOVE WATER MAIN	FT	3167	$12.00	1045.11	$12,541.32	2121.89	$25,462.68	$38,004.00
12	REMOVE WATER VALVE	EACH	13	$105.00	4.29	$450.45	8.71	$914.55	$1,365.00
13	REMOVE ASPHALT CONCRETE COMPOSITE	SQ YD	1263	$2.00	416.79	$833.58	846.21	$1,692.42	$2,526.00
14	REMOVE PCC PAVEMENT	SQ YD	10345	$4.00	3413.85	$13,655.40	6931.15	$27,724.60	$41,380.00
15	REMOVE CONCRETE APPROACH PAVEMENT	SQ YD	1001	$4.00	330.33	$1,321.32	670.67	$2,682.68	$4,004.00
16	REMOVE CONCRETE SIDEWALK	SQ YD	3746	$3.00	1236.18	$3,708.54	2509.82	$7,529.46	$11,238.00
17	SALVAGE TRAFFIC SIGN AND RESET	EACH	25	$30.00	8.25	$247.50	16.75	$502.50	$750.00
18	SAW EXISTING ASPHALT	FT	446	$3.50	147.18	$515.13	298.82	$1,045.87	$1,561.00
19	SAW EXISTING PCC CONCRETE	FT	1160	$5.55	382.8	$2,124.54	777.2	$4,313.46	$6,438.00
20	UNCLASSIFIED EXCAVATION	CU YD	4131	$4.00	1363.23	$5,452.92	2767.77	$11,071.08	$16,524.00
21	UNCLASSIFIED EXCAVATION, DIGOUTS	CU YD	413	$6.00	136.29	$817.74	276.71	$1,660.26	$2,478.00
22	UNCLASSIFIED GRADE STABILIZATION	CU YD	1240	$7.00	409.2	$2,864.40	830.8	$5,815.60	$8,680.00
23	SCARIFY AND RECOMPACT SUBGRADE	SQ YD	12392	$0.56	4089.36	$2,290.04	8302.64	$4,649.48	$6,939.52
24	WATER FOR EMBANKMENT	MGAL	33	$8.00	10.89	$87.12	22.11	$176.88	$264.00
25	PLACING CONTRACTOR FURNISHED TOPSOIL	CU YD	886	$15.00	292.38	$4,385.70	593.62	$8,904.30	$13,290.00
26	INCIDENTAL WORK, GRADING	LS	1	$5,500.00	0.33	$1,815.00	0.67	$3,685.00	$5,500.00
27	INCIDENTAL WORK, UTILITIES	LS	1	$2,575.00	0.33	$849.75	0.67	$1,725.25	$2,575.00
28	LOCATING UTILITY	EACH	10	$100.00	3.3	$330.00	6.7	$670.00	$1,000.00
29	VERIFY UTILITY	EACH	10	$100.00	3.3	$330.00	6.7	$670.00	$1,000.00
	SURFACING								
30	WATER FOR GRANULAR MATERIAL	MGAL	149	$15.00	49.17	$737.55	99.83	$1,497.45	$2,235.00
31	BASE COURSE	TON	12409	$12.00	4094.97	$49,139.64	8314.03	$99,768.36	$148,908.00
32	GRAVEL CUSHION	TON	404	$12.00	133.32	$1,599.84	270.68	$3,248.16	$4,848.00
33	ASPHALT CONCRETE COMPOSITE	TON	223	$90.00	73.59	$6,623.10	149.41	$13,446.90	$20,070.00
34	8" NONREINFORCED PCC PAVEMENT	SQ YD	9217	$41.00	3041.61	$124,706.01	6175.39	$253,190.99	$377,897.00
35	CONCRETE CURB AND GUTTER - TYPE SF68	FT	4275	$16.00	1410.75	$22,572.00	2864.25	$45,828.00	$68,400.00
36	CONCRETE VALLEY CUTTER, 8" THICK	SQ YD	396	$65.00	130.68	$8,494.20	265.32	$17,245.80	$25,740.00
37	8" PCC FILLET SECTION	SQ YD	369	$75.00	121.77	$9,132.75	247.23	$18,542.25	$27,675.00
38	6" PCC APPROACH PAVEMENT	SQ YD	386	$46.45	127.38	$5,916.80	258.62	$12,012.90	$17,929.70
39	8" PCC APPROACH PAVEMENT	SQ YD	615	$50.00	202.95	$10,147.50	412.05	$20,602.50	$30,750.00
40	4" CONCRETE SIDEWALK	SQ FT	21539	$4.05	7107.87	$28,786.87	14431.13	$58,446.08	$87,232.95
41	6" CONCRETE SIDEWALK	SQ FT	2600	$4.40	858	$3,775.20	1742	$7,664.80	$11,440.00
42	8" CONCRETE SIDEWALK	SQ FT	1225	$4.80	404.25	$1,940.40	820.75	$3,939.60	$5,880.00
43	MSE RETAINING WALL	LS	1	$25,000.00	0.33	$8,250.00	0.67	$16,750.00	$25,000.00
44	GEOTEXTILE FABRIC FOR SUBGRADE STABILIZATION	SQ YD	12392	$2.50	4089.36	$10,223.40	8302.64	$20,756.60	$30,980.00
45	DETECTABLE WARNING SURFACE	SQ FT	224	$44.00	73.92	$3,252.48	150.08	$6,603.52	$9,856.00
	EROSION CONTROL								
46	WATER FOR VEGETATION	MGAL	287	$3.72	94.71	$352.32	192.29	$715.32	$1,067.64
47	SPECIAL PERMANENT SEED MIXTURE 1	LB	222	$15.00	73.26	$1,098.90	148.74	$2,231.10	$3,330.00
48	FERTILIZING	LB	74	$0.70	24.42	$17.09	49.58	$34.71	$51.80
49	BONDED FIBER MATRIX	TON	1.5	$2,400.00	0.495	$1,188.00	1.005	$2,412.00	$3,600.00
50	3" CALIPER DECIDUOUS TREE, FURNISH AND PLANT	EACH	40	$370.00	13.2	$4,884.00	26.8	$9,916.00	$14,800.00
51	WEED CONTROL	LS	1	$210.00	0.33	$69.30	0.67	$140.70	$210.00
52	INLET PROTECTION	EACH	50	$70.75	16.5	$1,167.38	33.5	$2,370.13	$3,537.50
53	SWEEPING	HOUR	25	$130.00	8.25	$1,072.50	16.75	$2,177.50	$3,250.00
54	TEMPORARY VEHICLE TRACKING CONTROL	EACH	2	$569.68	0.66	$375.99	1.34	$763.37	$1,139.36
55	CONCRETE WASHOUT AREA	EACH	1	$810.77	0.33	$267.55	0.67	$543.22	$810.77
	TRAFFIC CONTROL								
56	TRAFFIC CONTROL	UNIT	7000	$1.20	2310	$2,772.00	4690	$5,628.00	$8,400.00
57	TRAFFIC CONTROL MISCELLANEOUS	LS	1	$5,000.00	0.33	$1,650.00	0.67	$3,350.00	$5,000.00
	STREET LIGHTING								
58	BREAKAWAY BASE LUMINAIRE POLE WITH ARM - 35' HEIGHT	EACH	7	$3,900.00	2.31	$9,009.00	4.69	$18,291.00	$27,300.00
59	2' DIAMETER FOOTING	EACH	7	$100.00	2.31	$231.00	4.69	$469.00	$700.00
60	TIE TO EXISTING CONDUIT	EACH	1	$100.00	0.33	$33.00	0.67	$67.00	$100.00
61	2" RIGID CONDUIT, SCHEDULE 40	FT	1842	$2.78	607.86	$1,689.85	1234.14	$3,430.91	$5,120.76
62	2" RIGID CONDUIT, SCHEDULE 80	FT	468	$10.36	154.44	$1,600.00	313.56	$3,248.48	$4,848.48

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12/23/2015

Option 1 - Open Trench Construction
DAKOTA STREET IMPROVEMENTS - PHASE 1
(US HWY 18 TO LYNN STREET)
CANTON, SOUTH DAKOTA
PRELIMINARY PROJECT ESTIMATE

LINE ITEM	DESCRIPTION	UNITS	PHASE 1 TOTAL QUANTITY	UNIT PRICE	DW-SRF QUANTITY	DW-SRF PRICE	CW-SRF QUANTITY	CW-SRF PRICE	PHASE 1 TOTAL PRICE
63	STREET LIGHT WIRE	FT	2168	$4.00	715.44	$2,861.76	1452.56	$5,810.24	$8,672.00
	STORM SEWER								
64	18" RCP CLASS 3, FURNISH	FT	855	$25.07	0	$0.00	855	$21,434.85	$21,434.85
65	18" RCP, INSTALL	FT	855	$29.43	0	$0.00	855	$25,162.65	$25,162.65
66	24" RCP CLASS 3, FURNISH	FT	351	$33.79	0	$0.00	351	$11,860.29	$11,860.29
67	24" RCP, INSTALL	FT	351	$29.43	0	$0.00	351	$10,329.93	$10,329.93
68	30" RCP CLASS 3, FURNISH	FT	1559	$48.51	0	$0.00	1559	$75,627.09	$75,627.09
69	30" RCP, INSTALL	FT	1559	$31.61	0	$0.00	1559	$49,279.99	$49,279.99
70	36" RCP CLASS 3, FURNISH	FT	370	$76.30	0	$0.00	370	$28,231.00	$28,231.00
71	36" RCP, INSTALL	FT	370	$34.88	0	$0.00	370	$12,905.60	$12,905.60
72	STANDARD STORM SEWER JUNCTION BOX, TYPE 1	EACH	11	$3,000.00	0	$0.00	11	$33,000.00	$33,000.00
73	STANDARD STORM SEWER INLET, TYPE B1	EACH	2	$1,000.00	0	$0.00	2	$2,000.00	$2,000.00
74	STANDARD 10' - 0" S.F. SUMP TYPE STORM SEWER INLET	EACH	31	$3,000.00	0	$0.00	31	$93,000.00	$93,000.00
75	TYPE B FRAME AND GRATE	EACH	2	$664.40	0	$0.00	2	$1,328.80	$1,328.80
76	TYPE Y MANHOLE FRAME AND LID	EACH	31	$400.00	0	$0.00	31	$12,400.00	$12,400.00
77	MANHOLE FRAME AND COVER	EACH	11	$498.65	0	$0.00	11	$5,485.15	$5,485.15
78	ADJUST MANHOLE	EACH	11	$528.58	0	$0.00	11	$5,814.38	$5,814.38
	WATERMAIN								
79	TRENCH STABILIZATION	TON	50	$25.00	50	$1,250.00	0	$0.00	$1,250.00
80	SELECT FILL	TON	100	$15.00	100	$1,500.00	0	$0.00	$1,500.00
81	4" C900 DR18 PVC WATERMAIN	FT	169	$20.25	169	$3,422.25	0	$0.00	$3,422.25
82	6" C900 DR18 PVC WATERMAIN	FT	333	$22.35	333	$7,442.55	0	$0.00	$7,442.55
83	8" C900 DR18 PVC WATERMAIN	FT	492	$25.62	492	$12,605.04	0	$0.00	$12,605.04
84	12" C900 DR18 PVC WATERMAIN	FT	2839	$38.00	2839	$107,882.00	0	$0.00	$107,882.00
85	6" GATE VALVE WITH BOX	EACH	6	$1,060.00	6	$6,360.00	0	$0.00	$6,360.00
86	8" GATE VALVE WITH BOX	EACH	10	$1,500.00	10	$15,000.00	0	$0.00	$15,000.00
87	12" GATE VALVE WITH BOX	EACH	12	$2,490.65	12	$29,887.80	0	$0.00	$29,887.80
88	VALVE BOX ADJUSTMENTS	EACH	28	$200.00	28	$5,600.00	0	$0.00	$5,600.00
89	4" MJ ELBOW 45 DEGREE	EACH	8	$150.00	8	$1,200.00	0	$0.00	$1,200.00
90	6" MJ ELBOW 45 DEGREE	EACH	6	$250.00	6	$1,500.00	0	$0.00	$1,500.00
91	8" MJ ELBOW 45 DEGREE	EACH	2	$298.00	2	$596.00	0	$0.00	$596.00
92	12" MJ ELBOW 45 DEGREE	EACH	2	$446.45	2	$892.90	0	$0.00	$892.90
93	12" X 6" MJ TEE	EACH	6	$527.95	6	$3,167.70	0	$0.00	$3,167.70
94	12" X 8" MJ TEE	EACH	2	$550.00	2	$1,100.00	0	$0.00	$1,100.00
95	12" X 12" MJ TEE	EACH	2	$787.09	2	$1,574.18	0	$0.00	$1,574.18
96	8" X 4" MJ REDUCER	EACH	6	$238.17	6	$1,429.02	0	$0.00	$1,429.02
97	8" X 6" MJ REDUCER	EACH	3	$250.70	3	$752.10	0	$0.00	$752.10
98	12" X 8" MJ CROSS	EACH	4	$1,100.00	4	$4,400.00	0	$0.00	$4,400.00
99	12" MJ PLUG	EACH	2	$300.00	2	$600.00	0	$0.00	$600.00
100	4" MJ OVERSIZED SLEEVE	EACH	6	$300.00	6	$1,800.00	0	$0.00	$1,800.00
101	6" MJ OVERSIZED SLEEVE	EACH	3	$360.00	3	$1,080.00	0	$0.00	$1,080.00
102	8" MJ OVERSIZED SLEEVE	EACH	1	$410.00	1	$410.00	0	$0.00	$410.00
103	4" MJ RETAINER GLAND	EACH	34	$36.24	34	$1,232.16	0	$0.00	$1,232.16
104	6" MJ RETAINER GLAND	EACH	45	$75.00	45	$3,375.00	0	$0.00	$3,375.00
105	8" MJ RETAINER GLAND	EACH	45	$68.86	45	$3,098.70	0	$0.00	$3,098.70
106	12" MJ RETAINER GLAND	EACH	60	$116.33	60	$6,979.80	0	$0.00	$6,979.80
107	WATERMAIN ADJUSTMENT	EACH	4	$1,500.00	4	$6,000.00	0	$0.00	$6,000.00
108	FIRE HYDRANT	EACH	6	$3,100.00	6	$18,600.00	0	$0.00	$18,600.00
109	TEMPORARY FIRE HYDRANT	EACH	5	$1,535.00	5	$7,675.00	0	$0.00	$7,675.00
110	CUT AND TIE TO EXISTING WATERMAIN	EACH	11	$1,312.08	11	$14,432.88	0	$0.00	$14,432.88
111	4" WATERMAIN BEDDING	FT	169	$3.27	169	$552.63	0	$0.00	$552.63
112	6" WATERMAIN BEDDING	FT	333	$4.00	333	$1,332.00	0	$0.00	$1,332.00
113	8" WATERMAIN BEDDING	FT	492	$4.00	492	$1,968.00	0	$0.00	$1,968.00
114	12" WATERMAIN BEDDING	FT	2839	$4.70	2839	$13,343.30	0	$0.00	$13,343.30
115	12" X 1" WATER SERVICE TAP, SADDLE, AND CORP. STOP	EACH	9	$500.00	9	$4,500.00	0	$0.00	$4,500.00
116	1" COPPER SERVICE LINE	FT	242	$25.00	242	$6,050.00	0	$0.00	$6,050.00
117	1" CURB BOX WITH VALVE	EACH	9	$300.00	9	$2,700.00	0	$0.00	$2,700.00
118	WATER SERVICE RECONNECT	EACH	9	$400.00	9	$3,600.00	0	$0.00	$3,600.00
	SANITARY SEWER								
119	TRENCH STABILIZATION MATERIAL	TON	50	$25.00	0	$0.00	50	$1,250.00	$1,250.00
120	TEMPORARY SEWER BYPASS	LS	1	$5,000.00	0	$0.00	1	$5,000.00	$5,000.00
121	8" SANITARY SEWER PIPE 6' - 8' DEEP	FT	437	$24.00	0	$0.00	437	$10,488.00	$10,488.00
122	8" SANITARY SEWER PIPE 8' - 10' DEEP	FT	753	$26.00	0	$0.00	753	$19,578.00	$19,578.00
123	8" SANITARY SEWER PIPE 10' - 12' DEEP	FT	598	$30.00	0	$0.00	598	$17,940.00	$17,940.00
124	8" SANITARY SEWER PIPE 12' - 14' DEEP	FT	229	$34.00	0	$0.00	229	$7,786.00	$7,786.00
125	8" SANITARY SEWER PIPE 14' - 16' DEEP	FT	162	$40.00	0	$0.00	162	$6,480.00	$6,480.00
126	8" SANITARY SEWER PIPE 16' - 18' DEEP	FT	162	$48.00	0	$0.00	162	$7,776.00	$7,776.00

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Option 1 - Open Trench Construction
DAKOTA STREET IMPROVEMENTS - PHASE 1
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CANTON, SOUTH DAKOTA
PRELIMINARY PROJECT ESTIMATE

LINE ITEM	DESCRIPTION	UNITS	PHASE 1 TOTAL QUANTITY	UNIT PRICE	DW-SRF QUANTITY	DW-SRF PRICE	CW-SRF QUANTITY	CW-SRF PRICE	PHASE 1 TOTAL PRICE
127	8" SANITARY SEWER PIPE 18' - 20' DEEP	FT	395	$60.00	0	$0.00	395	$23,700.00	$23,700.00
128	8" SEWER COUPLINGS	EACH	11	$275.00	0	$0.00	11	$3,025.00	$3,025.00
129	48" MANHOLE 6' - 8' DEEP	EACH	2	$1,800.00	0	$0.00	2	$3,600.00	$3,600.00
130	48" MANHOLE 8' - 10' DEEP	EACH	2	$2,000.00	0	$0.00	2	$4,000.00	$4,000.00
131	48" MANHOLE 10' - 12' DEEP	EACH	1	$2,200.00	0	$0.00	1	$2,200.00	$2,200.00
132	48" MANHOLE 12' - 14' DEEP	EACH	1	$2,400.00	0	$0.00	1	$2,400.00	$2,400.00
133	48" MANHOLE 16' - 18' DEEP	EACH	1	$2,800.00	0	$0.00	1	$2,800.00	$2,800.00
134	48" MANHOLE 18' - 20' DEEP	EACH	1	$3,200.00	0	$0.00	1	$3,200.00	$3,200.00
135	8" BOOTS FOR MANHOLE	EACH	24	$110.00	0	$0.00	24	$2,640.00	$2,640.00
136	ADJUST MANHOLE	EACH	8	$528.58	0	$0.00	8	$4,228.64	$4,228.64
137	MANHOLE FRAME AND COVER	EACH	8	$498.65	0	$0.00	8	$3,989.20	$3,989.20
138	EXTERNAL FRAME SEAL	EACH	8	$320.80	0	$0.00	8	$2,566.40	$2,566.40
139	MANHOLE CONSTRUCTION PLATE MARKER	EACH	8	$203.22	0	$0.00	8	$1,625.76	$1,625.76

	DW-SRF TOTALS	CW-SRF TOTALS	TOTAL PHASE 1
Preliminary Construction Estimate:	**$745,000**	**$1,414,000**	**$2,159,000**
Engineering/Construction Admin:	**$117,000**	**$237,000**	**$354,000**
Legal Administration:	**$31,000**	**$62,000**	**$93,000**
Contingencies:	**$67,000**	**$135,000**	**$202,000**
Project Total Estimate:	**$960,000**	**$1,848,000**	**$2,808,000**

c. Itemized Capital Project Cost Estimate for Option 2

Prepared by:
JSA Engineers/Land Surveyors
12/23/2015

Option 2 - Trenchless Technologies
DAKOTA STREET IMPROVEMENTS - PHASE 1
(US HWY 18 TO LYNN STREET)
CANTON, SOUTH DAKOTA
PRELIMINARY PROJECT ESTIMATE

LINE ITEM	DESCRIPTION	UNITS	UNIT PRICE	PHASE 1 TOTAL QUANTITY	DW-SRF QUANTITY	DW-SRF PRICE	CW-SRF QUANTITY	CW-SRF PRICE	NON-PARTICIPATING QUANTITY	NON-PARTICIPATING TOTAL PRICE	PHASE 1 TOTAL PRICE
	GENERAL										
1	MOBILIZATION	LS	$125,000.00	1	0.25	$31,250.00	0.5	$62,500.00	0.25	$31,250.00	$125,000.00
2	CLEAR AND GRUB TREE	EACH	$500.00	41	0	$0.00	0	$0.00	41	$20,500.00	$20,500.00
3	REMOVE TRAFFIC SIGN	EACH	$25.00	25	8.25	$206.25	16.75	$418.75	0	$0.00	$625.00
4	REMOVE CONCRETE CURB AND GUTTER	FT	$3.00	4275	750	$2,250.00	1525	$4,575.00	2000	$6,000.00	$12,825.00
5	REMOVE DROP INLET	EACH	$500.00	10	3.3	$1,650.00	6.7	$3,350.00	0	$0.00	$5,000.00
6	REMOVE JUNCTION BOX	EACH	$500.00	5	0	$0.00	5	$2,500.00	0	$0.00	$2,500.00
7	REMOVE FIRE HYDRANT	EACH	$400.00	6	6	$2,400.00	0	$0.00	0	$0.00	$2,400.00
8	REMOVE STORM SEWER PIPE	FT	$10.00	1305	0	$0.00	1305	$13,050.00	0	$0.00	$13,050.00
9	REMOVE WATER MAIN	FT	$12.00	3167	520	$6,240.00	0	$0.00	2647	$31,764.00	$38,004.00
10	REMOVE WATER VALVE	EACH	$105.00	13	13	$1,365.00	0	$0.00	0	$0.00	$1,365.00
11	REMOVE ASPHALT CONCRETE COMPOSITE	SQ YD	$2.00	1263	42	$84.00	83	$166.00	1138	$2,276.00	$2,526.00
12	REMOVE PCC PAVEMENT	SQ YD	$4.00	10345	1320	$5,280.00	2680	$10,720.00	6345	$25,380.00	$41,380.00
13	REMOVE CONCRETE APPROACH PAVEMENT	SQ YD	$4.00	1001	76	$304.00	154	$616.00	771	$3,084.00	$4,004.00
14	REMOVE CONCRETE SIDEWALK	SQ YD	$3.00	3776	100	$300.00	200	$600.00	3476	$10,428.00	$11,328.00
15	SALVAGE TRAFFIC SIGN AND RESET	EACH	$30.00	25	8.25	$247.50	16.75	$502.50	0	$0.00	$750.00
16	SAW EXISTING ASPHALT	FT	$3.50	446	147	$514.50	299	$1,046.50	0	$0.00	$1,561.00
17	SAW EXISTING PCC CONCRETE	FT	$5.55	1160	383	$2,125.65	777	$4,312.35	0	$0.00	$6,438.00
18	UNCLASSIFIED EXCAVATION	CU YD	$4.00	4131	0	$0.00	0	$0.00	4131	$16,524.00	$16,524.00
19	UNCLASSIFIED EXCAVATION, DIGOUTS	CU YD	$6.00	413	13	$78.00	27	$162.00	373	$2,238.00	$2,478.00
20	UNCLASSIFIED GRADE STABILIZATION	CU YD	$7.00	1240	40	$280.00	80	$560.00	1120	$7,840.00	$8,680.00
21	SCARIFY AND RECOMPACT SUBGRADE	SQ YD	$0.56	24784	4089	$2,289.84	8303	$4,649.68	12392	$6,939.52	$13,879.04
22	WATER FOR EMBANKMENT	MGAL	$8.00	33	0	$0.00	0	$0.00	33	$264.00	$264.00
23	PLACING CONTRACTOR FURNISHED TOPSOIL	CU YD	$15.00	886	146	$2,190.00	297	$4,455.00	443	$6,645.00	$13,290.00
24	INCIDENTAL WORK, GRADING	LS	$8,500.00	1.15	0.2	$1,700.00	0.45	$3,825.00	0.5	$4,250.00	$9,775.00
25	INCIDENTAL WORK, UTILITIES	LS	$2,575.00	1	0.33	$849.75	0.67	$1,725.25	0	$0.00	$2,575.00
26	LOCATING UTILITY	EACH	$150.00	10	3	$450.00	7	$1,050.00	0	$0.00	$1,500.00
27	VERIFY UTILITY	EACH	$150.00	10	3	$450.00	7	$1,050.00	0	$0.00	$1,500.00
	SURFACING										
28	WATER FOR GRANULAR MATERIAL	MGAL	$15.00	149	19	$285.00	39	$585.00	91	$1,365.00	$2,235.00
29	BASE COURSE	TON	$15.00	12409	1597	$23,955.00	3243	$48,645.00	7569	$113,535.00	$186,135.00
30	GRAVEL CUSHION	TON	$12.00	404	13	$156.00	27	$324.00	364	$4,368.00	$4,848.00
31	ASPHALT CONCRETE COMPOSITE	TON	$90.00	223	74	$6,660.00	149	$13,410.00		$0.00	$20,070.00
32	8" NONREINFORCED PCC PAVEMENT	SQ YD	$46.00	9217	1186	$54,556.00	2409	$110,814.00	5622	$258,612.00	$423,982.00
33	CONCRETE CURB AND GUTTER - TYPE SF68	FT	$16.00	4275	751	$12,016.00	1524	$24,384.00	2000	$32,000.00	$68,400.00
34	CONCRETE VALLEY CUTTER, 8" THICK	SQ YD	$65.00	396	131	$8,515.00	265	$17,225.00	0	$0.00	$25,740.00
35	8" PCC FILLET SECTION	SQ YD	$75.00	369	122	$9,150.00	247	$18,525.00	0	$0.00	$27,675.00
36	6" PCC APPROACH PAVEMENT	SQ YD	$46.45	386	76	$3,530.20	154	$7,153.30	156	$7,246.20	$17,929.70
37	8" PCC APPROACH PAVEMENT	SQ YD	$50.00	615	0	$0.00	0	$0.00	615	$30,750.00	$30,750.00
38	4" CONCRETE SIDEWALK	SQ FT	$4.05	21539	891	$3,608.55	1809	$7,326.45	18839	$76,297.95	$87,232.95
39	6" CONCRETE SIDEWALK	SQ FT	$4.40	2600	0	$0.00	0	$0.00	2600	$11,440.00	$11,440.00
40	8" CONCRETE SIDEWALK	SQ FT	$4.80	1225	0	$0.00	0	$0.00	1225	$5,880.00	$5,880.00
41	MSE RETAINING WALL	LS	$25,000.00	1	0	$0.00	0	$0.00	1	$25,000.00	$25,000.00
42	GEOTEXTILE FABRIC FOR SUBGRADE STABILIZATION	SQ YD	$2.50	12392	1597	$3,992.50	3243	$8,107.50	7552	$18,880.00	$30,980.00
43	DETECTABLE WARNING SURFACE	SQ FT	$44.00	224	74	$3,256.00	150	$6,600.00	0	$0.00	$9,856.00
	EROSION CONTROL										
44	WATER FOR VEGETATION	MGAL	$15.00	287	47	$705.00	96	$1,440.00	144	$2,160.00	$4,305.00
45	SPECIAL PERMANENT SEED MIXTURE 1	LB	$35.00	222	37	$1,295.00	74	$2,590.00	111	$3,885.00	$7,770.00
46	FERTILIZING	LB	$1.00	74	12	$12.00	25	$25.00	37	$37.00	$74.00
47	BONDED FIBER MATRIX	TON	$3,500.00	1.5	0.25	$875.00	0.5	$1,750.00	0.75	$2,625.00	$5,250.00
48	3" CALIPER DECIDUOUS TREE, FURNISH AND PLANT	EACH	$370.00	40	0	$0.00	0	$0.00	40	$14,800.00	$14,800.00
49	WEED CONTROL	LS	$210.00	1	0.17	$35.70	0.33	$69.30	0.5	$105.00	$210.00
50	INLET PROTECTION	EACH	$70.75	50	16.5	$1,167.38	33.5	$2,370.13	0	$0.00	$3,537.50
51	SWEEPING	HOUR	$130.00	25	3	$390.00	7	$910.00	15	$1,950.00	$3,250.00
52	TEMPORARY VEHICLE TRACKING CONTROL	EACH	$569.68	2	0.7	$398.78	1.3	$740.58	0	$0.00	$1,139.36
53	CONCRETE WASHOUT AREA	EACH	$810.77	1	0.33	$267.55	0.67	$543.22	0	$0.00	$810.77
	TRAFFIC CONTROL										
54	TRAFFIC CONTROL	UNIT	$1.20	7000	2310	$2,772.00	4690	$5,628.00	0	$0.00	$8,400.00
55	TRAFFIC CONTROL MISCELLANEOUS	LS	$10,000.00	1	0.33	$3,300.00	0.67	$6,700.00	0	$0.00	$10,000.00
	STREET LIGHTING										
56	BREAKAWAY BASE LUMINAIRE POLE WITH ARM - 35' HEIGHT	EACH	$3,900.00	7	0	$0.00	0	$0.00	7	$27,300.00	$27,300.00
57	2' DIAMETER FOOTING	EACH	$100.00	7	0	$0.00	0	$0.00	7	$700.00	$700.00
58	TIE TO EXISTING CONDUIT	EACH	$100.00	1	0	$0.00	0	$0.00	1	$100.00	$100.00
59	2" RIGID CONDUIT, SCHEDULE 40	FT	$2.78	1842	0	$0.00	0	$0.00	1842	$5,120.76	$5,120.76
60	2" RIGID CONDUIT, SCHEDULE 80	FT	$10.36	468	0	$0.00	0	$0.00	468	$4,848.48	$4,848.48
61	STREET LIGHT WIRE	FT	$4.00	2168	0	$0.00	0	$0.00	2168	$8,672.00	$8,672.00
	STORM SEWER										
62	18" RCP CLASS 3, FURNISH	FT	$25.07	855	0	$0.00	855	$21,434.85	0	$0.00	$21,434.85
63	18" RCP, INSTALL	FT	$29.43	855	0	$0.00	855	$25,162.65	0	$0.00	$25,162.65
64	24" RCP CLASS 3, FURNISH	FT	$33.79	351	0	$0.00	351	$11,860.29	0	$0.00	$11,860.29
65	24" RCP, INSTALL	FT	$29.43	351	0	$0.00	351	$10,329.93	0	$0.00	$10,329.93
66	30" RCP CLASS 3, FURNISH	FT	$48.51	1559	0	$0.00	1559	$75,627.09	0	$0.00	$75,627.09
67	30" RCP, INSTALL	FT	$31.61	1559	0	$0.00	1559	$49,279.99	0	$0.00	$49,279.99
68	36" RCP CLASS 3, FURNISH	FT	$76.30	370	0	$0.00	370	$28,231.00	0	$0.00	$28,231.00
69	36" RCP, INSTALL	FT	$34.88	370	0	$0.00	370	$12,905.60	0	$0.00	$12,905.60
70	STANDARD STORM SEWER JUNCTION BOX, TYPE 1	EACH	$3,000.00	11	0	$0.00	11	$33,000.00	0	$0.00	$33,000.00
71	STANDARD STORM SEWER INLET, TYPE B1	EACH	$1,000.00	2	0	$0.00	2	$2,000.00	0	$0.00	$2,000.00
72	STANDARD 10' - 0" S.F. SUMP TYPE STORM SEWER INLET	EACH	$3,000.00	31	0	$0.00	31	$93,000.00	0	$0.00	$93,000.00
73	TYPE B FRAME AND GRATE	EACH	$664.40	2	0	$0.00	2	$1,328.80	0	$0.00	$1,328.80

Prepared by:
JSA Engineers/Land Surveyors
12/23/2015

Option 2 - Trenchless Technologies
DAKOTA STREET IMPROVEMENTS - PHASE 1
(US HWY 18 TO LYNN STREET)
CANTON, SOUTH DAKOTA
PRELIMINARY PROJECT ESTIMATE

LINE ITEM	DESCRIPTION	UNITS	UNIT PRICE	PHASE 1 TOTAL QUANTITY	DW-SRF QUANTITY	DW-SRF PRICE	CW-SRF QUANTITY	CW-SRF PRICE	NON-PARTICIPATING QUANTITY	NON-PARTICIPATING TOTAL PRICE	PHASE 1 TOTAL PRICE
74	TYPE Y MANHOLE FRAME AND LID	EACH	$400.00	31	0	$0.00	31	$12,400.00	0	$0.00	$12,400.00
75	MANHOLE FRAME AND COVER	EACH	$498.65	11	0	$0.00	11	$5,485.15	0	$0.00	$5,485.15
76	ADJUST MANHOLE	EACH	$528.58	11	0	$0.00	11	$5,814.38	0	$0.00	$5,814.38
	WATERMAIN										
77	TRENCH STABILIZATION	TON	$25.00	20	20	$500.00	0	$0.00	0	$0.00	$500.00
78	SELECT FILL	TON	$15.00	20	20	$300.00	0	$0.00	0	$0.00	$300.00
79	4" C900 DR18 PVC WATERMAIN	FT	$20.25	169	169	$3,422.25	0	$0.00	0	$0.00	$3,422.25
80	6" C900 DR18 PVC WATERMAIN	FT	$22.35	333	333	$7,442.55	0	$0.00	0	$0.00	$7,442.55
81	8" C900 DR18 PVC WATERMAIN	FT	$25.62	492	492	$12,605.04	0	$0.00	0	$0.00	$12,605.04
82	12" C900 DR18 PVC WATERMAIN	FT	$45.00	520	520	$23,400.00	0	$0.00	0	$0.00	$23,400.00
83	12" C900 DR18 PVC WATERMAIN - HDD	FT	$65.00	2319	2319	$150,735.00	0	$0.00	0	$0.00	$150,735.00
84	6" GATE VALVE WITH BOX	EACH	$1,060.00	6	6	$6,360.00	0	$0.00	0	$0.00	$6,360.00
85	8" GATE VALVE WITH BOX	EACH	$2,000.00	10	10	$20,000.00	0	$0.00	0	$0.00	$20,000.00
86	12" GATE VALVE WITH BOX	EACH	$3,000.00	12	12	$36,000.00	0	$0.00	0	$0.00	$36,000.00
87	VALVE BOX ADJUSTMENTS	EACH	$200.00	28	28	$5,600.00	0	$0.00	0	$0.00	$5,600.00
88	4" MJ ELBOW 45 DEGREE	EACH	$150.00	8	8	$1,200.00	0	$0.00	0	$0.00	$1,200.00
89	6" MJ ELBOW 45 DEGREE	EACH	$250.00	6	6	$1,500.00	0	$0.00	0	$0.00	$1,500.00
90	8" MJ ELBOW 45 DEGREE	EACH	$298.00	2	2	$596.00	0	$0.00	0	$0.00	$596.00
91	12" MJ ELBOW 45 DEGREE	EACH	$446.45	2	2	$892.90	0	$0.00	0	$0.00	$892.90
92	12" X 6" MJ TEE	EACH	$527.95	6	6	$3,167.70	0	$0.00	0	$0.00	$3,167.70
93	12" X 8" MJ TEE	EACH	$550.00	2	2	$1,100.00	0	$0.00	0	$0.00	$1,100.00
94	12" X 12" MJ TEE	EACH	$787.09	2	2	$1,574.18	0	$0.00	0	$0.00	$1,574.18
95	8" X 4" MJ REDUCER	EACH	$238.17	6	6	$1,429.02	0	$0.00	0	$0.00	$1,429.02
96	8" X 6" MJ REDUCER	EACH	$250.70	3	3	$752.10	0	$0.00	0	$0.00	$752.10
97	12" X 8" MJ CROSS	EACH	$1,100.00	4	4	$4,400.00	0	$0.00	0	$0.00	$4,400.00
98	12" MJ PLUG	EACH	$300.00	2	2	$600.00	0	$0.00	0	$0.00	$600.00
99	4" MJ OVERSIZED SLEEVE	EACH	$300.00	6	6	$1,800.00	0	$0.00	0	$0.00	$1,800.00
100	6" MJ OVERSIZED SLEEVE	EACH	$360.00	3	3	$1,080.00	0	$0.00	0	$0.00	$1,080.00
101	8" MJ OVERSIZED SLEEVE	EACH	$410.00	1	1	$410.00	0	$0.00	0	$0.00	$410.00
102	4" MJ RETAINER GLAND	EACH	$36.24	34	34	$1,232.16	0	$0.00	0	$0.00	$1,232.16
103	6" MJ RETAINER GLAND	EACH	$75.00	45	45	$3,375.00	0	$0.00	0	$0.00	$3,375.00
104	8" MJ RETAINER GLAND	EACH	$68.86	45	45	$3,098.70	0	$0.00	0	$0.00	$3,098.70
105	12" MJ RETAINER GLAND	EACH	$116.33	60	60	$6,979.80	0	$0.00	0	$0.00	$6,979.80
106	WATERMAIN ADJUSTMENT	EACH	$1,500.00	4	4	$6,000.00	0	$0.00	0	$0.00	$6,000.00
107	FIRE HYDRANT	EACH	$3,600.00	6	6	$21,600.00	0	$0.00	0	$0.00	$21,600.00
108	TEMPORARY FIRE HYDRANT	EACH	$1,535.00	5	5	$7,675.00	0	$0.00	0	$0.00	$7,675.00
109	CUT AND TIE TO EXISTING WATERMAIN	EACH	$1,312.08	11	11	$14,432.88	0	$0.00	0	$0.00	$14,432.88
110	4" WATERMAIN BEDDING	FT	$3.27	169	169	$552.63	0	$0.00	0	$0.00	$552.63
111	6" WATERMAIN BEDDING	FT	$4.00	333	333	$1,332.00	0	$0.00	0	$0.00	$1,332.00
112	8" WATERMAIN BEDDING	FT	$4.00	492	492	$1,968.00	0	$0.00	0	$0.00	$1,968.00
113	12" WATERMAIN BEDDING	FT	$4.70	520	520	$2,444.00	0	$0.00	0	$0.00	$2,444.00
114	12" X 1" WATER SERVICE TAP, SADDLE, AND CORP. STOP	EACH	$500.00	9	9	$4,500.00	0	$0.00	0	$0.00	$4,500.00
115	1" COPPER SERVICE LINE	FT	$25.00	242	242	$6,050.00	0	$0.00	0	$0.00	$6,050.00
116	1" CURB BOX WITH VALVE	EACH	$300.00	9	9	$2,700.00	0	$0.00	0	$0.00	$2,700.00
117	WATER SERVICE RECONNECT	EACH	$400.00	9	9	$3,600.00	0	$0.00	0	$0.00	$3,600.00
	SANITARY SEWER										
118	FRP REHABILITATION MANHOLE LINER	EA	$5,500.00	8	0	$0.00	8	$44,000.00	0	$0.00	$44,000.00
119	SANITARY SEWER TEMPORARY BYPASS	LS	$8,000.00	1	0	$0.00	1	$8,000.00	0	$0.00	$8,000.00
120	MANHOLE BENCH AND INVERT RECONSTRUCT	EA	$1,000.00	8	0	$0.00	8	$8,000.00	0	$0.00	$8,000.00
121	CLEAN AND TELEVISE SANITARY SEWER MAIN	FT	$2.00	2736	0	$0.00	2736	$5,472.00	0	$0.00	$5,472.00
122	8" CIPP SEWER LINING WITH POST TV INSPECTION	FT	$32.00	2736	0	$0.00	2736	$87,552.00	0	$0.00	$87,552.00
123	REMOVE PROTRUDING TAPS IN SEWER MAIN	EA	$500.00	5	0	$0.00	5	$2,500.00	0	$0.00	$2,500.00
124	SERVICE TAP REINSTATEMENT	EA	$200.00	9	0	$0.00	9	$1,800.00	0	$0.00	$1,800.00
125	POINT EXCAVATION AND REPAIR	EA	$2,500.00	5	0	$0.00	5	$12,500.00	0	$0.00	$12,500.00
126	ADJUST MANHOLE	EACH	$528.58	8	0	$0.00	8	$4,228.64	0	$0.00	$4,228.64
127	MANHOLE FRAME AND COVER	EACH	$498.65	8	0	$0.00	8	$3,989.20	0	$0.00	$3,989.20
128	EXTERNAL FRAME SEAL	EACH	$320.80	8	0	$0.00	8	$2,566.40	0	$0.00	$2,566.40
129	MANHOLE CONSTRUCTION PLATE MARKER	EACH	$203.22	8	0	$0.00	8	$1,625.76	0	$0.00	$1,625.76
						DW- SRF TOTALS		**CW-SRF TOTALS**		**NON-PARTICIPATING TOTALS**	**TOTAL PHASE 1**
	Preliminary Construction Estimate (Includes 10% Costruction Contingencies):					$578,000		$978,000		$833,000	$2,389,000
	Legal/Administration (4%):					$23,000		$39,000		$33,000	$95,000
	Engineering/Construction Admin:					$76,000		$154,000		$124,000	$354,000
	Project Total Estimate:					$677,000		$1,171,000		$990,000	$2,838,000

d. Cultural Resources Effects Assessment Summary

CULTURAL RESOURCES EFFECTS ASSESSMENT SUMMARY

Applicant City of Canton, SD Project Contact Kyle Cwach, Interim City Manager
Address 210 N. Dakota St., Canton, SD 57013 Telephone Number 605.987.2881

Legal Location of Project Dakota Street from US Hwy 18 (5th Street) to Lynn Ave, City of Canton
City Canton County Lincoln Project No. 92140

Project Description The City of Canton is planning to reconstruct approximately 2,700 lineal feet of Dakota Street from US Highway 18 (5th Street) to Lynn Avenue (Project) within the corporate limits of the community to improve the underground public utility infrastructure. Dakota Street is an existing concrete/asphalt street. The project work will be within the previously disturbed street right-of-way. City utilities (water main, sanitary sewer main and storm sewer main) will also be replaced with the project.

For projects that involve new construction on vacant land please include information as to what previously occupied the site and whether that site has any known historic or archaeological significance.

Please describe below or attach information supporting the determination of effect.
Attached is Level III Cultural Resources Reconnaissance Survey documentation from Patricia Downing, Principal Investigator for Prairie Lakes Archaeological Services relating to the Project.

A map showing the project location is required. Drawings or photographs may also be helpful.

Please indicate the effect the project will have on cultural resources based on the review performed:

X No Historic Properties Affected: There are no historic properties present or the undertaking will not affect any properties eligible for or listed in the National Register of Historic Preservation.

_____ No Adverse Effect: This property is listed in or eligible for the National Register of Historic Places. This project will have no adverse effect upon the historic significance of the property because the proposed undertaking meets the Secretary of the Interior's Standards for the Treatment of Historic Properties.

_____ Adverse Effect: This property is listed in or eligible for eligible for the National Register of Historic Places. This project will have an adverse effect upon the historic significance of the property. (Attach proposed mitigation measures that may minimize the adverse effect.)

Prepared by: Kyle Cwach Date 12-24-15

DETERMINATION OF EFFECTS

I have reviewed the project description and the information provided concerning historical and cultural effects of this project. Based on that review, the Department of Environment and Natural Resources concurs with the applicant's determination of the effects that the construction of this project will have on historical or cultural resources. Additionally, if historical or cultural resources are discovered during project construction, the contractor is required to cease construction and notify the State Historical Preservation Officer.

Approved by: _____ Date _____
SD Department of Environment and Natural Resources

PRAIRIE LAKES ARCHAEOLOGICAL SERVICES
126665 East Shore Drive, Aberdeen, SD 57401
Phone/FAX: (605) 225-4573

June 27, 2014

A LETTER FORMAT REPORT OF A LEVEL III CULTURAL RESOURCES RECONNAISSANCE SURVEY FOR NORTH DAKOTA STREET IMPROVEMENTS AT CANTON IN LINCOLN COUNTY, SOUTH DAKOTA

The City of Canton plans to improve approximately one mile of Dakota Street on the north side of town (refer to Figure 1). Current plans call for the majority of construction to occur within the existing 66' road ROW. The project area is in the Lower Big Sioux Archaeological Region along the section line of T98N R49W Sections 13 and 14.

A records search was completed by Jane Watts of the State Archaeological Research Center on May 16, 2014. A very small portion of the project tract intersects a previously recorded highway improvement study conducted by M. Gilbert in 2001 (ALN-0074). Four additional surveys have been recorded within one mile of the project location. The studies include two surveys for road improvements (Wardlow 1990 ALN-0023 & Fosha 1993 ALN-0039), an examination for a bridge replacement (Bruce 2010 ALN-0225) and a study for a sewer interceptor main (Winham 1988 ALN-0012).

Seventeen structures have been recorded as possibly within the project corridor. The structures are dwellings within the City of Canton (refer to Figure 2). Four of the dwellings are considered eligible for listing on the National Register of Historic Places; eight are considered ineligible for listing; and five have not been evaluated. Information regarding the structures is summarized in Table 1.

Three sites and 238 additional structures have been recorded within one mile of the project corridor. Sites include two historic artifact scatters and the Chicago, Milwaukee, St. Paul & Pacific Railroad. Structures include two bridges and 236 structures within the City of Canton. The railroad (39LN2007), Bridge 42-163-17 (LN00000210) and 39 structures in Canton are eligible for listing on the National Register of Historic Places. One structure in Canton is eligible for listing on the State Register of Historic Places. 126 structures are not eligible for listing on the National Register of Historic Places. The remaining sites and structures have not been evaluated. Information regarding the sites and structures is summarized in Table 2.

I visited the project location on June 24, 2014. The survey area is located on a gently rolling plain northwest of the Big Sioux River valley. The land is surrounded by small drainages and seasonal wetlands (refer to Figure 1). The parent soil is glacial till. The survey area is primarily clayey alluvium soils. The native vegetation was tall grass prairie.

A 200' wide corridor was examined along the rural portions of the road while a 100' wide corridor was examined through the urban areas. Approximately eleven acres were examined by pedestrian transects at twelve meter intervals to identify cultural resources. Two-thirds of the survey area has been cultivated and has a surface visibility of seventy

percent. The remaining one-third of the survey area has been developed for residential or commercial use.

No prehistoric, historic or architectural sites were found within the project corridor and the probability of finding additional cultural resources is minimal. It is recommended that a determination of No Historic Properties Affected be made for the project and that Section 106 Clearance be granted for the project to proceed as planned. If evidence of any unrecorded or buried cultural resources is found during construction, then activities should stop and the State Historic Preservation Officer should be notified of the find.

Sincerely,

Patricia Downing
Principal Investigator

Table 1.
Structures identified as possibly within project corridor

SHPO ID	T-R-Sec	ID	Property Name	Property address	Date of Construction	DOE
LN00000231	98N-49W-24	6126	House	415 E 1st. Street	c. 1931	Not Eligible
LN00000071	98N-49W-14	6315	House	323 N. Lincoln	1900	Not Eligible
LN00000135	98N-49W-23	6445	House	320 E. 4th Street	1901	Not Eligible
LN00000234	98N-49W-24	6467	James & Ida Lewis house	404 E. 1st. Street	1909	NR Eligible
LN00000216	98N-49W-13	6512	Sioux Falls Army Barracks	Dakota Street	1947	Not Eligible
LN00000242	98N-49W-24	6517	House	426 E 2nd Street	c. 1916	Not Eligible
LN00000280	98N-49W-14	6590	House	603 N. Dakota St.	c. 1912	NR Eligible
LN00000276	98N-49W-13	6683	House	215 N. Dakota St.	c. 1919	Not Eligible
LN00000277	98N-49W-13	6684	Methodist parsonage	223 N. Dakota St.	1909	Unevaluated
LN00000278	98N-49W-14	6685	House	318 N. Dakota St.	c. 1890's	NR Eligible
LN00000279	98N-49W-14	6686	House	419 N. Dakota St.	1922	Not Eligible
LN00000283	98N-49W-14	6690	Fee House	621 N. Dakota St.	1948	Unevaluated
LN00000594	98N-49W-14	9137	Kennedy Rose Inn	903 N. Dakota St.	1917	NR Eligible
LN00000073	98N-49W-14	24332	House	310 N. Lincoln St.	c. 1917	Not Eligible
LN00000593	98N-49W-13	8946	House	Dakota Street	1885	Unevaluated
	98N-49W-14	6689	House	615 N. Dakota St.	c. 1900	Unevaluated
	98N-49W-13	6591	Holliston House		1923	Unevaluated

Table 2.
Sites and structures recorded within one mile of the project corridors

Section #	Number	Description	NRHP status
98N-49W-23	39LN0101	Historic artifact scatter	Unevaluated
98N-49W-23	39LN0102	Historic artifact scatter	Unevaluated
98N-49W-23 98N-49W-24 98N-49W-14 98N-49W-11	39LN2007	Chicago, Milwaukee, St. Paul & Pacific Railroad	Eligible
98N-49W-14	LN00000210	Bridge #42-163-17	Eligible
98N-49W-24	LN00000275	North Street Bridge	Not eligible
98N-49W-13 98N-49W-14 98N-49W-23 98N-49W-24	Various	236 buildings in City of Canton	Various

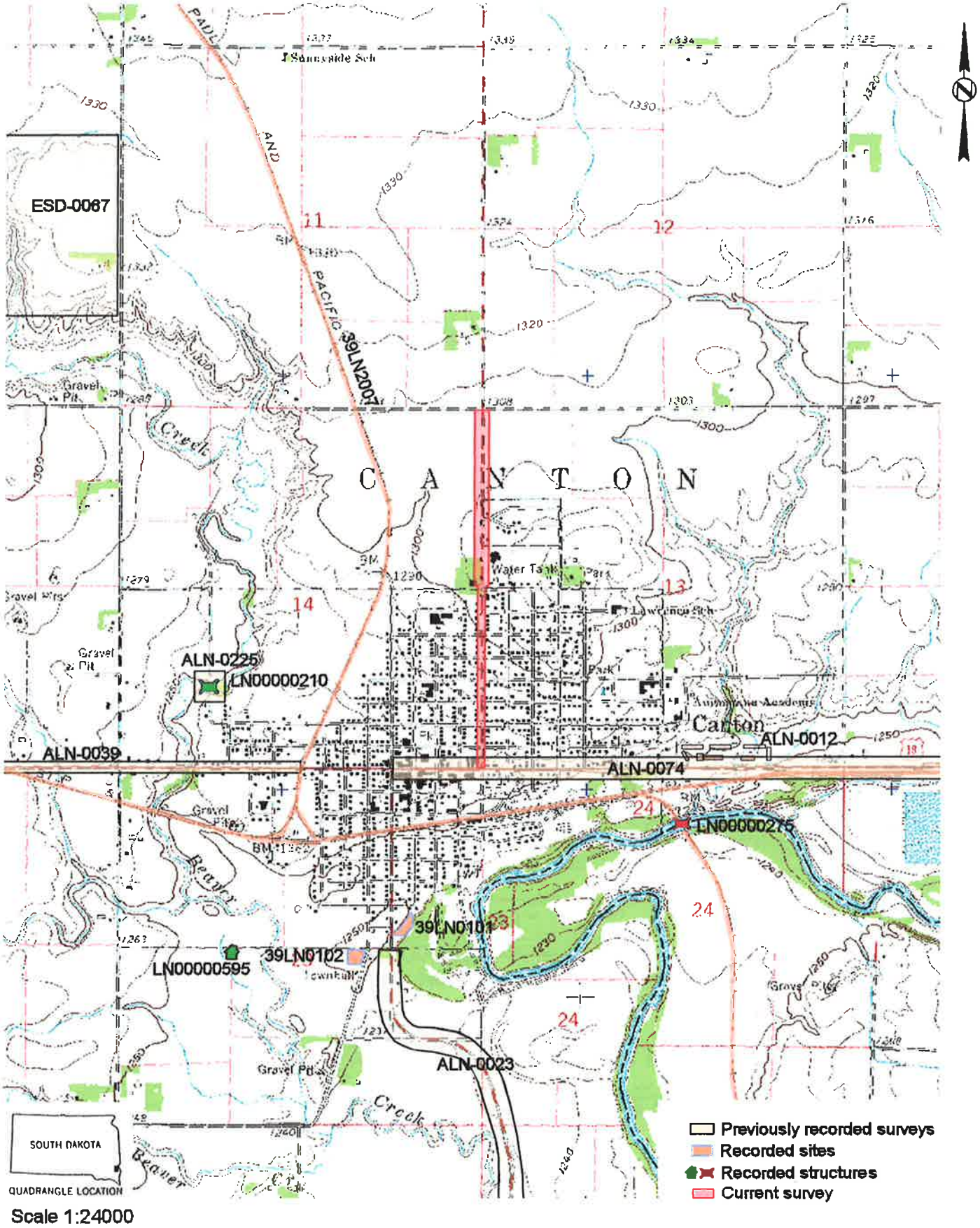


Figure 1. Area examined for Dakota Street reconstruction at T98N R49W Sections 13 & 14 on USGS 7.5' Quadrangle: CANTON in Lincoln County, South Dakota

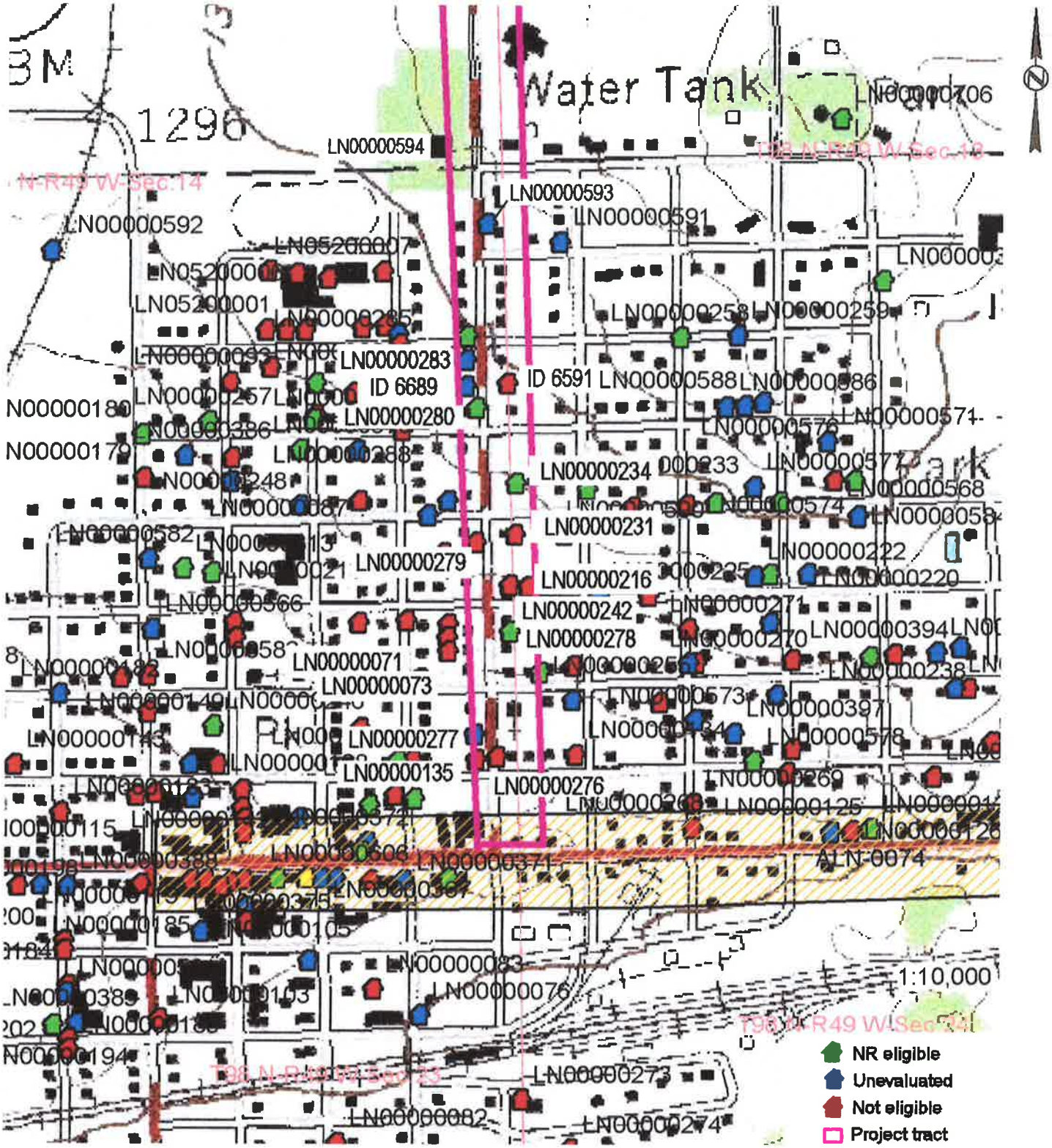
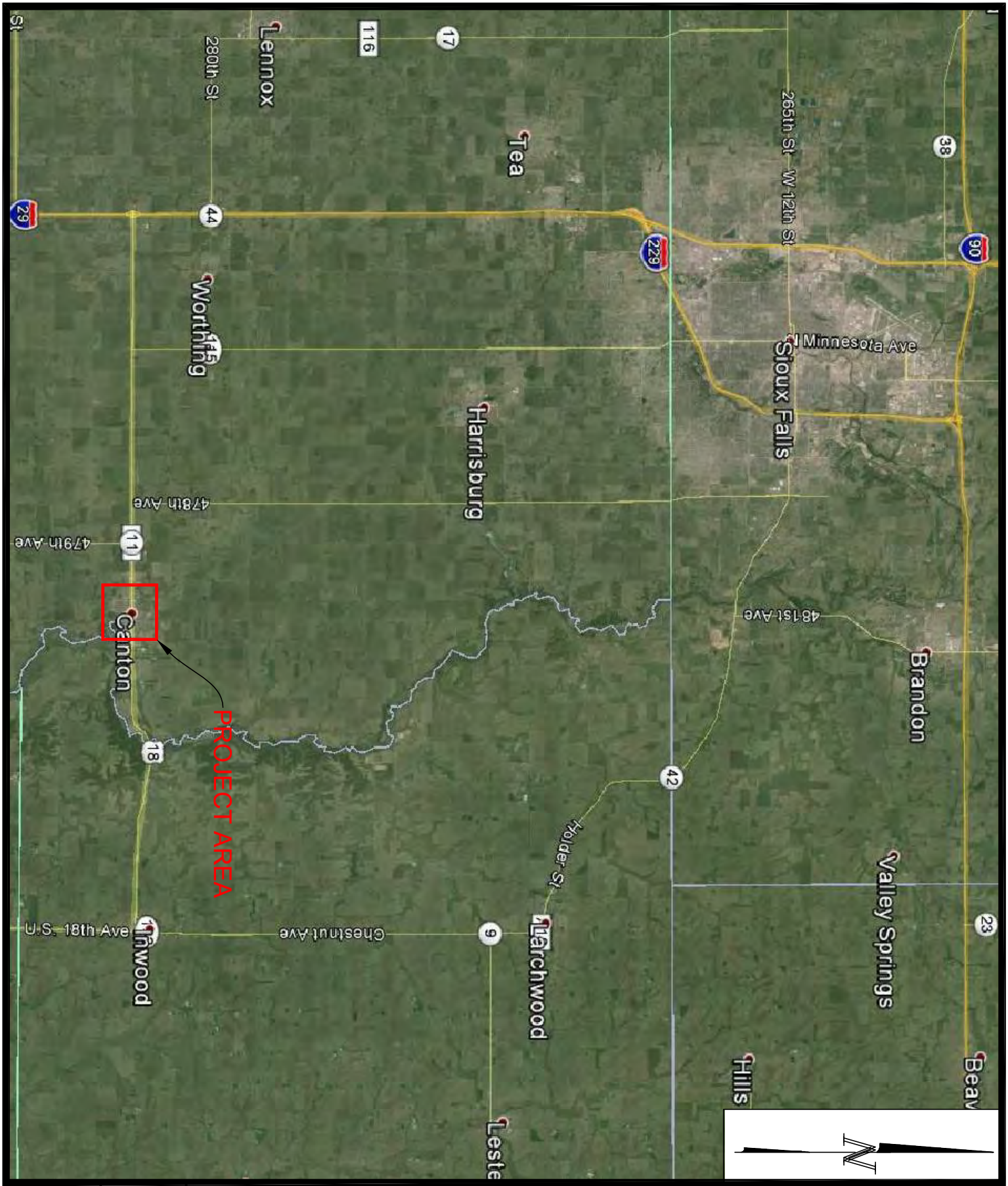


Figure 2. Structures identified as possibly within the survey area along Dakota Street in Canton, South Dakota

PROJECT LOCATION MAPS

Prepared by:
JSA Engineers/Land Surveyors
Sioux Falls, South Dakota



N. DAKOTA STREET PHASE 1

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: DAKOTA STREET...REGIONAL MAP EXHIBIT.DWG
DATE: JULY 17, 2015

SHEET NO.
A-1

N. DAKOTA STREET

PHASE 1

CANTON, SOUTH DAKOTA

N. DAKOTA STREET PHASE 1

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: DAKOTA STREET...REGIONAL MAP EXHIBIT.DWG
DATE: JULY 17, 2015

SHEET NO. A-1

N. DAKOTA STREET

PHASE 1

CANTON, SOUTH DAKOTA

e. Correspondence with Reviewing Agencies

RECEIVED
JUL 27 2015
U.S. FISH & WILDLIFE SERVICE

JSA ENGINEERS AND LAND SURVEYORS
Land Development · Municipal · Streets · Water · Sewer · GPS · Construction Staking

July 22, 2015

Mr. Scott Larson
US Fish and Wildlife Service
420 S. Garfield Avenue, Suite 400
Pierre, SD 57502

RE: **Dakota Street Improvements – Phase 1**
US Highway 18 to Lynn Avenue
City of Canton, South Dakota (JSA Project # 92140)

Dear Mr. Larson:

In 2016 the City of Canton plans to reconstruct approximately 2,700 feet of Dakota Street within the corporate limits of the community. A regional and a community location map are attached to this correspondence for your reference. The City is currently applying for various loans and grants for project funding. The City intends to fund the project with a combination of local cash funds, State Revolving loan funds (CW-SRF and DW-SRF), Community Access Grant funds, and Transportation Alternative Program (TAP) funds.

Dakota Street is an existing street in an established, mainly residential, neighborhood. The existing street consists of curb and gutter and concrete surfacing with varying degrees of asphalt overlays. The City plans to replace the existing sanitary sewer system, water distribution system and municipal storm sewer system within the project corridor due to the deteriorated conditions and limited capacities of the existing systems. The existing street surfacing including sidewalks and driveways will be removed and replaced as well. The new street surfacing will be concrete pavement. Disturbed areas outside of the paving will be revegetated with seed or sod.

It is anticipated that the project will be bid in February or March of 2016 with construction activities beginning in the spring of 2016. The project is anticipated to be substantially complete in the fall of 2016. Please contact us if your agency has any concerns within the project area or if there is a need for your agency to review the construction plans.

Sincerely,

JSA Engineers/Land Surveyors

Myron Adam, PE/LS
Project Manager

This constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.). We have reviewed and have NO OBJECTION to this proposed project.

8/10/15
Date

Scott Larson
Field Supervisor

Attachments: Project Location Maps

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

July 31, 2015

Planning, Programs, and Project Management Division

Mr. Myron Adam
JSA Engineers and Land Surveyors
6810 S. Lyncrest Avenue, Suite 101
Sioux Falls, South Dakota 57108

Dear Mr. Adam:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated July 22, 2015 (received July 28, 2015) regarding the environmental review of Phase One of the Dakota Street Improvements Project, located between U.S. Highway 18 to Lynn Avenue, in Canton, South Dakota in Lincoln County (JSA Project # 92140). We offer the following comments for your consideration:

Your plans should be coordinated with the state water quality office that has jurisdiction within the area where the project is located to ensure compliance with federal and state water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency. Please coordinate with the South Dakota Department of Environment & Natural Resources concerning state water quality programs.

If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks regarding fish and wildlife resources. In addition, the South Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

Since the proposed project does not appear to be located within Corps owned or operated lands, your plans should be submitted to the local floodplain administrator for review and approval prior to construction. It should be ensured that the proposed project is in compliance with the floodplain management criteria of Lincoln County and the State of South Dakota. In addition, please coordinate with the following floodplain management office:

South Dakota Division of Emergency Management
Attention: Mr. Marc Macy
118 W. Capitol Avenue
Pierre, South Dakota 57501
Telephone: 605-773-3231
Fax: 605-773-3580
Email: marc.macy@state.sd.us

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (http://www.nwo.usace.army.mil/Missions/RegulatoryProgram.aspx) to determine if this project requires a 404 permit. For a detailed review of the permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Pierre Regulatory Office
Attention: Mr. Steve Naylor, CENWO-OD-R-SD
28563 Powerhouse Road, Room 120
Pierre, South Dakota 57501

If you have any questions, please contact Ms. Amanda Ciurej of my staff at (402) 995-2897 or amanda.k.ciurej@usace.army.mil and reference PD# 6710 in the subject line.

Sincerely,

Eric A. Laux
Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

DEPARTMENT OF GAME, FISH, AND PARKS
Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

July 27, 2015

Mr. Myron Adam
JSA Engineers and Land Surveyors
6810 S. Lyncrest Ave, Suite 101
Sioux Falls, SD 57108-2515

RE: Dakota Street Reconstruction
Canton, South Dakota

Dear Mr. Adam:

The South Dakota Department of Game, Fish and Parks has reviewed the above project involving the reconstruction of approximately 2,700 feet of Dakota Street in the City of Canton, South Dakota.

At this time, the project described will have no impacts on fish and wildlife resources. However, if the project design changes or if new information becomes available, please submit the changes for review.

If you have any questions please contact me at 605.773.6208.

Sincerely,

Leslie Murphy
Senior Biologist

USDA
United States Department of Agriculture

August 18, 2015

Myron Adams, PE/LS
JSA Engineers and Land Surveyors
6810 S Lyncrest Av. Suite 101
Sioux Falls, SD 57108-2515

RE: Environmental Review for
Dakota Street Improvements – Phase 1
US Highway 18 to Lynn Avenue
Canton, SD (JSA Project # 92140

Dear Mr Adams:

Thank you for the opportunity to provide Farmland Protection Policy Act (FPPA) review of this project. The project as outlined will have **no effect** on prime or important farmland.

If you have any questions, please contact me at (605) 348-2889 ext. 104.

Sincerely,

TIMOTHY NORDQUIST
NRCS Conservation Agronomist

Natural Resources Conservation Service
414 E Stumer Road, Suite 700
Voice: 605.348.2889 ext 104 Fax: 855.256.2553
An Equal Opportunity Provider and Employer

JSA ENGINEERS AND LAND SURVEYORS
Land Development · Municipal · Streets · Water · Sewer · GPS · Construction Staking

July 22, 2015

Leslie Murphy
SD Department of Game, Fish and Parks
Joe Foss Building - 523 East Capitol
Pierre, SD 57501

RE: **Dakota Street Improvements – Phase 1**
US Highway 18 to Lynn Avenue
City of Canton, South Dakota (JSA Project # 92140)

Dear Ms. Murphy:

In 2016 the City of Canton plans to reconstruct approximately 2,700 feet of Dakota Street within the corporate limits of the community. A regional and a community location map are attached to this correspondence for your reference. The City is currently applying for various loans and grants for project funding. The City intends to fund the project with a combination of local cash funds, State Revolving loan funds (CW-SRF and DW-SRF), Community Access Grant funds, and Transportation Alternative Program (TAP) funds.

Dakota Street is an existing street in an established, mainly residential, neighborhood. The existing street consists of curb and gutter and concrete surfacing with varying degrees of asphalt overlays. The City plans to replace the existing sanitary sewer system, water distribution system and municipal storm sewer system within the project corridor due to the deteriorated conditions and limited capacities of the existing systems. The existing street surfacing including sidewalks and driveways will be removed and replaced as well. The new street surfacing will be concrete pavement. Disturbed areas outside of the paving will be revegetated with seed or sod.

It is anticipated that the project will be bid in February or March of 2016 with construction activities beginning in the spring of 2016. The project is anticipated to be substantially complete in the fall of 2016. Please contact us if your agency has any concerns within the project area or if there is a need for your agency to review the construction plans.

Sincerely,

JSA Engineers/Land Surveyors

Myron Adam, PE/LS
Project Manager

Attachments: Project Location Maps

6810 S. Lyncrest Avenue · Suite 101 · Sioux Falls, South Dakota 57108-2515 · 605-367-1036 · Fax 605-367-1002

JSA ENGINEERS AND LAND SURVEYORS
Land Development · Municipal · Streets · Water · Sewer · GPS · Construction Staking

July 22, 2015

US Army Corps of Engineers, Omaha District
Planning Division
Attn: CENWO-PM-AE
106 South 15th Street
Omaha, NE 68102-4901

RE: **Dakota Street Improvements – Phase 1**
US Highway 18 to Lynn Avenue
City of Canton, South Dakota (JSA Project # 92140)

In 2016 the City of Canton plans to reconstruct approximately 2,700 feet of Dakota Street within the corporate limits of the community. A regional and a community location map are attached to this correspondence for your reference. The City is currently applying for various loans and grants for project funding. The City intends to fund the project with a combination of local cash funds, State Revolving loan funds (CW-SRF and DW-SRF), Community Access Grant funds, and Transportation Alternative Program (TAP) funds.

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Sincerely,

JSA Engineers/Land Surveyors

Myron Adam, PE/LS
Project Manager

Attachments: Project Location Maps

6810 S. Lyncrest Avenue · Suite 101 · Sioux Falls, South Dakota 57108-2515 · 605-367-1036 · Fax 605-367-1002

JSA ENGINEERS AND LAND SURVEYORS
Land Development • Municipal • Streets • Water • Sewer • GPS • Construction Staking

July 22, 2015

Mr. Scott Larson
US Fish and Wildlife Service
420 S. Garfield Avenue, Suite 400
Pierre, SD 57502

RE: **Dakota Street Improvements – Phase 1**
US Highway 18 to Lynn Avenue
City of Canton, South Dakota (JSA Project # 92140)

Dear Mr. Larson:

In 2016 the City of Canton plans to reconstruct approximately 2,700 feet of Dakota Street within the corporate limits of the community. A regional and a community location map are attached to this correspondence for your reference. The City is currently applying for various loans and grants for project funding. The City intends to fund the project with a combination of local cash funds, State Revolving loan funds (CW-SRF and DW-SRF), Community Access Grant funds, and Transportation Alternative Program (TAP) funds.

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Sincerely,

JSA Engineers/Land Surveyors

Myron Adam, PE/LS
Project Manager

Attachments: Project Location Maps

6810 S. Lyncrest Avenue • Suite 101 • Sioux Falls, South Dakota 57108-2515 • 605-367-1036 • Fax 605-367-1002

JSA ENGINEERS AND LAND SURVEYORS
Land Development · Municipal · Streets · Water · Sewer · GPS · Construction Staking

July 22, 2015

State Soil Scientist
USDA-NRCS-Federal Building
200 Fourth Street SW
Huron, SD 57350-2475

RE: **Dakota Street Improvements – Phase 1**
US Highway 18 to Lynn Avenue
City of Canton, South Dakota (JSA Project # 92140)

In 2016 the City of Canton plans to reconstruct approximately 2,700 feet of Dakota Street within the corporate limits of the community. A regional and a community location map are attached to this correspondence for your reference. The City is currently applying for various loans and grants for project funding. The City intends to fund the project with a combination of local cash funds, State Revolving loan funds (CW-SRF and DW-SRF), Community Access Grant funds, and Transportation Alternative Program (TAP) funds.

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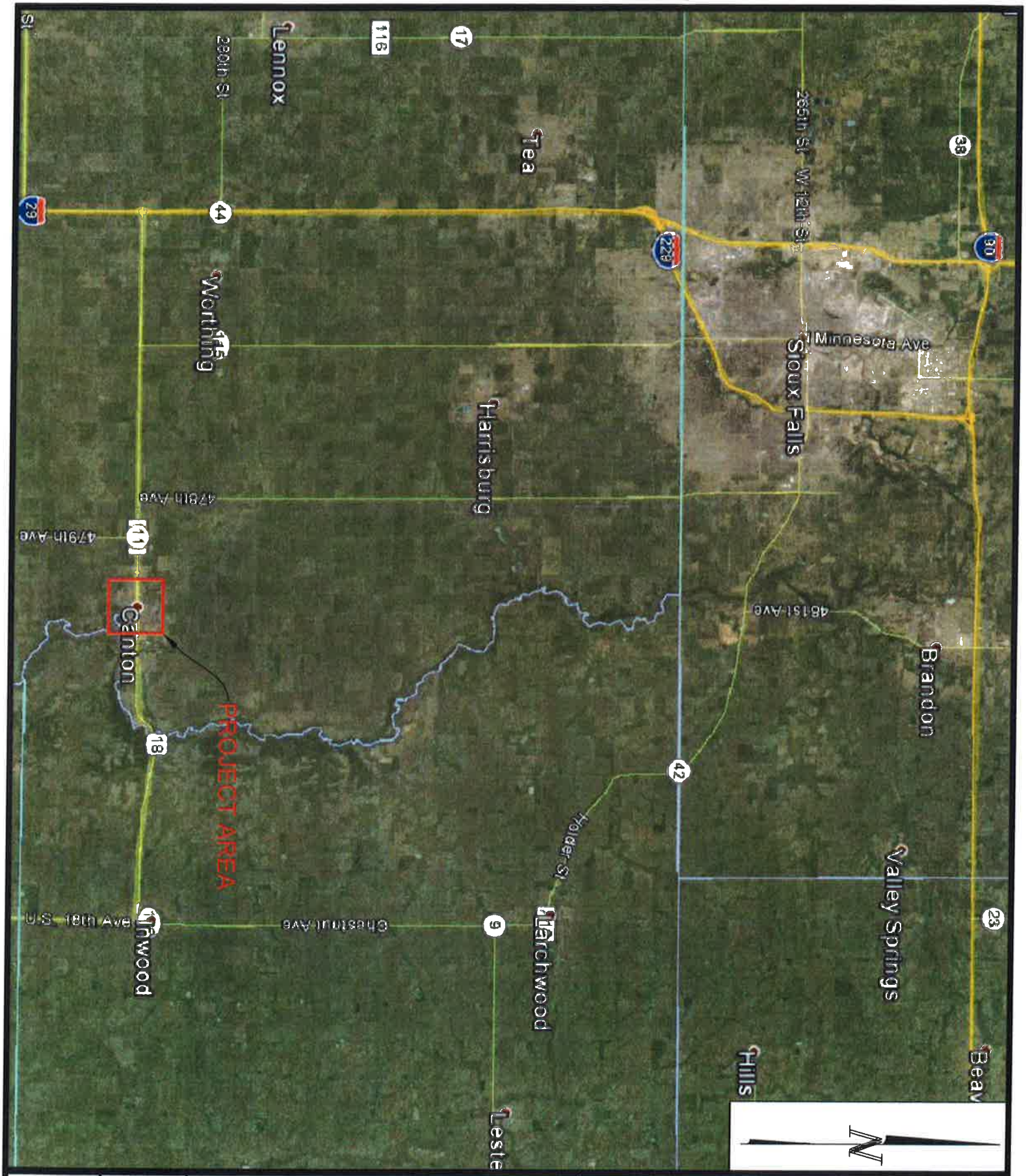
Sincerely,

JSA Engineers/Land Surveyors

Myron Adam, PE/LS
Project Manager

Attachments: Project Location Maps

6810 S. Lyncrest Avenue · Suite 101 · Sioux Falls, South Dakota 57108-2515 · 605-367-1036 · Fax 605-367-1002



N. DAKOTA STREET PHASE 1

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: DAKOTA STREET...REGIONAL MAP EXHIBIT.DWG
DATE: JULY 17, 2015

SHEET NO. A-1

N. DAKOTA STREET

PHASE 1

CANTON, SOUTH DAKOTA

A-1

SHEET NO

N. DAKOTA STREET PHASE 1

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: DAKOTA STREET...REGIONAL MAP EXHIBIT.DWG
DATE: JULY 17, 2015

N. DAKOTA STREET

PHASE 1

CANTON, SOUTH DAKOTA

DAKOTA STREET - PHASE 1

E. 5TH STREET (US HWY 18) TO LYNN AVENUE

CANTON, SOUTH DAKOTA

REVISIONS

REVISION 1:	BY:	DATE:
REVISION 2:	BY:	DATE:
REVISION 3:	BY:	DATE:
REVISION 4:	BY:	DATE:
REVISION 5:	BY:	DATE:

PROJECT LAYOUT EXHIBIT

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: 32140-DAKOTA STREET EXHIBIT_AND SCHOOLS
DATE: 7/2/2015

JSA

SHEET NO.

B-1

Sheet Series

f. SD DENR No Further Action Regarding Petroleum Spill (DENR # 93.307)

DEPARTMENT of ENVIRONMENT and NATURAL RESOURCES
PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
www.state.sd.us/denr

June 16, 2003

Chuck Springman
Eastern Farmers Coop
PO Box 155
Lennox, SD 57039 - 0155

RE: No Further Action at former United Pride Station, 324 East 5th Street, Canton, SD - **DENR # 93.307**

Dear Mr. Springman:

Staff from the South Dakota Department of Environment and Natural Resources (DENR) have reviewed the available information on the tank release at the above referenced property in Canton, South Dakota and determined active cleanup and monitoring can stop. As a result of this determination, DENR is placing this release case in the No Further Action category. This release has not been cleaned to state ground water quality standards; but DENR has determined, based on information submitted by your environmental consultant, there is no current risk to human health or further risk to the environment.

If future problems arise from remaining contamination from this release, Eastern Farmers Coop will be responsible for conducting additional assessment or remediation. Eastern Farmers Coop may also be responsible for further assessment and cleanup actions if the use of this property or adjacent affected properties changes which increases the risk to human health and the environment from contamination left with this release. The No Further Action designation will be recorded in DENR's release database and can be found at our internet website.

All monitoring wells associated with this site must be properly abandoned in accordance with DENR's Well Construction Standards ARSD 74:02:04 and written documentation must be submitted to DENR showing the wells have been properly abandoned. If you have questions or concerns about your site's No Further Action designation, please contact Scott Bickler of my staff at (605) 362-3500. Thank you for your cooperation in protecting South Dakota's water resources.

Sincerely,

Steven M. Pirner
Secretary

cy: Dennis Rounds, PRCF
Mike Meyer, Geotek
Harold Timmerman, Lincoln County Emergency Management
Scott Bickler, DENR Sioux Falls
Palmer Ericksen, Public Works Director, City of Canton
Gordon Greenwaldt

g. Notice of Public Hearing, Affidavit of Publication, and Public Hearing Minutes

Affidavit of Publication

STATE OF SOUTH DAKOTA
COUNTY OF LINCOLN

ANDY WILCOX

being first duly sworn on his oath says; that the Sioux Valley News is a legal weekly newspaper of general circulation as required by South Dakota Code of Nineteen Hundred Thirty-Nine, and any acts amendatory thereto, printed and published by the Sioux Valley News, Inc., in Canton, in said county and State, and has been such legal newspaper during the time hereinafter mentioned; that he is and during all of said time was publisher of said newspaper and has personal knowledge of the facts stated in this affidavit; that the advertisement headed:

City of Canton
Notice of Public Hearing

a printed copy of which is hereto attached, was printed and published in said newspaper for **ONE** successive week(s) upon the following dates, to-wit:

December 10, 2015

that the full amount of the fees charged for publishing the same to-wit: the sum of **$26.35** inures solely to the benefit of the publishers of said newspaper; that no agreement or understanding for any division of this sum has been made with any other person; and that no part of said sum has been agreed to be paid to any person whomsoever.

Ascribed and sworn to before me this **10th** day of **December, 2015.**

Notary Public, South Dakota

(Seal)

TERESA J. WILCOX
NOTARY
Seal
PUBLIC
STATE OF SOUTH DAKOTA

My Commission Expires
December 9, 2020

NOTICE OF PUBLIC HEARING
for the
DAKOTA STREET
IMPROVEMENTS PROJECT-
PHASE 1

Notice is hereby given that the City of Canton will hold a Public Hearing on December 21st, 2015, regarding drinking water and wastewater utility improvements to Dakota Street. The City is seeking up to $960,000 of funding from the Board of Water and Natural Resources for the drinking water improvements. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the either the Drinking Water State Revolving Funds (SRF) Program. The expected Drinking Water SRF loan terms are 3 percent for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal.

The City is seeking up to $1,848,000 of funding from the Board of Water and Natural Resources for the wastewater improvements. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the either the Clean Water State Revolving Funds (SRF) Program. The expected Clean Water SRF loan terms are 3.25 percent for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal.

The amount and source of funds will be determined by the Board of Water and Natural Resources when the applications are presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

This public hearing will be held at the following time, date and location:

7:00 P.M.
December 21st, 2015
Canton Depot (600 West Fifth Street, Canton, SD)
Viking Room (lower level)

In compliance with the Americans with Disabilities Act (ADA), if you need special assistance to participate in this hearing, please contact the Canton Finance Officer at (605) 987-2881. Anyone who is deaf, hard-of-hearing or speech-disabled may utilize Relay South Dakota at (800) 877-1113 (TTY/Voice). Notification 48 hours prior to the hearing will enable the City to make reasonable arrangements to ensure accessibility to this hearing.

Kyle Cwach
Canton Finance Officer

Published in the Sioux Valley news on December 10, 2015 at the total approximate cost of $26.35.

Unapproved

MINUTES OF CANTON CITY COMMISSION MEETING
DECEMBER 21, 2015

The Canton City Commission met at the Depot Viking Room, on Monday, December 21st, 2015 at 7:00 p.m. with the following members present: Commissioners Anderson, Devick, Eich, Ekle, Ziebarth and Mayor Smith.
Commissioner Toso, Townsend and Elrod were absent at the time of roll call.

Also present were Interim City Manager Cwach and Deputy Finance Officer Leffler.

Guests who signed in are as follows: Myron Adam, Lacey Schmeling, Bill Thorson, Jeff Fossum, David Miller, Larissa Van Beek, Andy Wilcox, Lucy Wilcox, Gert Havelaar, and Chuck Andreson.

The Pledge of Allegiance was recited.

CONSENT CALENDAR
Commissioner Devick moved and Commissioner Ziebarth seconded to approve the consent calendar consisting of the following: 1) to approve the minutes, from the December 4th, 2015 Special Meeting, December 5th Special Meeting, December 7th Regular Commission meeting, and December 10th Special Meeting and that they are signed and published; 2) to approve the warrants to be listed at the end of the minutes; 3) to approve the November month-end reports; and 4) to approve the agenda. Unanimous Approval.

VISITOR DIALOGUE:

Commissioner Townsend arrived.

SRF PUBLIC HEARING – DAKOTA STREET PROJECT
This being the time and place for a public hearing for the SRF Funding for the Dakota Street project. Mayor Smith opened the hearing. Myron Adam, JSA and Lacey Schmeling, SECOG were present to report on the process so far; concerning the need to do this project, the options, and costs involved and the applications for State Revolving Fund finances. There were no proponents, nor opponents to be heard. Mayor Smith closed the hearing and invited discussion from the Commissioners.
Commissioner Anderson moved and Commissioner Ziebarth seconded to approve the applications for the SRF funding, the Cost and Effectiveness Certification Form and the following Resolutions for the SRF funding, that the Resolutions be given a number and authorize the Mayor to sign the Resolutions, applications and the Cost and Effectiveness Certification Form. Unanimous Approval.

RESOLUTION NO. 1233

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $1,648,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

_____
Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

RESOLUTION NO. 1234

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Drinking Water System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $760,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

_____
Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

2016 SALARY RESOLUTION
Commissioner Devick moved and Commissioner Anderson seconded to approve the following 2016 Salary Resolution, that it be given a number, signed and published as required by State law. Unanimous Approval.

RESOLUTION # 1235

CITY OF CANTON
2016 PAYROLL RESOLUTION

WHEREAS, it is in the best interests of the City of Canton to pay a competitive wage to attract and retain the best employees to effectively and responsibly serve the community; and

WHEREAS, the City of Canton, as an employer, makes periodic adjustments to wages and compensation for inflation, regulatory requirements, and in comparison to other employers; and
WHEREAS, Full-Time Police Personnel's Hourly Rate is based on a work schedule of 2,184 hours/year, and all other City Full-time Personnel's Hourly Rate is based on a work schedule of 2,080 hours/year.
NOW, THEREFORE, BE IT RESOLVED, that the Governing Body of the City of Canton hereby approves and adopts the following wage rates for 2016 payment schedule

ELECTED OFFICIALS
Mayor: Charles Smith/$46.15/Bi-Weekly **City Commission:** Farrell Anderson/$46.15/Bi-Weekly; John Devick/$46.15/Bi-Weekly; Shelly Eich/$46.15/Bi-Weekly; Richard Ekle/$46.15/Bi-Weekly; Kari Elrod/$46.15/Bi-Weekly; Jonathan Toso/$46.15/Bi-Weekly; Kristen Townsend/$46.15/Bi-Weekly; Steve Ziebarth/46.15/Bi-Weekly

FULL-TIME/PART-TIME:
Building Inspector: Eric Eneboe/$25.00 per inspection plus mileage **Custodial**: Marge Buysman/$13.06; Ron Buysman/$13.06; **Finance**: Kyle Cwach/$35.56; Karen Leffler/$23.15; Tiffany VanDeKieft/$14.50 **General Government**: Larissa Van Beek/$15.86; Carol Mulder/$12.02 **Library**: Edith Nelson/$23.66; Jonette Chaon/$10.82; Levi Magnuson/$10.57; Laura Olson/$11.30; Tracey Zylstra/$13.47 **Parks & Recreation**: Mark Swier/$15.56 **Police**: David Miller/$32.34; David Jacobs/$24.66; Patrick McGawley/$18.52; Michael Meinzer/$18.52; Christine Reitsma/$19.93; Joseph Carlson/$18.02; Travis Johns/$18.02; Steve Lowry/$18.02 **Public Works**: Bill Thorson/$32.34; Ryan Vandemore/$22.36; Justin Blade/$17.82; Chris Krogmann/$15.19; Dalton Nelson/$8.94 **Rubble Site**: Gary Jones/$9.60; Laurie Gates/$9.03 **Snow Removal**: David Baldwin/$10.95; Craig Dittberner/$10.95; Kelly Eilers/$11.48; Sherman Gardner/$10.95; Andy McCann/$10.95; Gary Renli/$10.95; Dwaine Tiedemann/$10.95; **Water & Sewer:** Jeff Fossum/$29.19; Russell Doty/$15.19; Steve Erickson/$15.19

PROVIDED, HOWEVER, the City Manager may make wage increases for the completion of education requirements, for passing certification tests, for fulfillment of job requirements set at the date of employment, and the City Manager may make meritorious wage increases for Department Heads within the budgetary appropriation of the respective departments.

Dated at Canton, South Dakota this 21st day of December 2015.

FOR THE GOVERNING BODY OF THE
CITY OF CANTON, SOUTH DAKOTA

By _____
Charles Smith, Mayor

ATTEST:

By _____
Kyle Cwach, Finance Officer

Adopted: 12/21/2015
Publish: 12/31/2015

Published once at the approximate cost of _____.

2016 EMPLOYEE WELLNESS PROGRAM
Commissioner Ziebarth moved and Commissioner Townsend seconded to approve DakotaCare's year-long wellness program and the FITBIT program for 2016 and authorize the Mayor to sign. Commissioners Anderson, Devick, Eich, Townsend, Ziebarth, and Mayor Smith voted aye. Commissioner Ekle voted nay. Motion Carried.

SANFORD CANTON-INWOOD AMBULANCE LEASE AMENDMENT
Commissioner Devick moved and Commissioner Ziebarth seconded to approve the amendment increasing the rent to $150.00 for use of the Fire Hall. Unanimous Approval.

2016 FEE SCHEDULE
Commissioner Devick moved and Commissioner Eich seconded to approve the proposed changes to the 2016 Fee Schedule as recommended by the City Staff, as presented and on file. Unanimous Approval.

CWSRF CERTIFICATION OF PROJECT COMPLETION
Commissioner Ziebarth moved and Commissioner Devick seconded to approve the Certificate of Project Completion for the Beaver Creek Life Station Project and authorize the Mayor to sign. Unanimous Approval.

2015 AUDIT CONTRACT
Commissioner Devick moved and Commissioner Eich seconded to approve the Audit Engagement Letter for the 2015 Audit, as presented and on file, with the fee for $9,900.00 and authorize the Mayor to sign. Unanimous Approval.

CONNECTING KIDS CONTRACT FOR 2016
Commissioner Ziebarth moved and Commissioner Eich seconded to approve the contract for the Connecting Kids program for 2016, as presented and on file, and authorize the Mayor to sign. Unanimous Approval.

DIALOGUE

Interim City Manager Cwach commented on:

The City Offices will be closed on Thursday afternoon and Friday to observe the Christmas Holidays.

The Library and the rubble site will be closed as well.

City staff visited the holiday open houses last week.

Please have the Employee of the Year nominations in by December 31st, as well as the RSVP's for the City Employee Appreciation Banquet.

Commissioner Eich reported:

That she has received a phone call regarding the pickup of garbage by the garbage haulers before 6:00am.

Mayor Smith wished everyone a Merry Christmas and Happy New Year.

ADJOURN

Commissioner Devick moved and Commissioner Eich seconded to adjourn. Unanimous Approval.

_____

Karen K. Leffler
Deputy Finance Officer

WARRANTS:

RESOLUTION NO. 1234

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Drinking Water System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $760,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

Charles Smith, Mayor
City of Canton

(Seal)

Attest: _____
City of Canton Finance Officer

RESOLUTION NO. 1233

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Canton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to Dakota Street-Phase I Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $1,648,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted in Canton, South Dakota, on this 21st day of December, 2015.

APPROVED:

Charles Smith, Mayor
City of Canton

(Seal)

Attest:
City of Canton Finance Officer

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Lacey Schmeling	SECOG
Myron Adam	JSA
Larissa VanBeek	
David Miller	Canton Police Dept
Chuck Andresen	Canton

2

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Andy Wilcox	Sioux Valley News
Lucy Wilcox	412 west 5th Street
Gert Vonelaar	606 E Poplar

3

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING
Jeff Fossum	814 E 5 Canton City of Canton
Bill Thorson	503 N Lincoln City of Canton

4

~~1025~~

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

Please sign in:

NAME	ADDRESS / REPRESENTING	
STEVE ZIEGARTH	1012 N. KIDDER ST.	CITY OF CANTON
Kristen Townsend	1700 Holiday Drive	City of Canton

5

City of Canton

Public Hearing For DW-SRF & CW-SRF Applications
Dakota Street Improvements Project
7:00 PM, Monday, December 21st, 2015
Viking Room at the Canton Depot-600 West Fifth Street, Canton, SD

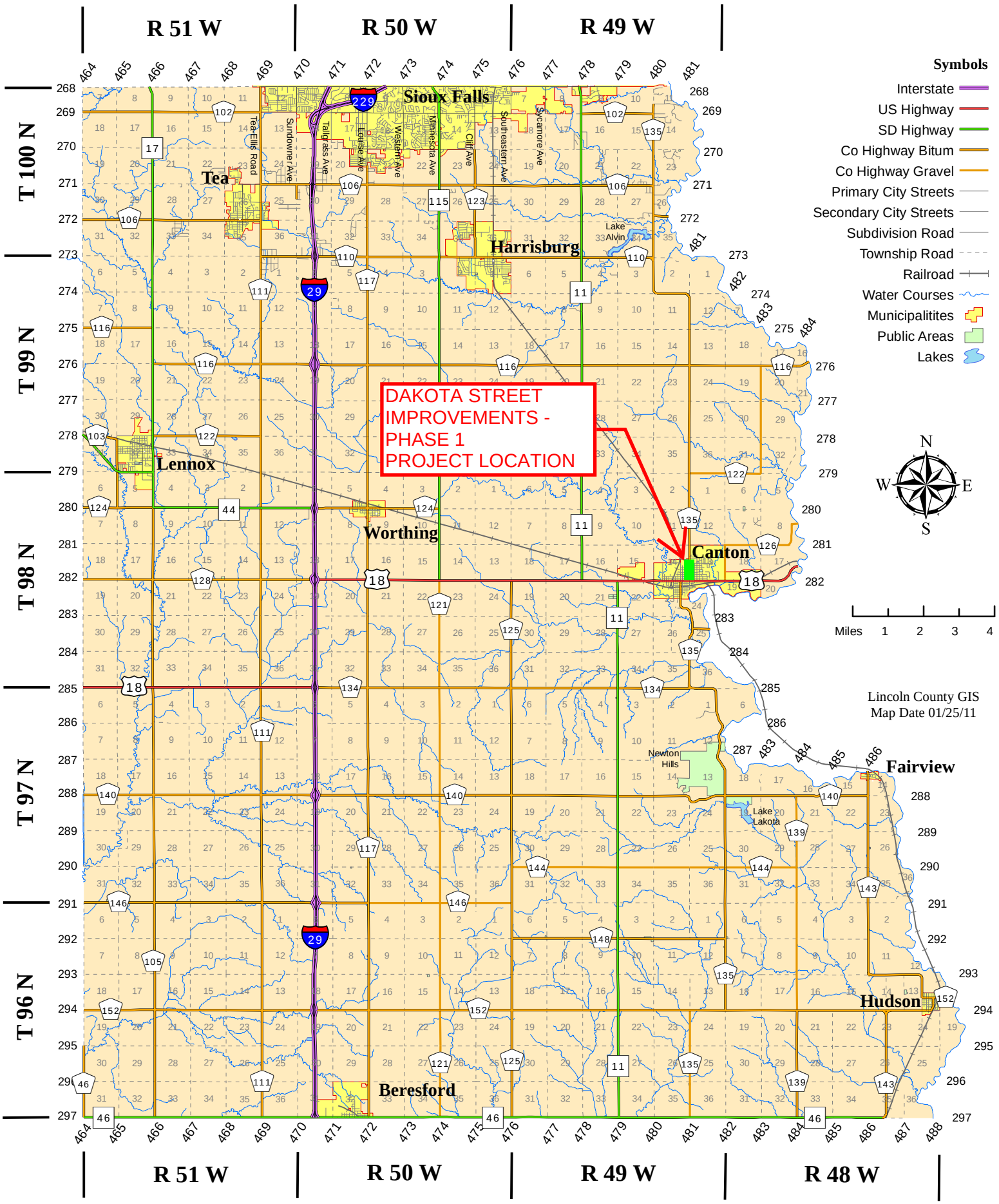
Please sign in:

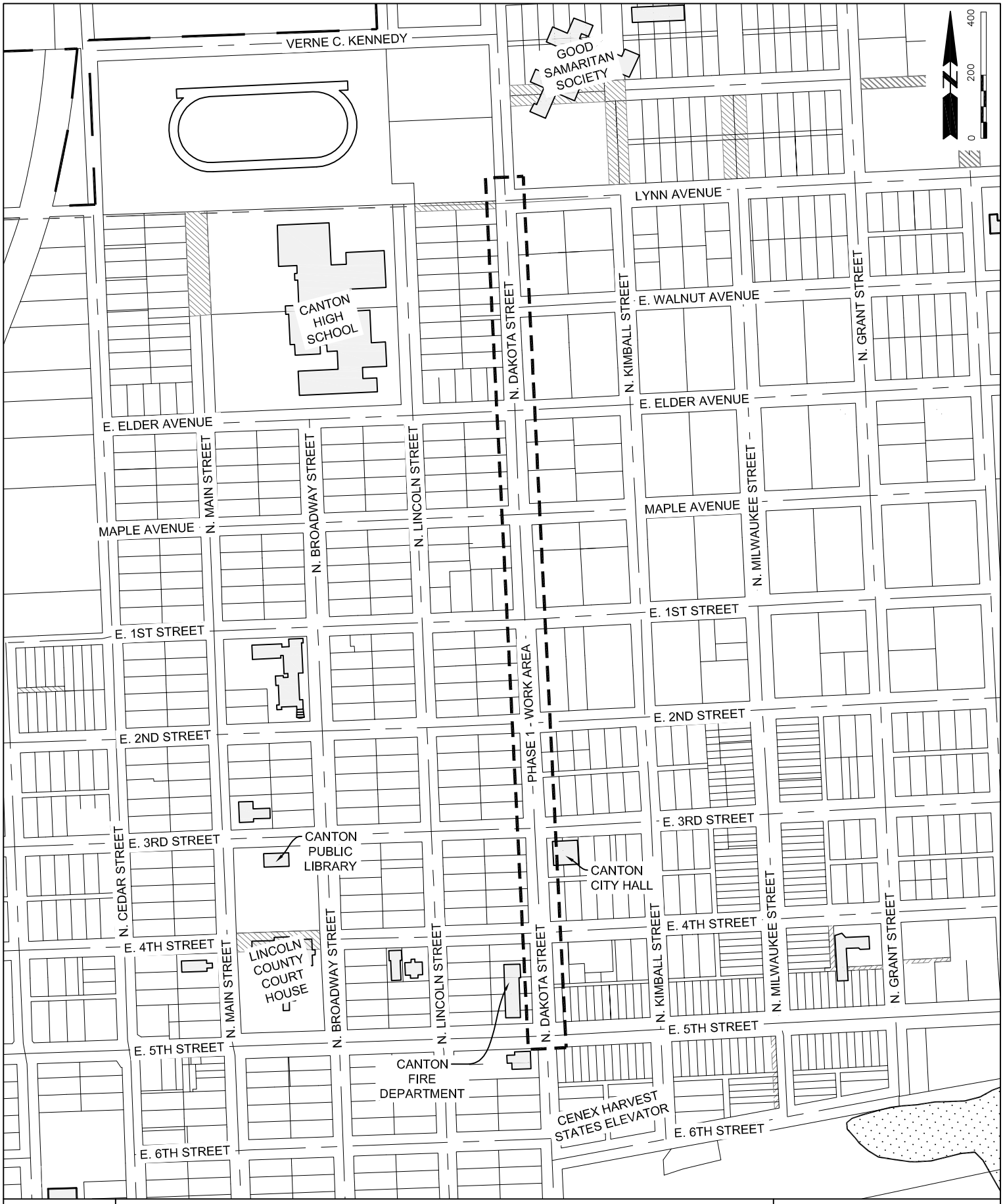
NAME	ADDRESS / REPRESENTING	
Ryle Cund	210 N. Dakota	City of Canton
Karen Leffler	210 N Dakota	City of Canton
Chuck Smith	724 E. Walnut	City of Canton
John Devick	420 N. Milwaukee Ave	City of Canton
Shelly Eich	1015 N. Kidder	City of Canton
Richard S. Eble	314 W. 3rd	City of Canton
Darrell Ad	910 Candy Ct	City of Canton

h. Project Location Map

Lincoln County

Roads





Sheet No.

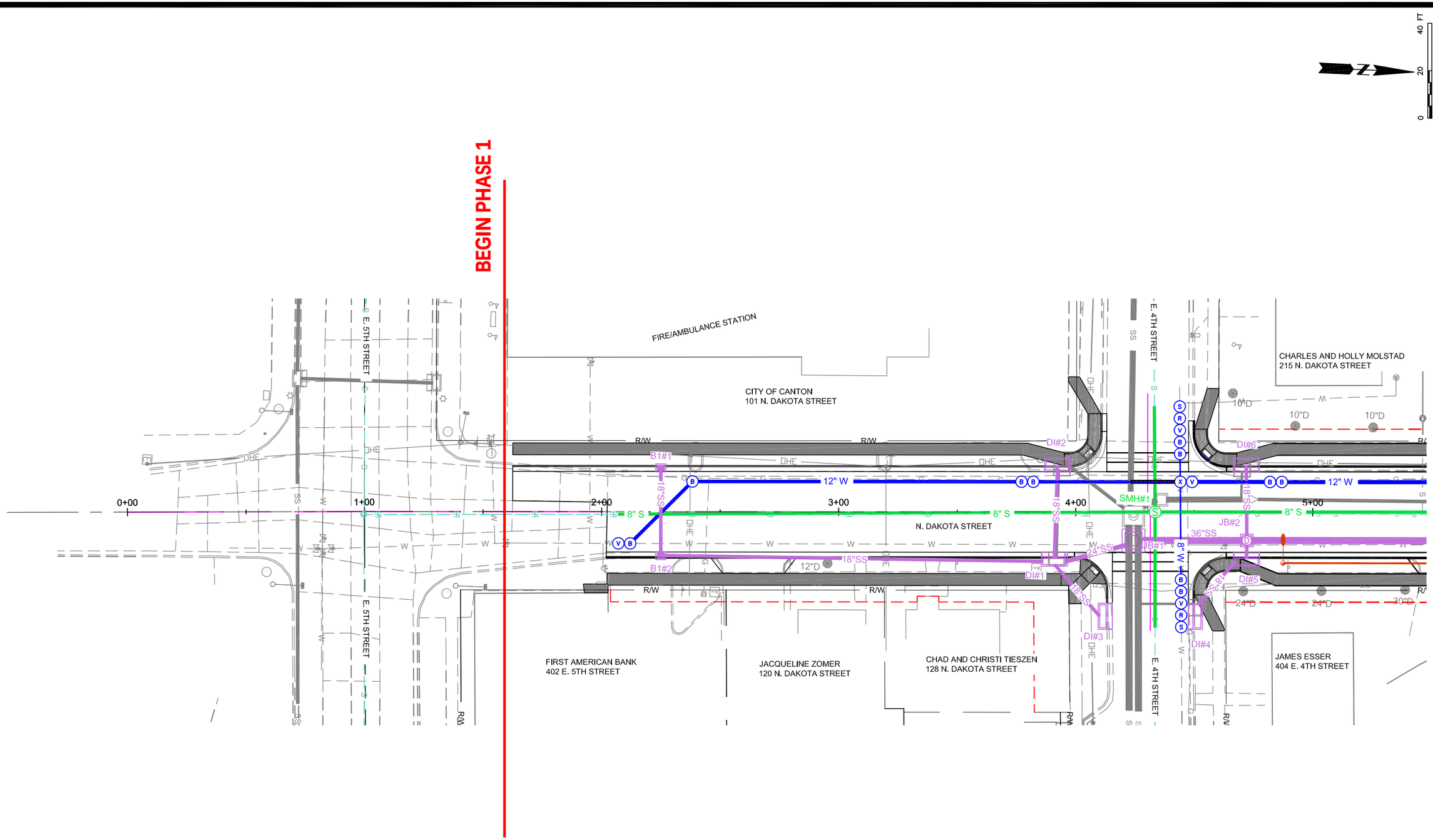
1 OF 1

EXHIBIT A
DAKOTA STREET
PHASE 1
THE CITY OF CANTON,
SOUTH DAKOTA

JSA ENGINEERS AND LAND SURVEYORS
6810 S. Lyncrest Ave, Suite 101 Sioux Falls South Dakota 57108-2515
Phone: (605)367-1036 Fax: (605)367-1002

PROJECT: 92140
DATE: 7-3-2015
DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
DRAWING: 92140-DAKOTA
STREET EXHIBIT PHASE 1

i. Preliminary Plan and Profile Drawings



PRELIMINARY
(NOT FOR CONSTRUCTION)
3/30/2015

N. DAKOTA STREET IMPROVEMENTS

5TH STREET TO 281ST STREET
CANTON, SOUTH DAKOTA

SURFACE

REVISIONS

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REVISION 4: Text	BY: BY	DATE: DATE
REVISION 5: Text	BY: BY	DATE: DATE

PLAN VIEW

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: PLAN & PROFILE.dwg
DATE: 1/12/2015

JSA

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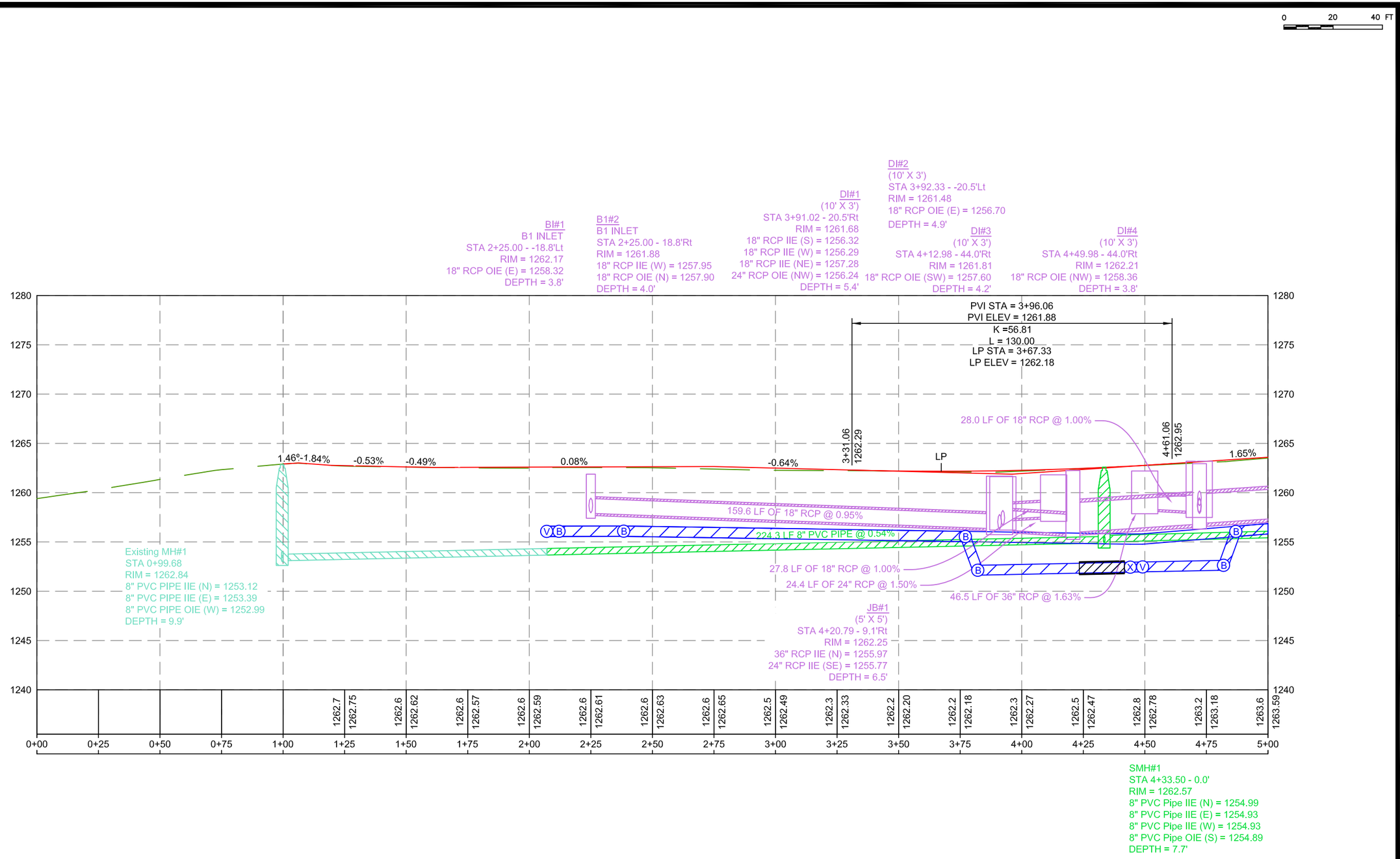

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CANTON, SOUTH DAKOTA

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PROFILE VIEW

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ACAD FILE: PLAN & PROFILE.dwg
DATE: 1/12/2015

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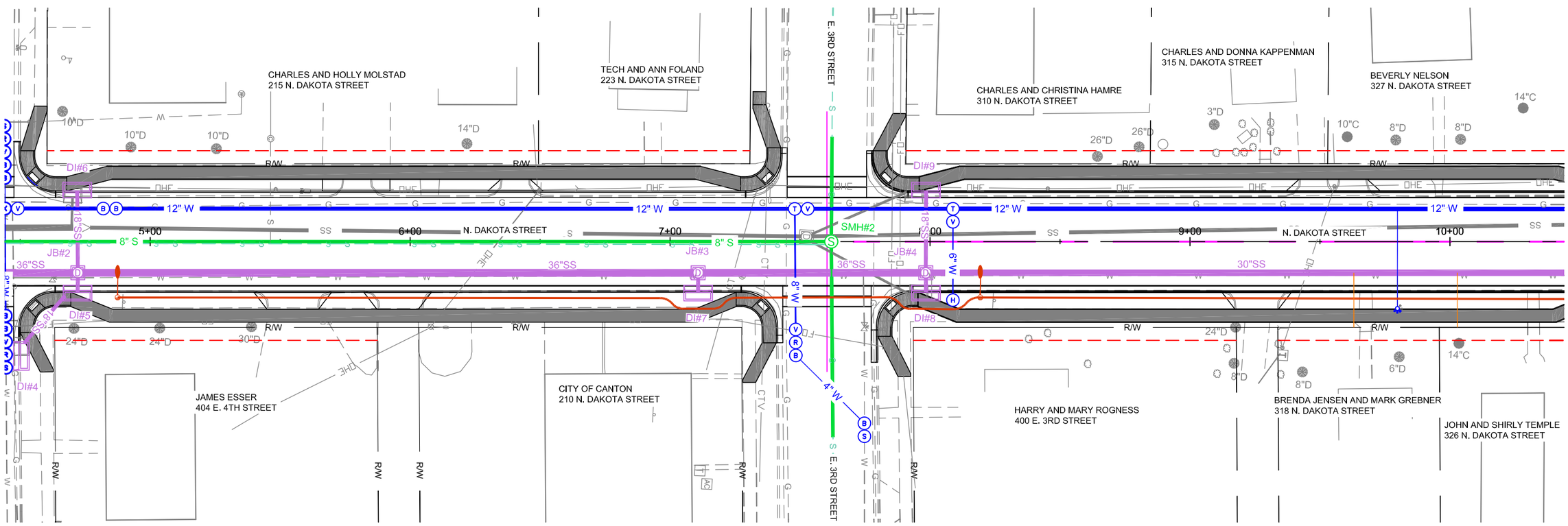

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CANTON, SOUTH DAKOTA

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PLAN VIEW

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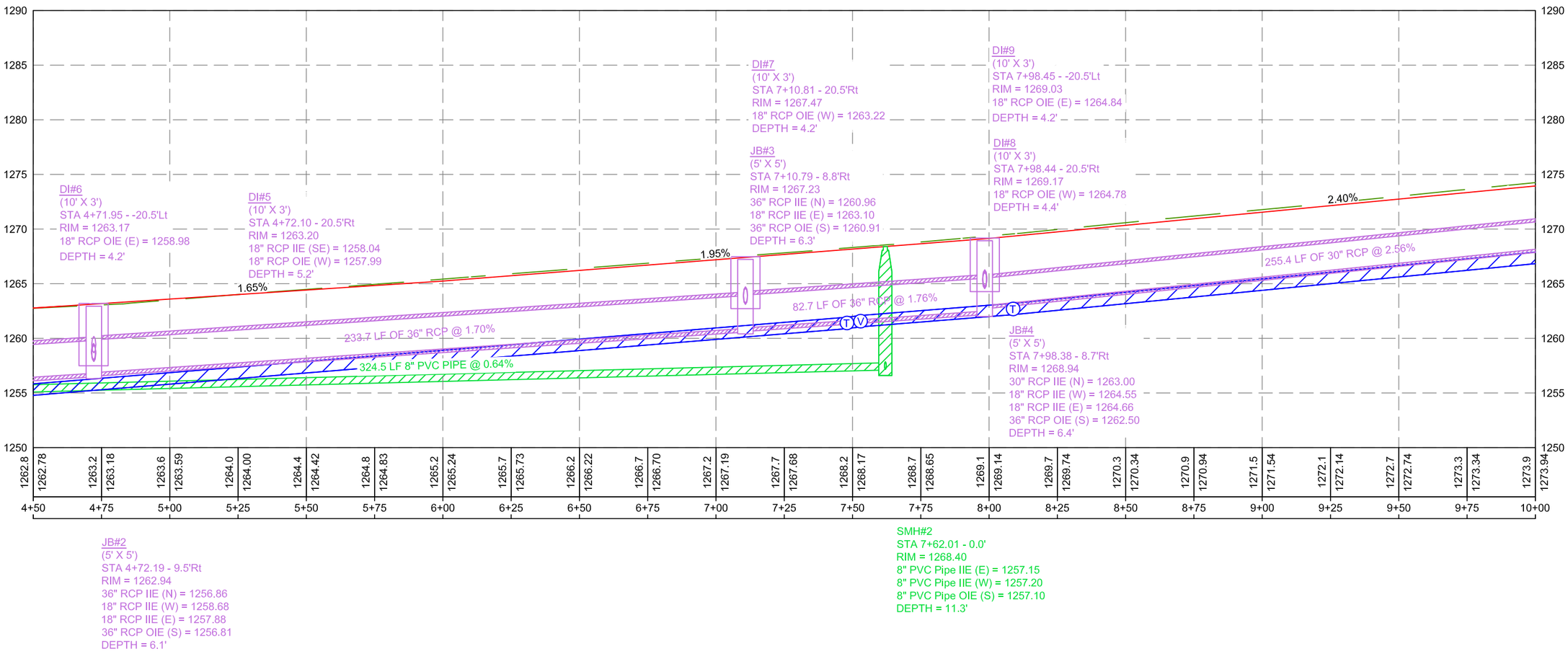

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5TH STREET TO 281ST STREET
CANTON, SOUTH DAKOTA

SURFACE

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PROFILE VIEW

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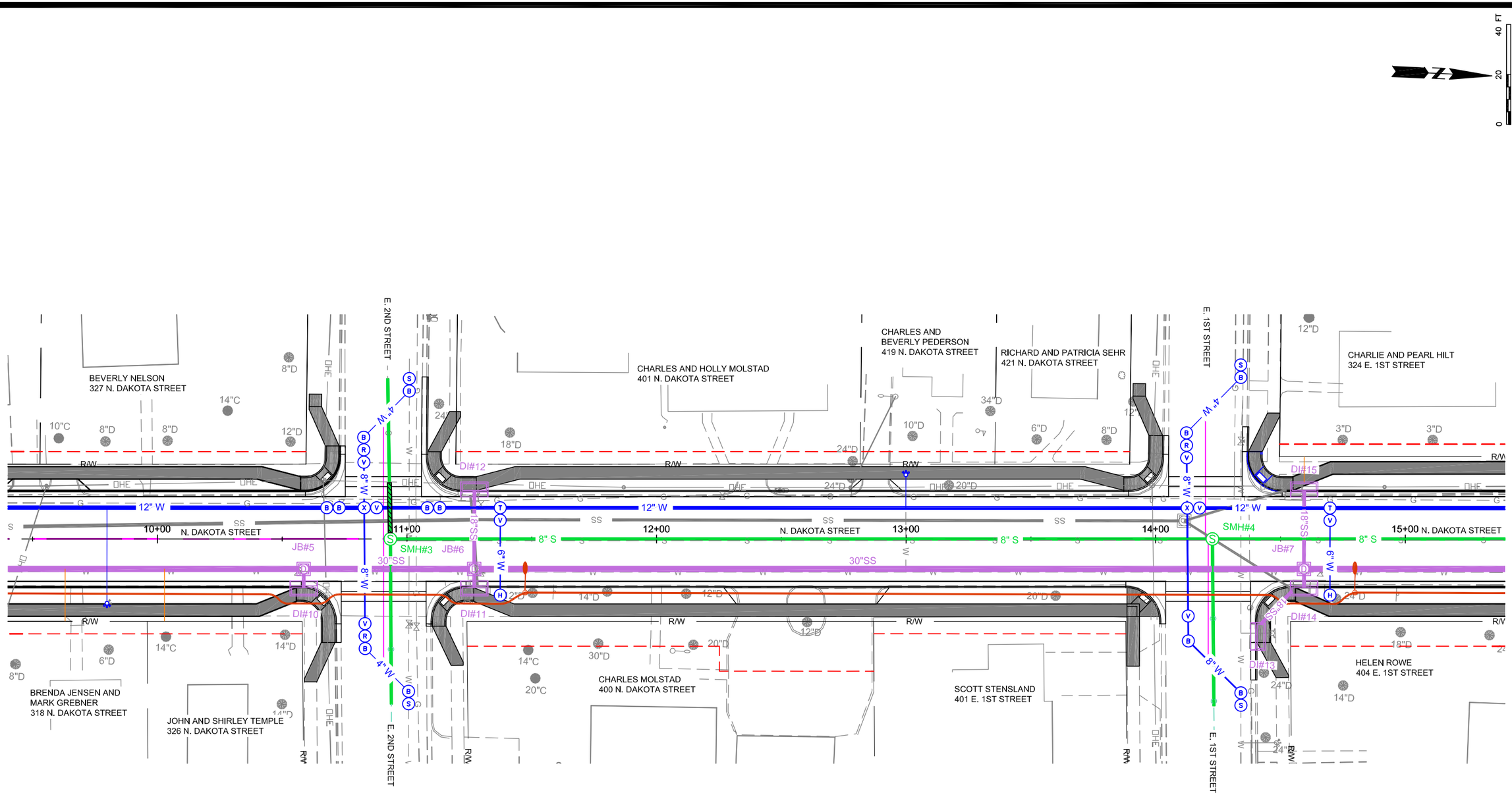

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CANTON, SOUTH DAKOTA

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PLAN VIEW

DESIGNED BY: DMC
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ACAD FILE: PLAN & PROFILE.dwg
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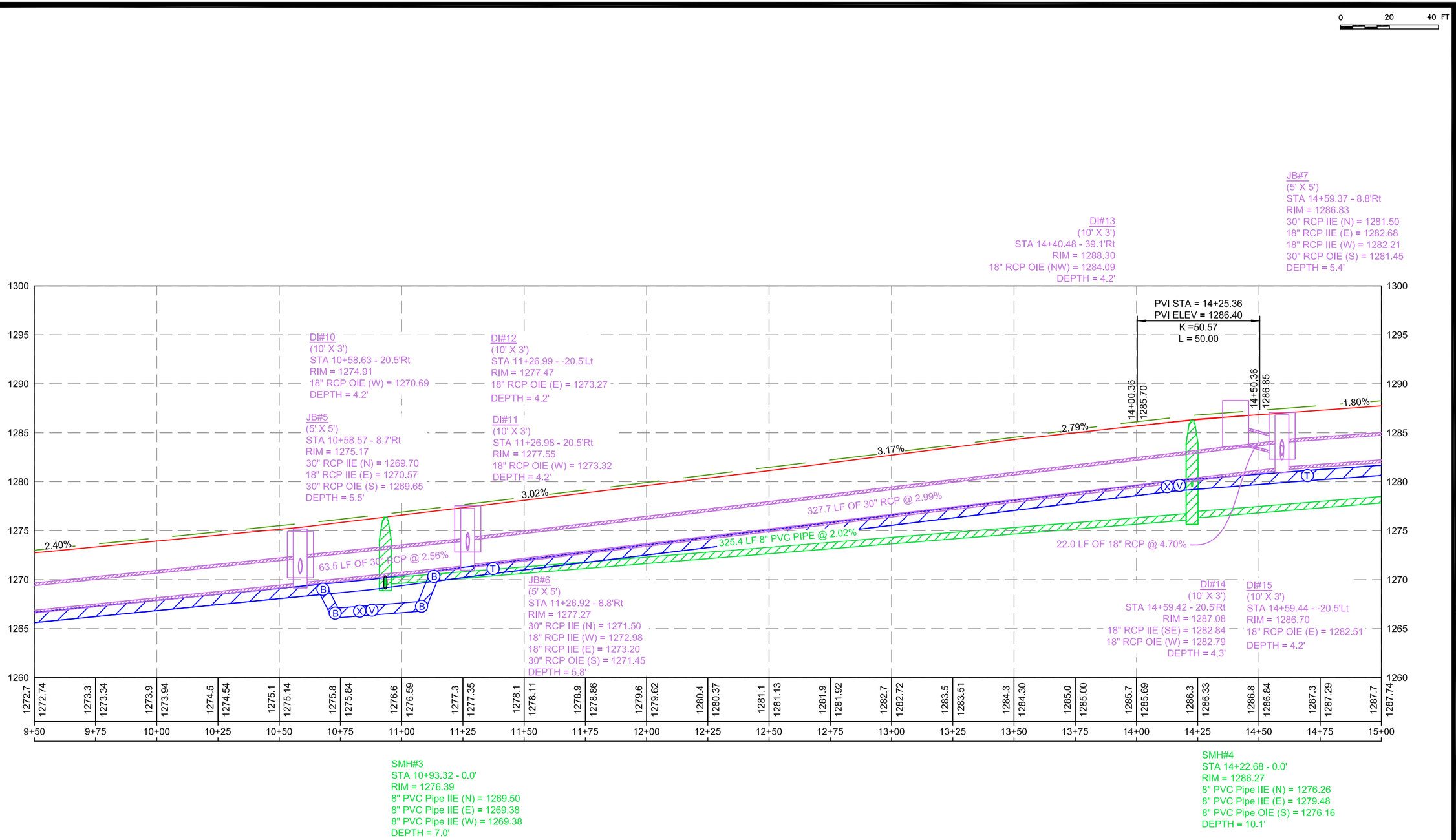

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CANTON, SOUTH DAKOTA

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PROFILE VIEW

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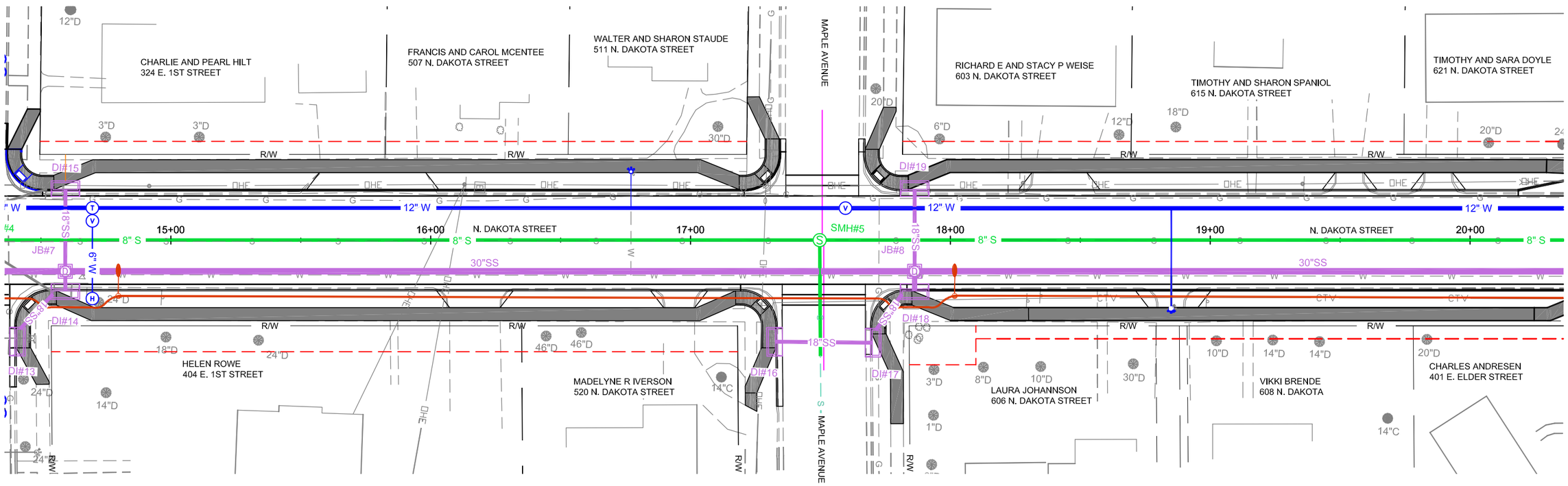

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CANTON, SOUTH DAKOTA

SURFACE

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PLAN VIEW

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DATE: 1/12/2015

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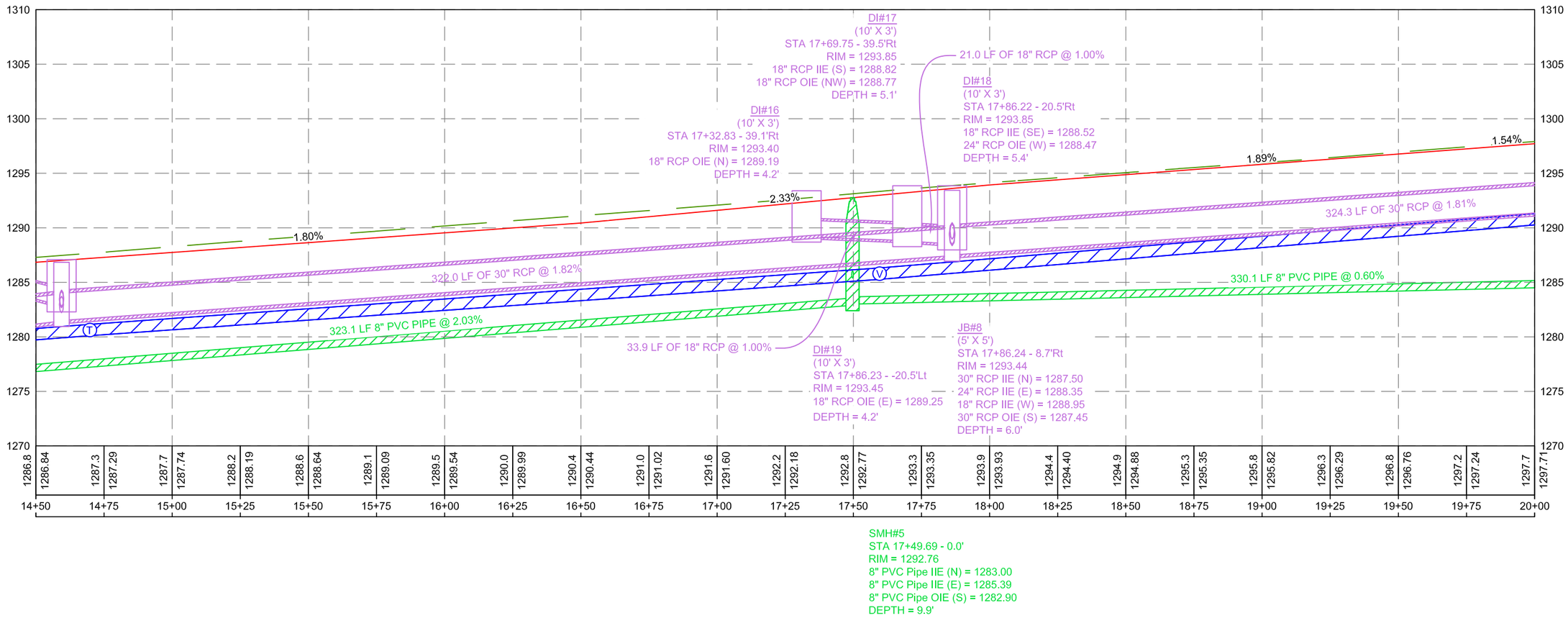

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CANTON, SOUTH DAKOTA

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PROFILE VIEW

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DATE: 1/12/2015

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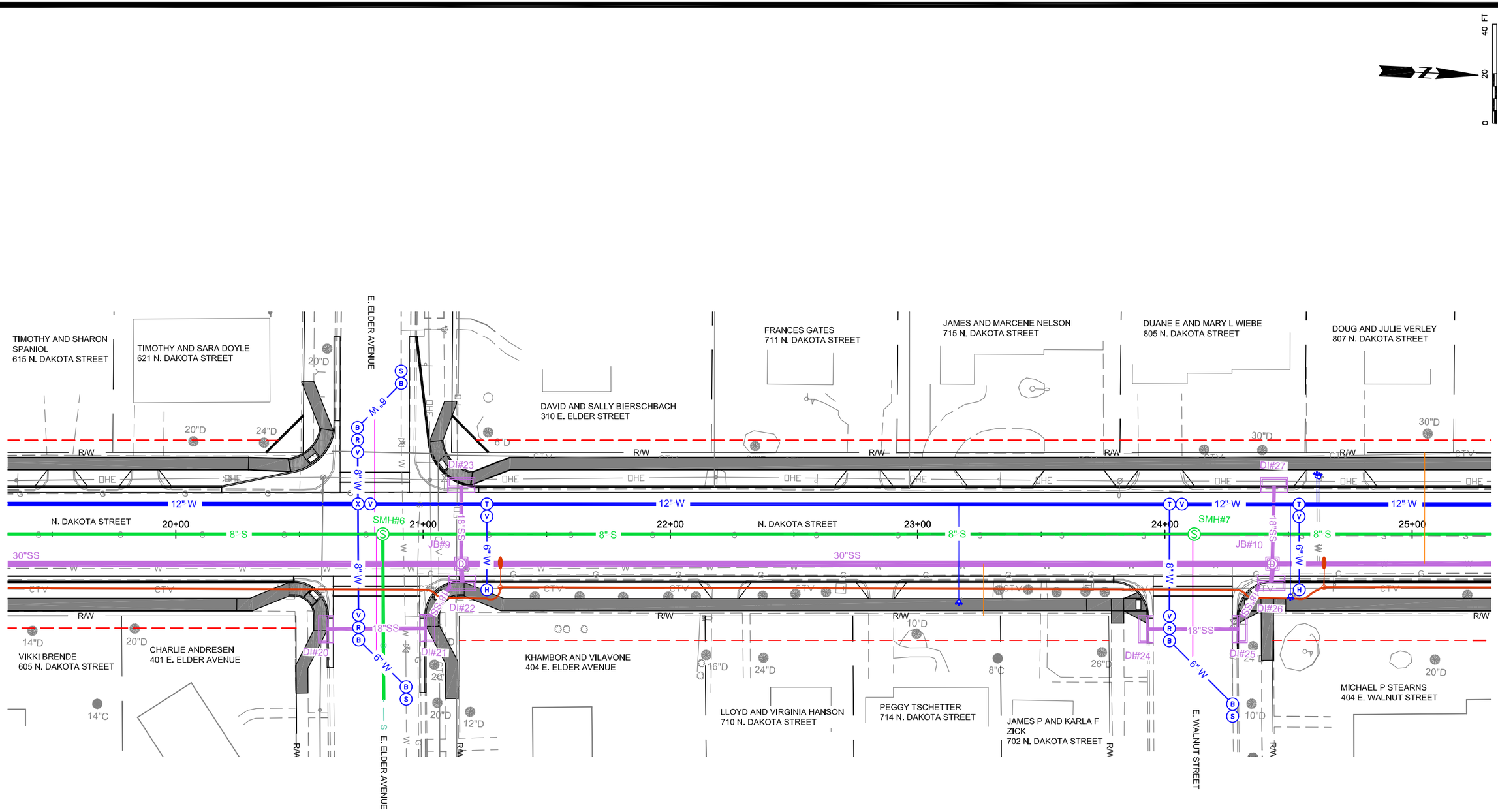

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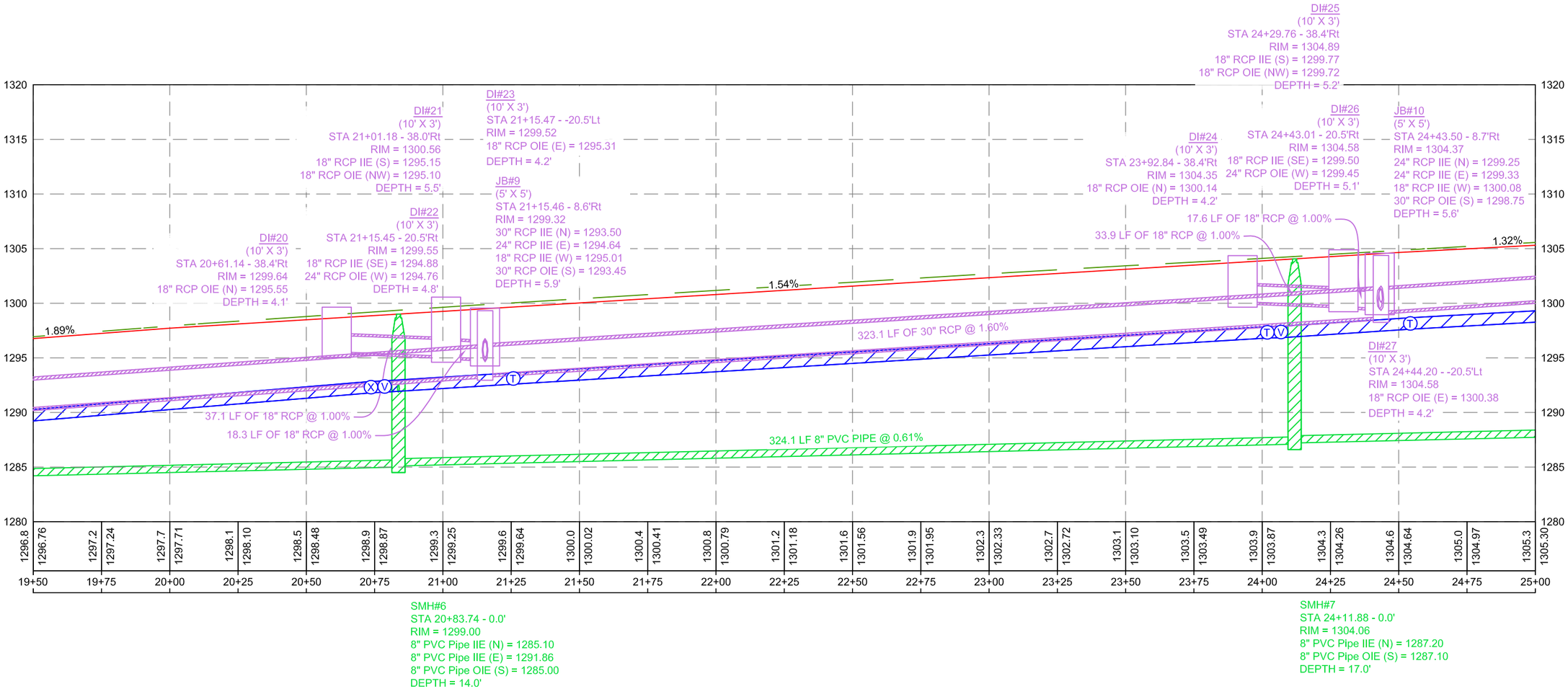

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PROFILE VIEW

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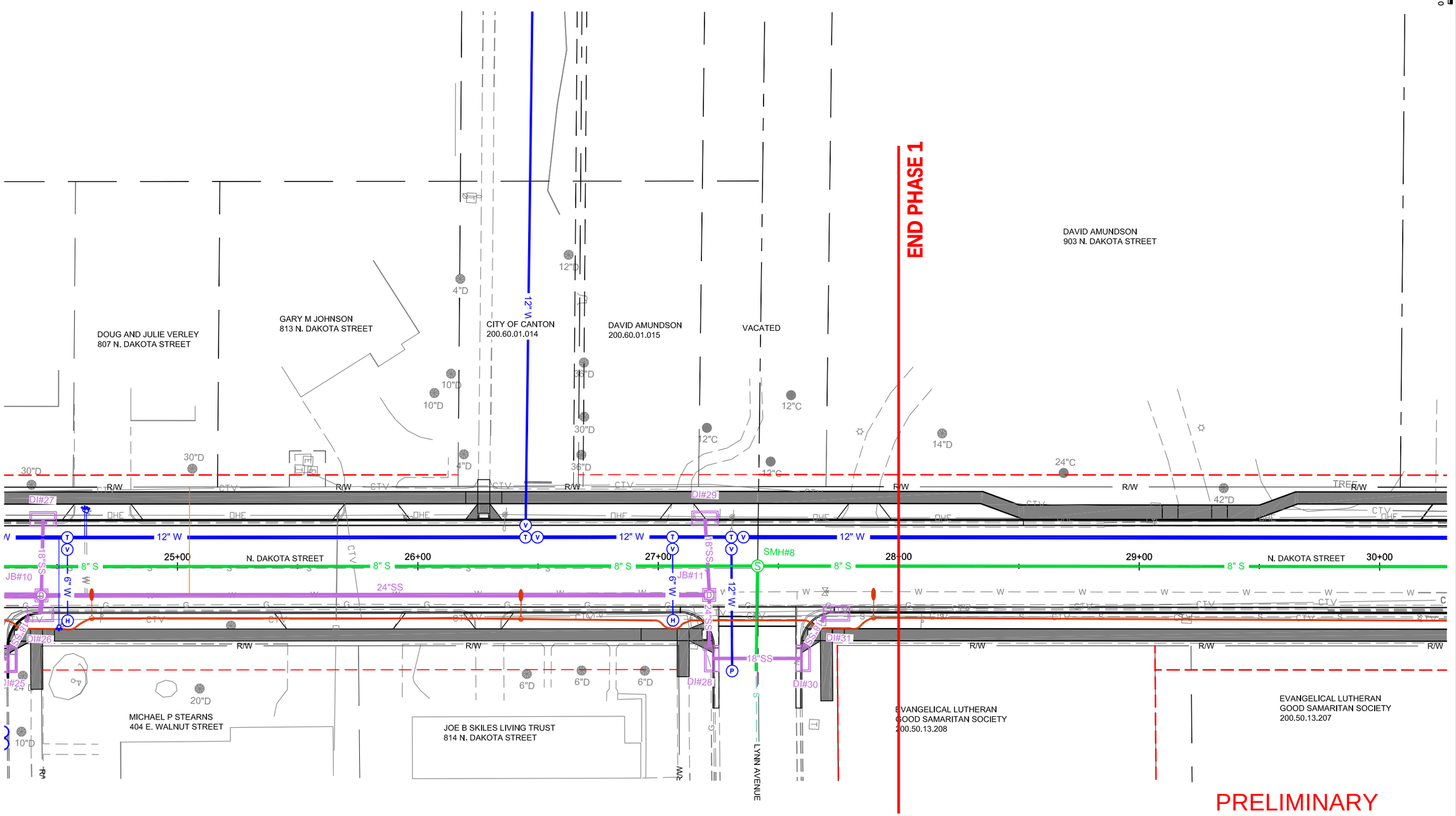

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N. DAKOTA STREET IMPROVEMENTS

5TH STREET TO 281ST STREET
CANTON, SOUTH DAKOTA

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PLAN VIEW

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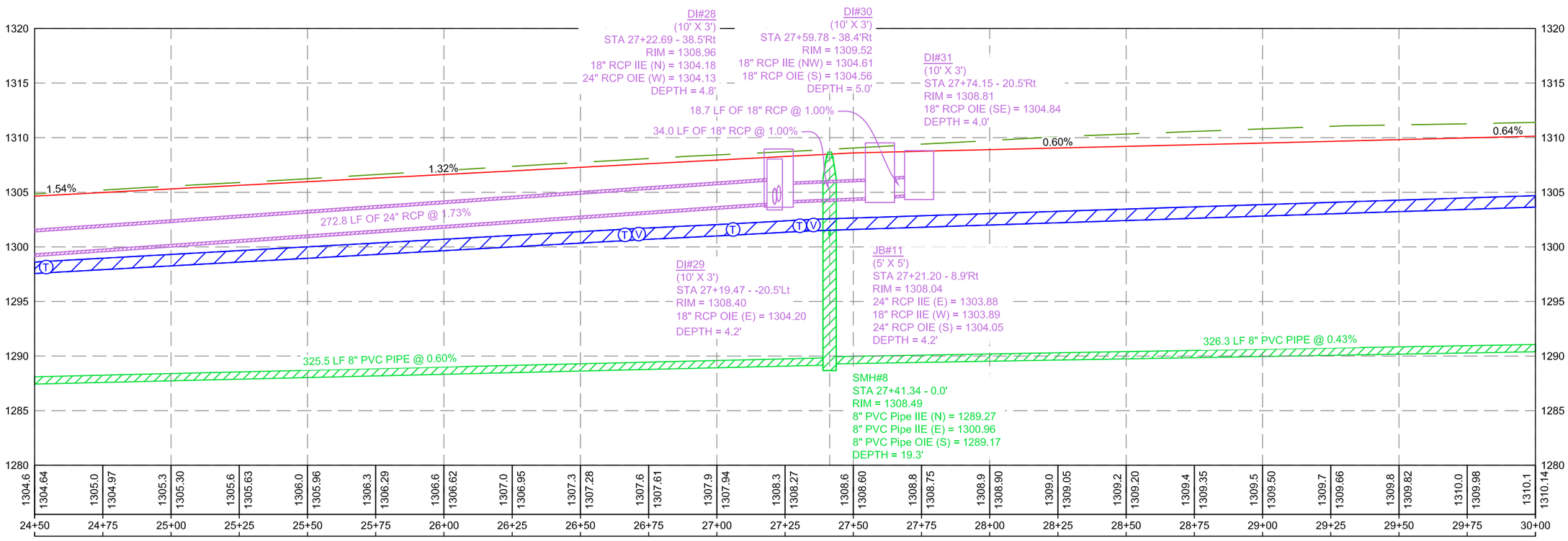

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PROFILE VIEW

DESIGNED BY: DMC
DRAWN BY: DMC
CHECKED BY: MKA
ACAD FILE: PLAN & PROFILE.dwg
DATE: 1/12/2015

JSA

SHEET NO.

I-12

Sheet Series

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Dell Rapids

Project Title:	10th Street and Highway 115 Improvements Projects
Funding Requested:	$1,037,000
Total Project Cost:	$1,037,000
Project Description:	Dell Rapids is proposing to replace 1,400 feet of sanitary sewer at the intersection of SD Highway 115, Old Highway 77 and 4th Street with 12-inch PVC lines. The city is also proposing to replace approximately 1,000 feet of vitrified clay sewer pipe with 8-inch PVC on a portion of 10th Street near the hospital. Brick manholes will also be replaced along with providing storm sewer improvements as needed in this area.
Alternatives Evaluated:	The "No Action" alternative was rejected because the existing sanitary sewer mains are very old and in poor condition. The SD DOT plans to reconstruct Highway 115 during the 2016 and 2017 construction seasons, and the city plans to replace these utilities prior to that construction. Alternative 2 proposes to replace the sanitary sewer lines and appurtenances in the Highway 115 area by open cut methods. Blasting and rock excavation may be required due to bedrock. Alternative 3 proposes to replace sewer lines and appurtenances on a portion 10th Street. Storm sewer improvements will also occur where necessary. The city selected Alternatives 2 and 3.
Implementation Schedule:	Design of the project would begin in the summer of 2016 with construction starting in the fall of 2016 and continuing through 2017.
Service Population:	3,700
Current Domestic Rate:	$43.64 per 5,000 gallons usage

Interest Rate: 3.25% Term: 30 years Security: System Revenue

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If funding is provided as all loan, Dell Rapids would have 126% coverage based on the current rate of $43.64/5,000 gallons. Dell Rapids could reduce rates by 7.5% to provide 110% coverage resulting in rates of $40.40/5,000 gallons. However, Dell Rapids has a second funding application which will require a surcharge of $20.70 if funded as all loan. This would bring the wastewater rate to $61.10-$64.34/5,000 gallons.

25% Funding Subsidy:	$259,250 subsidy with a loan of $777,750.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $777,750, Dell Rapids would have 132% coverage based on the current rate of $43.64/5,000 gallons. Dell Rapids could reduce rates by 10% to provide 110% coverage resulting in rates of $39.30/5,000 gallons. However, Dell Rapids has a second funding application which will require a surcharge of $20.70 if funded as all loan. This would bring the wastewater rate to $60-$64.34/5,000 gallons.

50% Funding Subsidy:	$518,500 subsidy with a loan of $518,500.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $518,500, Dell Rapids would have 139% coverage based on the current rate of $43.64/5,000 gallons. Dell Rapids could reduce rates by 12.5% to provide 110% coverage resulting in rates of $38.20/5,000 gallons. However, Dell Rapids has a second funding application which will require a surcharge of $20.70 if funded as all loan. This would bring the wastewater rate to $58.90-$64.34/5,000 gallons.

75% Funding Subsidy:	$777,750 subsidy with a loan of $259,250.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $259,250, Dell Rapids would have 146% coverage based on the current rate of $43.64/5,000 gallons. Dell Rapids could reduce rates by 14.8% to provide 110% coverage resulting in rates of $37.20/5,000 gallons. However, Dell Rapids has a second funding application which will require a surcharge of $20.70 if funded as all loan. This would bring the wastewater rate to $57.90-$64.34/5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: JIM ANDERSON

FINANCIAL REVIEW COMPLETED BY: DAVE RUHNKE

SECOG
SOUTH EASTERN COUNCIL OF GOVERNMENTS
SOUTH DAKOTA

RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

December 31, 2015

Andy Bruels
SD-DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Dear Mr. Bruels:

Enclosed, please find the Sanitary / Storm Sewer Facilities Funding Application for the City of Dell Rapids 2016 10th Street and Highway 115 project. Included with the general application are the following appendices:

Appendix A – Supplemental Signed Application Forms including the Cost and Effectiveness Certification Form, Certification of Needs Categories, and Certification Regarding Debarment, Suspension, and Other Responsibility Matters.
Appendix B – Signed Application Resolution
Appendix C – User Rate Ordinances
Appendix D – Amortization of Existing Debt
Appendix E – 2014 Financial Statements
Appendix F – 2015 Budget
Appendix G – 2016 Budget
Appendix H – Public Hearing Notice, Sign-In Sheet and Minutes
Appendix I – Facilities Plan
Appendix J – SAM Registration

Should the Department have questions or comments pertaining to this application, please contact the engineer listed in the application or me.

Sincerely,

Janice Gravning

Janice Gravning
Accountant

Enclosures

cc: City of Dell Rapids
East Dakota Water Development District

500 N. Western Ave. Suite 100 • Sioux Falls, SD 57104
Phone: 605.367.5390 • Fax: 605.367.5394
Website: www.secog.org • E-mail: janice@secog.org
Lynne Keller Forbes, Executive Director

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: City of Dell Rapids	Proposed Funding Package
Address: PO Box 10 Dell Rapids, SD 57022	Requested Funding $1,037,000 Local Cash
Subapplicant:	Other: Other:
DUNS Number: 170381602	Other: TOTAL $1,037,000

Project Title: 2016 10th Street and Highway 115 Improvements Project

Description:

The City of Dell Rapids is proposing improvements to its sanitary and storm sewer system in two locations in the community. At the intersection of Highway 115, Old Highway 77 and 4th, Street a 12" PVC sanitary sewer will be installed to replace aging infrastructure that has outlived its useful life. SD DOT plans to reconstruct SD Highway 115 through Dell Rapids in 2017, and replacement of the utilities prior to the SD DOT will result in cost savings since most surfacing repairs will be addressed with the SD DOT project. The Highway 115 portion of this project will cost approximately $617,000.

The 10th Street portion of the project consists of the replacement of brick manholes and approximately 1,000 feet of vitrified clay sanitary sewer pipe as well as drainage improvements in the area. The 10th Street portion of this project will cost approximately $420,000.

The City has a wastewater reserve fund. The City's current rate for 5,000 gallons of wastewater is $36.38. This rate will increase to $43.64 in early 2016.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Scott Fiegen, Mayor Name & Title of Authorized Signatory (Typed)	Signature	12-30-1 Date

Professional Consultants

Application Prepared By: South Eastern Council of Governments

Contact Person: Janice Gravning

Mailing Address: 500 N. Western Avenue, Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 367-5390 Fax: (605) 367-5394

Email address: janice@secog.org

Consulting Engineering Firm: DGR Engineering

Contact Person: Lance Mayer, P.E.

Mailing Address: 2909 E. 57th Street, Suite 101

City, State, and Zip: Sioux Falls, SD 57108

Telephone Number: (605) 339-4157 Fax: (605) 339-4175

Email address: lmayer@dgrnet.com

Legal Counsel's Firm: Vogt Brown Merry & Hammer

Contact Person: Dean Hammer

Mailing Address: 301 E. 4th Street, Suite 1

City, State, and Zip: Dell Rapids, SD 57022

Telephone Number: (605) 428-5444 Fax: (605) 428-0107

Email address: drlaw@siouxvalley.net

Bond Counsel's Firm: Davenport, Evans, Hurwitz & Smith, LLP

Contact Person: Doug Hajek

Mailing Address: 206 W. 14th St., PO Box 1030

City, State, and Zip: Sioux Falls, SD 57101-1030

Telephone Number: (605) 336-2880 Fax: (605) 335-3639

Email address: dhajek@dehs.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$16,012					$16,012
D. Other - SECOG	$6,000					$6,000
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$79,726					$79,726
B. Project Inspection Fees	$79,726					$79,726
C. Other	$16,012					$16,012
4. Construction & Improvements	$688,580					$688,580
5. Equipment						
6. Contractual Services						
7. Other						
8. Other - Misc & Rounding	$41,942					$41,942
9. Subtotal (Lines 1-8)	$927,998					$927,998
10. Contingencies	$109,002					$109,002
11. Total (Lines 9 and 10)	$1,037,000					$1,037,000
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CWSRF/CWFCP		$1,037,000	March 25, 2016
Other (Explain)			
Other (Explain)			
Total		$1,037,000	$1,037,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

10th STREET + HWY 115 - CWSRF

General Information

The month and day your fiscal year begins: January 1st

Population Served Current: 3,700 2010 3,633 2000 2,980

Top three employers within 30 miles	Number of Employees	Type of Business
Sanford Health	8571	Health Care
Avera Health	6259	Health Care
John Morrell & Company	3350	Meat Processor

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☒ 2. Revenue Bond
- ☐ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2006	2008	2010	2011	2014	
Purpose	CW-02 4th Street	CW-03 12th Street Drainage	CW-04 Lift Station	CW-05 15th Street Phase 1	CW-06 15th Street Phase 2	
Security Pledged	CW Revenue	CW Revenue	CW Revenue	CW Revenue	CW Revenue	
Amount	$561,737	$1,062,000	$950,000	$344,359	$612,000	
Maturity Date (mmm/yyyy)	4/2027	1/2029	4/2030	10/2032	1/2035	
Debt Holder	BWNR	BWNR	BWNR	BWNR	BWNR	
Debt Coverage Requirement	110%	110%	110%	110%	110%	
Avg. Annual Required Payment	$38,307	$72,422	$64,874	$22,972	$40,804	
Outstanding Balance	$366,347	$777,178	$746,692	$291,063	$595,041	

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$408,330	$563,864	$490,175	$580,700	$580,700	$580,700
Surcharge Fees						
Other (Explain)			$5,916	$5,000	$5,000	$5,000
Operating Expenses						
Personal Services	($123,351)	($140,659)	($157,925)	($153,945)	($158,563)	($213,320)
Chemical, Material & Supplies	($68,817)	($66,687)	($20,300)	($32,800)	($33,784)	($162,798)
Electric & Other Utilities			($32,600)	($37,600)	($38,728)	($13,466)
Other (Explain)			($25,700)	($25,700)	($26,471)	($27,265)
Operating Net Cash	$216,162	$356,518	$259,566	$335,655	$328,154	$168,851
Nonoperating Cash Flow						
Interest Revenue	$1,035	$778	$1,199	$900	$900	$900
Transfers In (Explain)	$930,409	$1,120,487	$491,816			
Fixed Asset Purchases	($922,352)	($999,150)	($583,833)			
Transfers Out (Explain)						
Principal Debt Payments	($117,571)	($121,407)	($261,498)	($152,669)	($157,596)	($299,267)
Interest Debt Payments	($80,914)	($77,079)	($138,202)	($86,621)	($81,693)	($295,456)
Other (Explain)						
Nonoperating Net Cash	($189,393)	($76,371)	($490,518)	($238,390)	($238,389)	($593,823)
Increase (Decrease) Cash	$26,769	$280,147	($230,952)	$97,265	$89,765	($424,972)
Beginning Cash Balance	$630,313	$657,082	$937,229	$706,277	$803,542	$893,307
Ending Cash Balance	$657,082	$937,229	$706,277	$803,542	$893,307	$468,335
Restricted Balance	0	$198,486	$432,907	$272,497	$272,496	$627,930
Unrestricted Balance	$657,082	$738,743	$273,370	$531,045	$620,811	($159,595)

Additional Comments (Explanations)

2014 - Transfers in is debt proceeds, transfer from other funds and other misc
2015 - Numbers are from internally prepared financial statements and includes payment on CW-07 and transfer in from sales tax to make the loan payments.
2016 - Numbers are from 2016 budget. No provision is made for payments on CW-07 since the loan is paid from sales tax revenue.
2017 & 2018 - Assumes no increase in revenue and a 3% increase in expenses.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$36.38	$43.64	1,125	3,398 gallons
Business	$36.38	$43.64	209	8,485 gallons
Other:				
Other:				

Are fees based on usage or flat rate? usage

When is proposed fee scheduled to take effect? February 2016 (for January billing)

When did the current fee take effect? January 2013

What was the fee prior to the current rate? $33.38

Storm Sewer Projects Only: Does applicant have a separate storm water fee? n/a

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
H2Ose It	Car Wash	7%
Orchard Hills	Assisted Living/Nursing Home	5%

Appendix A

Cost and Effectiveness Certification, Certification of Needs Categories, and Certification Regarding Debarment, Suspension and Other Responsibility Matters

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	City of Dell Rapids

Project Name:	2016 10th Street and Highway 115 Improvements Project

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: _____

Printed Name: Scott Fiegen

Title: Mayor, City of Dell Rapids

Date: 12-30-15

Project Engineer

Signature: _____

Printed Name: Lance Mayer

License #: 8028

Date: 12/18/15

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	$234,000
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	$234,000

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	$119,000
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	$450,000
	TOTAL:	$1,037,000

Scott Fiegen, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-30-15

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Scott Fiegen, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12-30-15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION NO. 2015-19

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Dell Rapids (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to 2016 10th Street and Highway 115 Improvements Project (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $1,037,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Dell Rapids, South Dakota, this 7th day of December 2015.

APPROVED:

Mayor
City of Dell Rapids

(Seal)

Attest:
City Finance Officer

CORRECTED ORDINANCE 763

AN ORDINANCE OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, PROVIDING THAT THE REVISED ORDINANCES OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, BE AMENDED BY REVISING APPENDIX B OF THE UTILITIES RATE SCHEDULE; PROVIDING AN INCREASE TO SEWER RATES, EFFECTIVE JANUARY 1, 2013 FOR THE FEBRUARY, 2013 BILLING

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA:

Section 1. That Section (a) of Appendix B of the Utilities Rate Schedule of the Revised Ordinances of the City of Dell Rapids, South Dakota, is hereby amended to read as follows:

"(a) Effective January 1, 2013 for the February 2013 sewer billing, residential and commercial users are considered to be one (1) class of user and are assessed the following rates on a per user or per location basis:

(1) Fifteen dollars and twenty eight cents ($15.28) minimum monthly charge and four dollars and twenty two cents ($4.22) per each one thousand (1,000) gallons of water or part thereof metered to the location per month. However, the sewer charge for residential users for the June 1, July 1, August 1, September 1, October 1 and November 1 sewer billings shall be computed based upon the average sewer usage for the preceding December 1, January 1, February 1, March 1, April 1 and May 1 sewer billings."

Adopted this 17th day of September, 2012.

FOR THE GOVERNING BODY OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA

By _____
Scott Fiegen, Mayor

ATTEST:

By _____
LeAnn Kerzman, Finance Officer

First Reading: August 6, 2012
Second Reading and Adoption: September 17, 2012
Publication:
Effective Date:

ORDINANCE 827

AN ORDINANCE OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, PROVIDING THAT THE REVISED ORDINANCES OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA, BE AMENDED BY REVISING APPENDIX B OF THE UTILITIES RATE SCHEDULE; PROVIDING AN INCREASE TO SEWER RATES, EFFECTIVE JANUARY 21, 2015 FOR THE FEBRUARY, 2016 BILLING

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA:

Section 1. That Section (a) of Appendix B of the Utilities Rate Schedule of the Revised Ordinances of the City of Dell Rapids, South Dakota, is hereby amended to read as follows:

"(a) Effective January 21, 2016 for the February 2016 sewer billing, residential and commercial users are considered to be one (1) class of user and are assessed the following rates on a per user or per location basis:

(1) Eighteen dollars and thirty four cents ($18.34) minimum monthly charge and five dollars and six cents ($5.06) per each one thousand (1,000) gallons of water or part thereof metered to the location per month. However, the sewer charge for residential users for the June 1, July 1, August 1, September 1, October 1 and November 1 sewer billings shall be computed based upon the average sewer usage for the preceding December 1, January 1, February 1, March 1, April 1 and May 1 sewer billings."

Adopted this 21st day of December, 2015.

FOR THE GOVERNING BODY OF THE CITY OF DELL RAPIDS, SOUTH DAKOTA

By _____
Scott Fiegen, Mayor

ATTEST:

By _____
Claire Baartman, Finance Officer

First Reading: December 7, 2015
Second Reading and Adoption: December 21, 2015
Publication:
Effective Date:

CW #2

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$561,737.00	3-31-06	04-15-2027					

References in the shaded area are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: City of Dell Rapids -Clean Water # 2
PO Box 10
Dell Rapids, SD 57022-0010

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
AS TRUSTEE FOR SOUTH DAKOTA DEPARTMENT
OF ENVIRONMENT AND NATURAL RESOURCES
PIERRE, SD 57501

Disbursement Date:
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest ** Paid	Principal Paid	Remaining Balance
1	07-15-2007	9,576.78	4,564.11	5,012.67	556,724.33
2	10-15-2007	9,576.78	4,523.38	5,053.40	551,670.93
2007 TOTALS:		**19,153.56**	**9,087.49**	**10,066.07**	
3	01-15-2008	9,576.78	4,482.33	5,094.45	546,576.48
4	04-15-2008	9,576.78	4,440.93	5,135.85	541,440.63
5	07-15-2008	9,576.78	4,399.21	5,177.57	536,263.06
6	10-15-2008	9,576.78	4,357.14	5,219.64	531,043.42
2008 TOTALS:		**38,307.12**	**17,679.61**	**20,627.51**	
7	01-15-2009	9,576.78	4,314.72	5,262.06	525,781.36
8	04-15-2009 #31868	9,576.78	4,271.98	5,304.80	520,476.56
9	07-15-2009	9,576.78	4,228.87	5,347.91	515,128.65
10	10-15-2009 pd	9,576.78	4,185.42	5,391.36	509,737.29
2009 TOTALS:		**38,307.12**	**17,000.99**	**21,306.13**	
11	01-15-2010 pd	9,576.78	4,141.62	5,435.16	504,302.13
12	04-15-2010 pd	9,576.78	4,097.45	5,479.33	498,822.80
13	07-15-2010 ✓	9,576.78	4,052.94	5,523.84	493,298.96
14	10-15-2010 ✓	9,576.78	4,008.05	5,568.73	487,730.23
2010 TOTALS:		**38,307.12**	**16,300.06**	**22,007.06**	
15	01-15-2011 ✓	9,576.78	3,962.81	5,613.97	482,116.26
16	04-15-2011 ✓	9,576.78	3,917.19	5,659.59	476,456.67
17	07-15-2011 ✓	9,576.78	3,871.21	5,705.57	470,751.10
18	10-15-2011 ✓	9,576.78	3,824.86	5,751.92	464,999.18
2011 TOTALS:		**38,307.12**	**15,576.07**	**22,731.05**	
19	01-15-2012 ✓	9,576.78	3,778.11	5,798.67	459,200.51
20	04-15-2012 ✓	9,576.78	3,731.01	5,845.77	453,354.74
21	07-15-2012 ✓	9,576.78	3,683.50	5,893.28	447,461.46
22	10-15-2012 ✓	9,576.78	3,635.63	5,941.15	441,520.31
2012 TOTALS:		**38,307.12**	**14,828.25**	**23,478.87**	
23	01-15-2013 ✓	9,576.78	3,587.35	5,989.43	435,530.88
24	04-15-2013 ✓	9,576.78	3,538.69	6,038.09	429,492.79
25	07-15-2013 ✓	9,576.78	3,489.63	6,087.15	423,405.64
26	10-15-2013 ✓	9,576.78	3,440.17	6,136.61	417,269.03
2013 TOTALS:		**38,307.12**	**14,055.84**	**24,251.28**	
27	01-15-2014 ✓	9,576.78	3,390.31	6,186.47	411,082.56
28	04-15-2014 ✓	9,576.78	3,340.05	6,236.73	404,845.83
29	07-15-2014 ✓	9,576.78	3,289.37	6,287.41	398,558.42
30	10-15-2014 ✓	9,576.78	3,238.29	6,338.49	392,219.93
2014 TOTALS:		**38,307.12**	**13,258.02**	**25,049.10**	
31	01-15-2015 ✓	9,576.78	3,186.78	6,390.00	385,829.93
32	04-15-2015 ✓	9,576.78	3,134.87	6,441.91	379,388.02
33	07-15-2015 ✓	9,576.78	3,082.53	6,494.25	372,893.77
34	10-15-2015 ✓	9,576.78	3,029.76	6,547.02	366,346.75
2015 TOTALS:		**38,307.12**	**12,433.94**	**25,873.18**	
35	01-15-2016	9,576.78	2,976.57	6,600.21	359,746.54
36	04-15-2016	9,576.78	2,922.94	6,653.84	353,092.70
37	07-15-2016	9,576.78	2,868.88	6,707.90	346,384.80
38	10-15-2016	9,576.78	2,814.37	6,762.41	339,622.39

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2016 TOTALS:		**38,307.12**	**11,582.76**	**26,724.36**	
39	01-15-2017	9,576.78	2,759.44	6,817.34	332,805.05
40	04-15-2017	9,576.78	2,704.04	6,872.74	325,932.31
41	07-15-2017	9,576.78	2,648.20	6,928.58	319,003.73
42	10-15-2017	9,576.78	2,591.90	6,984.88	312,018.85
2017 TOTALS:		**38,307.12**	**10,703.58**	**27,603.54**	
43	01-15-2018	9,576.78	2,535.15	7,041.63	304,977.22
44	04-15-2018	9,576.78	2,477.94	7,098.84	297,878.38
45	07-15-2018	9,576.78	2,420.27	7,156.51	290,721.87
46	10-15-2018	9,576.78	2,362.11	7,214.67	283,507.20
2018 TOTALS:		**38,307.12**	**9,795.47**	**28,511.65**	
47	01-15-2019	9,576.78	2,303.50	7,273.28	276,233.92
48	04-15-2019	9,576.78	2,244.40	7,332.38	268,901.54
49	07-15-2019	9,576.78	2,184.82	7,391.96	261,509.58
50	10-15-2019	9,576.78	2,124.77	7,452.01	254,057.57
2019 TOTALS:		**38,307.12**	**8,857.49**	**29,449.63**	
51	01-15-2020	9,576.78	2,064.22	7,512.56	246,545.01
52	04-15-2020	9,576.78	2,003.17	7,573.61	238,971.40
53	07-15-2020	9,576.78	1,941.65	7,635.13	231,336.27
54	10-15-2020	9,576.78	1,879.60	7,697.18	223,639.09
2020 TOTALS:		**38,307.12**	**7,888.64**	**30,418.48**	
55	01-15-2021	9,576.78	1,817.07	7,759.71	215,879.38
56	04-15-2021	9,576.78	1,754.02	7,822.76	208,056.62
57	07-15-2021	9,576.78	1,690.46	7,886.32	200,170.30
58	10-15-2021	9,576.78	1,626.39	7,950.39	192,219.91
2021 TOTALS:		**38,307.12**	**6,887.94**	**31,419.18**	
59	01-15-2022	9,576.78	1,561.78	8,015.00	184,204.91
60	04-15-2022	9,576.78	1,496.67	8,080.11	176,124.80
61	07-15-2022	9,576.78	1,431.01	8,145.77	167,979.03
62	10-15-2022	9,576.78	1,364.83	8,211.95	159,767.08
2022 TOTALS:		**38,307.12**	**5,854.29**	**32,452.83**	
63	01-15-2023	9,576.78	1,298.11	8,278.67	151,488.41
64	04-15-2023	9,576.78	1,230.84	8,345.94	143,142.47
65	07-15-2023	9,576.78	1,163.03	8,413.75	134,728.72
66	10-15-2023	9,576.78	1,094.68	8,482.10	126,246.62
2023 TOTALS:		**38,307.12**	**4,786.66**	**33,520.46**	
67	01-15-2024	9,576.78	1,025.75	8,551.03	117,695.59
68	04-15-2024	9,576.78	956.28	8,620.50	109,075.09
69	07-15-2024	9,576.78	886.23	8,690.55	100,384.54
70	10-15-2024	9,576.78	815.63	8,761.15	91,623.39
2024 TOTALS:		**38,307.12**	**3,683.89**	**34,623.23**	
71	01-15-2025	9,576.78	744.44	8,832.34	82,791.05
72	04-15-2025	9,576.78	672.67	8,904.11	73,886.94
73	07-15-2025	9,576.78	600.33	8,976.45	64,910.49
74	10-15-2025	9,576.78	527.40	9,049.38	55,861.11
2025 TOTALS:		**38,307.12**	**2,544.84**	**35,762.28**	
75	01-15-2026	9,576.78	453.87	9,122.91	46,738.20
76	04-15-2026	9,576.78	379.75	9,197.03	37,541.17
77	07-15-2026	9,576.78	305.02	9,271.76	28,269.41
78	10-15-2026	9,576.78	229.69	9,347.09	18,922.32
2026 TOTALS:		**38,307.12**	**1,368.33**	**36,938.79**	
79	01-15-2027	9,576.78	153.75	9,423.03	9,499.29
80	04-15-2027	9,576.78	77.49	9,499.29	0.00
2027 TOTALS:		**19,153.56**	**231.24**	**18,922.32**	
TOTALS:		**766,142.40**	**204,405.40**	**561,737.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CW #5 12-17-07

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$1,062,000.00	12-03-2008	01-15-2029					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing "****" has been omitted due to text length limitations.

Borrower: Dell Rapids Clean Water #3

12th St Drainage

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS AS TRUSTEE FOR SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES PIERRE, SD 57501

Disbursement Date: January 15, 2009
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest Paid **	Principal Paid	Remaining Balance
1	04-15-2009 pd #31868	18,105.51	8,628.75	9,476.76	1,052,523.24
2	07-15-2009 pd #32188	18,105.51	8,551.75	9,553.76	1,042,969.48
3	10-15-2009 pd	18,105.51	8,474.12	9,631.39	1,033,338.09
2009 TOTALS:		**54,316.53**	**25,654.62**	**28,661.91**	
4	01-15-2010 pd	18,105.51	8,395.88	9,709.63	1,023,628.46
5	04-15-2010 pd	18,105.51	8,316.98	9,788.53	1,013,839.93
6	07-15-2010	18,105.51	8,237.45	9,868.06	1,003,971.87
7	10-15-2010	18,105.51	8,157.27	9,948.24	994,023.63
2010 TOTALS:		**72,422.04**	**33,107.58**	**39,314.46**	
8	01-15-2011	18,105.51	8,076.44	10,029.07	983,994.56
9	04-15-2011	18,105.51	7,994.96	10,110.55	973,884.01
10	07-15-2011	18,105.51	7,912.80	10,192.71	963,691.30
11	10-15-2011	18,105.51	7,829.99	10,275.52	953,415.78
2011 TOTALS:		**72,422.04**	**31,814.19**	**40,607.85**	
12	01-15-2012	18,105.51	7,746.51	10,359.00	943,056.78
13	04-15-2012	18,105.51	7,662.33	10,443.18	932,613.60
14	07-15-2012	18,105.51	7,577.49	10,528.02	922,085.58
15	10-15-2012	18,105.51	7,491.95	10,613.56	911,472.02
2012 TOTALS:		**72,422.04**	**30,478.28**	**41,943.76**	
16	01-15-2013	18,105.51	7,405.71	10,699.80	900,772.22
17	04-15-2013	18,105.51	7,318.77	10,786.74	889,985.48
18	07-15-2013	18,105.51	7,231.13	10,874.38	879,111.10
19	10-15-2013	18,105.51	7,142.78	10,962.73	868,148.37
2013 TOTALS:		**72,422.04**	**29,098.39**	**43,323.65**	
20	01-15-2014	18,105.51	7,053.70	11,051.81	857,096.56
21	04-15-2014	18,105.51	6,963.91	11,141.60	845,954.96
22	07-15-2014	18,105.51	6,873.39	11,232.12	834,722.84
23	10-15-2014	18,105.51	6,782.12	11,323.39	823,399.45
2014 TOTALS:		**72,422.04**	**27,673.12**	**44,748.92**	
24	01-15-2015	18,105.51	6,690.12	11,415.39	811,984.06
25	04-15-2015	18,105.51	6,597.37	11,508.14	800,475.92
26	07-15-2015	18,105.51	6,503.87	11,601.64	788,874.28
27	10-15-2015	18,105.51	6,409.60	11,695.91	777,178.37
2015 TOTALS:		**72,422.04**	**26,200.96**	**46,221.08**	
28	01-15-2016	18,105.51	6,314.58	11,790.93	765,387.44
29	04-15-2016	18,105.51	6,218.77	11,886.74	753,500.70
30	07-15-2016	18,105.51	6,122.19	11,983.32	741,517.38
31	10-15-2016	18,105.51	6,024.83	12,080.68	729,436.70
2016 TOTALS:		**72,422.04**	**24,680.37**	**47,741.67**	
32	01-15-2017	18,105.51	5,926.68	12,178.83	717,257.87
33	04-15-2017	18,105.51	5,827.72	12,277.79	704,980.08
34	07-15-2017	18,105.51	5,727.96	12,377.55	692,602.53
35	10-15-2017	18,105.51	5,627.39	12,478.12	680,124.41
2017 TOTALS:		**72,422.04**	**23,109.75**	**49,312.29**	
36	01-15-2018	18,105.51	5,526.01	12,579.50	667,544.91
37	04-15-2018	18,105.51	5,423.81	12,681.70	654,863.21
38	07-15-2018	18,105.51	5,320.76	12,784.75	642,078.46
39	10-15-2018	18,105.51	5,216.89	12,888.62	629,189.84

** INTEREST PAID also includes Admin Surcharge amounts.

AMORTIZATION SCHEDULE
(Continued)

2018 TOTALS:		**72,422.04**	**21,487.47**	**50,934.57**	
40	01-15-2019	18,105.51	5,112.17	12,993.34	616,196.50
41	04-15-2019	18,105.51	5,006.59	13,098.92	603,097.58
42	07-15-2019	18,105.51	4,900.17	13,205.34	589,892.24
43	10-15-2019	18,105.51	4,792.87	13,312.64	576,579.60
2019 TOTALS:		**72,422.04**	**19,811.80**	**52,610.24**	
44	01-15-2020	18,105.51	4,684.71	13,420.80	563,158.80
45	04-15-2020	18,105.51	4,575.67	13,529.84	549,628.96
46	07-15-2020	18,105.51	4,465.73	13,639.78	535,989.18
47	10-15-2020	18,105.51	4,354.92	13,750.59	522,238.59
2020 TOTALS:		**72,422.04**	**18,081.03**	**54,341.01**	
48	01-15-2021	18,105.51	4,243.18	13,862.33	508,376.26
49	04-15-2021	18,105.51	4,130.56	13,974.95	494,401.31
50	07-15-2021	18,105.51	4,017.01	14,088.50	480,312.81
51	10-15-2021	18,105.51	3,902.54	14,202.97	466,109.84
2021 TOTALS:		**72,422.04**	**16,293.29**	**56,128.75**	
52	01-15-2022	18,105.51	3,787.15	14,318.36	451,791.48
53	04-15-2022	18,105.51	3,670.80	14,434.71	437,356.77
54	07-15-2022	18,105.51	3,553.53	14,551.98	422,804.79
55	10-15-2022	18,105.51	3,435.29	14,670.22	408,134.57
2022 TOTALS:		**72,422.04**	**14,446.77**	**57,975.27**	
56	01-15-2023	18,105.51	3,316.09	14,789.42	393,345.15
57	04-15-2023	18,105.51	3,195.93	14,909.58	378,435.57
58	07-15-2023	18,105.51	3,074.79	15,030.72	363,404.85
59	10-15-2023	18,105.51	2,952.66	15,152.85	348,252.00
2023 TOTALS:		**72,422.04**	**12,539.47**	**59,882.57**	
60	01-15-2024	18,105.51	2,829.55	15,275.96	332,976.04
61	04-15-2024	18,105.51	2,705.43	15,400.08	317,575.96
62	07-15-2024	18,105.51	2,580.30	15,525.21	302,050.75
63	10-15-2024	18,105.51	2,454.17	15,651.34	286,399.41
2024 TOTALS:		**72,422.04**	**10,569.45**	**61,852.59**	
64	01-15-2025	18,105.51	2,326.99	15,778.52	270,620.89
65	04-15-2025	18,105.51	2,198.80	15,906.71	254,714.18
66	07-15-2025	18,105.51	2,069.55	16,035.96	238,678.22
67	10-15-2025	18,105.51	1,939.26	16,166.25	222,511.97
2025 TOTALS:		**72,422.04**	**8,534.60**	**63,887.44**	
68	01-15-2026	18,105.51	1,807.91	16,297.60	206,214.37
69	04-15-2026	18,105.51	1,675.49	16,430.02	189,784.35
70	07-15-2026	18,105.51	1,542.00	16,563.51	173,220.84
71	10-15-2026	18,105.51	1,407.42	16,698.09	156,522.75
2026 TOTALS:		**72,422.04**	**6,432.82**	**65,989.22**	
72	01-15-2027	18,105.51	1,271.75	16,833.76	139,688.99
73	04-15-2027	18,105.51	1,134.97	16,970.54	122,718.45
74	07-15-2027	18,105.51	997.09	17,108.42	105,610.03
75	10-15-2027	18,105.51	858.08	17,247.43	88,362.60
2027 TOTALS:		**72,422.04**	**4,261.89**	**68,160.15**	
76	01-15-2028	18,105.51	717.94	17,387.57	70,975.03
77	04-15-2028	18,105.51	576.68	17,528.83	53,446.20
78	07-15-2028	18,105.51	434.25	17,671.26	35,774.94
79	10-15-2028	18,105.51	290.67	17,814.84	17,960.10
2028 TOTALS:		**72,422.04**	**2,019.54**	**70,402.50**	
80	01-15-2029	18,105.51	145.41	17,960.10	0.00
2029 TOTALS:		**18,105.51**	**145.41**	**17,960.10**	
TOTALS:		**1,448,440.80**	**386,440.80**	**1,062,000.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CW #4
11-14-08

AMORTIZATION SCHEDULE

✓Terms

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$950,000.00		04-15-2030					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Dell Rapids - Clean Water #4

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
.
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PIERRE, SD

Lift Station

Disbursement Date:
Interest Rate: 3.250

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

604-4325-44200 ** 604-4325-44100

Payment Number	Payment Date	Payment Amount	Interest Paid	Principal Paid	Remaining Balance
1	07-15-2010	16,196.08	7,718.75	8,477.33	941,522.67
2	10-15-2010	16,196.08	7,649.87	8,546.21	932,976.46
2010 TOTALS:		**32,392.16**	**15,368.62**	**17,023.54**	
3	01-15-2011	16,196.08	7,580.43	8,615.65	924,360.81
4	04-15-2011	16,196.08	7,510.43	8,685.65	915,675.16
5	07-15-2011	16,196.08	7,439.86	8,756.22	906,918.94
6	10-15-2011	16,196.08	7,368.72	8,827.36	898,091.58
2011 TOTALS:		**64,784.32**	**29,899.44**	**34,884.88**	
7	01-15-2012	16,196.08	7,296.99	8,899.09	889,192.49
8	04-15-2012	16,196.08	7,224.69	8,971.39	880,221.10
9	07-15-2012	16,196.08	7,151.80	9,044.28	871,176.82
10	10-15-2012	16,196.08	7,078.31	9,117.77	862,059.05
2012 TOTALS:		**64,784.32**	**28,751.79**	**36,032.53**	
11	01-15-2013	16,196.08	7,004.23	9,191.85	852,867.20
12	04-15-2013	16,196.08	6,929.55	9,266.53	843,600.67
13	07-15-2013	16,196.08	6,854.25	9,341.83	834,258.84
14	10-15-2013	16,196.08	6,778.35	9,417.73	824,841.11
2013 TOTALS:		**64,784.32**	**27,566.38**	**37,217.94**	
15	01-15-2014	16,196.08	6,701.84	9,494.24	815,346.87
16	04-15-2014	16,196.08	6,624.69	9,571.39	805,775.48
17	07-15-2014	16,196.08	6,546.93	9,649.15	796,126.33
18	10-15-2014	16,196.08	6,468.52	9,727.56	786,398.77
2014 TOTALS:		**64,784.32**	**26,341.98**	**38,442.34**	
19	01-15-2015	16,196.08	6,389.49	9,806.59	776,592.18
20	04-15-2015	16,196.08	6,309.82	9,886.26	766,705.92
21	07-15-2015	16,196.08	6,229.48	9,966.60	756,739.32
22	10-15-2015	16,196.08	6,148.51	10,047.57	746,691.75
2015 TOTALS:		**64,784.32**	**25,077.30**	**39,707.02**	
23	01-15-2016	16,196.08	6,066.87	10,129.21	736,562.54
24	04-15-2016	16,196.08	5,984.57	10,211.51	726,351.03
25	07-15-2016	16,196.08	5,901.60	10,294.48	716,056.55
26	10-15-2016	16,196.08	5,817.96	10,378.12	705,678.43
2016 TOTALS:		**64,784.32**	**23,771.00**	**41,013.32**	
27	01-15-2017	16,196.08	5,733.64	10,462.44	695,215.99
28	04-15-2017	16,196.08	5,648.63	10,547.45	684,668.54
29	07-15-2017	16,196.08	5,562.93	10,633.15	674,035.39
30	10-15-2017	16,196.08	5,476.54	10,719.54	663,315.85
2017 TOTALS:		**64,784.32**	**22,421.74**	**42,362.58**	
31	01-15-2018	16,196.08	5,389.44	10,806.64	652,509.21
32	04-15-2018	16,196.08	5,301.64	10,894.44	641,614.77
33	07-15-2018	16,196.08	5,213.12	10,982.96	630,631.81
34	10-15-2018	16,196.08	5,123.88	11,072.20	619,559.61
2018 TOTALS:		**64,784.32**	**21,028.08**	**43,756.24**	
35	01-15-2019	16,196.08	5,033.92	11,162.16	608,397.45
36	04-15-2019	16,196.08	4,943.23	11,252.85	597,144.60
37	07-15-2019	16,196.08	4,851.80	11,344.28	585,800.32
38	10-15-2019	16,196.08	4,759.63	11,436.45	574,363.87

** INTEREST PAID also includes Admin Surcharge amounts.

(over)

AMORTIZATION SCHEDULE
(Continued)

2019 TOTALS:		**64,784.32**	**19,588.58**	**45,195.74**	
39	01-15-2020	16,196.08	4,666.70	11,529.38	562,834.49
40	04-15-2020	16,196.08	4,573.03	11,623.05	551,211.44
41	07-15-2020	16,196.08	4,478.60	11,717.48	539,493.96
42	10-15-2020	16,196.08	4,383.39	11,812.69	527,681.27
2020 TOTALS:		**64,784.32**	**18,101.72**	**46,682.60**	
43	01-15-2021	16,196.08	4,287.41	11,908.67	515,772.60
44	04-15-2021	16,196.08	4,190.65	12,005.43	503,767.17
45	07-15-2021	16,196.08	4,093.11	12,102.97	491,664.20
46	10-15-2021	16,196.08	3,994.77	12,201.31	479,462.89
2021 TOTALS:		**64,784.32**	**16,565.94**	**48,218.38**	
47	01-15-2022	16,196.08	3,895.63	12,300.45	467,162.44
48	04-15-2022	16,196.08	3,795.70	12,400.38	454,762.06
49	07-15-2022	16,196.08	3,694.94	12,501.14	442,260.92
50	10-15-2022	16,196.08	3,593.37	12,602.71	429,658.21
2022 TOTALS:		**64,784.32**	**14,979.64**	**49,804.68**	
51	01-15-2023	16,196.08	3,490.97	12,705.11	416,953.10
52	04-15-2023	16,196.08	3,387.75	12,808.33	404,144.77
53	07-15-2023	16,196.08	3,283.67	12,912.41	391,232.36
54	10-15-2023	16,196.08	3,178.77	13,017.31	378,215.05
2023 TOTALS:		**64,784.32**	**13,341.16**	**51,443.16**	
55	01-15-2024	16,196.08	3,072.99	13,123.09	365,091.96
56	04-15-2024	16,196.08	2,966.38	13,229.70	351,862.26
57	07-15-2024	16,196.08	2,858.88	13,337.20	338,525.06
58	10-15-2024	16,196.08	2,750.51	13,445.57	325,079.49
2024 TOTALS:		**64,784.32**	**11,648.76**	**53,135.56**	
59	01-15-2025	16,196.08	2,641.27	13,554.81	311,524.68
60	04-15-2025	16,196.08	2,531.14	13,664.94	297,859.74
61	07-15-2025	16,196.08	2,420.11	13,775.97	284,083.77
62	10-15-2025	16,196.08	2,308.18	13,887.90	270,195.87
2025 TOTALS:		**64,784.32**	**9,900.70**	**54,883.62**	
63	01-15-2026	16,196.08	2,195.35	14,000.73	256,195.14
64	04-15-2026	16,196.08	2,081.58	14,114.50	242,080.64
65	07-15-2026	16,196.08	1,966.91	14,229.17	227,851.47
66	10-15-2026	16,196.08	1,851.29	14,344.79	213,506.68
2026 TOTALS:		**64,784.32**	**8,095.13**	**56,689.19**	
67	01-15-2027	16,196.08	1,734.74	14,461.34	199,045.34
68	04-15-2027	16,196.08	1,617.24	14,578.84	184,466.50
69	07-15-2027	16,196.08	1,498.79	14,697.29	169,769.21
70	10-15-2027	16,196.08	1,379.38	14,816.70	154,952.51
2027 TOTALS:		**64,784.32**	**6,230.15**	**58,554.17**	
71	01-15-2028	16,196.08	1,258.99	14,937.09	140,015.42
72	04-15-2028	16,196.08	1,137.62	15,058.46	124,956.96
73	07-15-2028	16,196.08	1,015.28	15,180.80	109,776.16
74	10-15-2028	16,196.08	891.93	15,304.15	94,472.01
2028 TOTALS:		**64,784.32**	**4,303.82**	**60,480.50**	
75	01-15-2029	16,196.08	767.59	15,428.49	79,043.52
76	04-15-2029	16,196.08	642.22	15,553.86	63,489.66
77	07-15-2029	16,196.08	515.86	15,680.22	47,809.44
78	10-15-2029	16,196.08	388.45	15,807.63	32,001.81
2029 TOTALS:		**64,784.32**	**2,314.12**	**62,470.20**	
79	01-15-2030	16,196.08	260.01	15,936.07	16,065.74
80	04-15-2030	16,196.08	130.34	16,065.74	0.00
2030 TOTALS:		**32,392.16**	**390.35**	**32,001.81**	
TOTALS:		**1,295,686.40**	**345,686.40**	**950,000.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

CW #5

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$344,550.00	4-15-11	10-15-2032					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Dell Rapids - Clean Water 5
Total Advances $742,564.00
Principal Forgiveness $398,014.00
Principal Payments $00.00

15th St - Phase I

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR

PIERRE, SD

604-4325-44200 604-4325-44100

Disbursement Date:
Interest Rate: 3.000

Repayment Schedule: Installment
Calculation Method: 30 /360 U.S. Rule

Payment Number	Payment Date	Payment Amount	Interest ** Paid	Principal Paid	Remaining Balance
1	01-15-2013	5,743.03	2,584.12	3,158.91	341,391.09
2	04-15-2013	5,743.03	2,560.43	3,182.60	338,208.49
3	07-15-2013	5,743.03	2,536.57	3,206.46	335,002.03
4	10-15-2013	5,743.03	2,512.51	3,230.52	331,771.51
2013 TOTALS:		**22,972.12**	**10,193.63**	**12,778.49**	
5	01-15-2014	5,743.03	2,488.29	3,254.74	328,516.77
6	04-15-2014	5,743.03	2,463.87	3,279.16	325,237.61
7	07-15-2014	5,743.03	2,439.29	3,303.74	321,933.87
8	10-15-2014	5,743.03	2,414.50	3,328.53	318,605.34
2014 TOTALS:		**22,972.12**	**9,805.95**	**13,166.17**	
9	01-15-2015	5,743.03	2,389.54	3,353.49	315,251.85
10	04-15-2015	5,743.03	2,364.39	3,378.64	311,873.21
11	07-15-2015	5,743.03	2,339.05	3,403.98	308,469.23
12	10-15-2015	5,743.03	2,313.52	3,429.51	305,039.72
2015 TOTALS:		**22,972.12**	**9,406.50**	**13,565.62**	
13	01-15-2016	5,743.03	2,287.80	3,455.23	301,584.49
14	04-15-2016	5,743.03	2,261.88	3,481.15	298,103.34
15	07-15-2016	5,743.03	2,235.77	3,507.26	294,596.08
16	10-15-2016	5,743.03	2,209.47	3,533.56	291,062.52
2016 TOTALS:		**22,972.12**	**8,994.92**	**13,977.20**	
17	01-15-2017	5,743.03	2,182.97	3,560.06	287,502.46
18	04-15-2017	5,743.03	2,156.27	3,586.76	283,915.70
19	07-15-2017	5,743.03	2,129.37	3,613.66	280,302.04
20	10-15-2017	5,743.03	2,102.27	3,640.76	276,661.28
2017 TOTALS:		**22,972.12**	**8,570.88**	**14,401.24**	
21	01-15-2018	5,743.03	2,074.95	3,668.08	272,993.20
22	04-15-2018	5,743.03	2,047.45	3,695.58	269,297.62
23	07-15-2018	5,743.03	2,019.74	3,723.29	265,574.33
24	10-15-2018	5,743.03	1,991.80	3,751.23	261,823.10
2018 TOTALS:		**22,972.12**	**8,133.94**	**14,838.18**	
25	01-15-2019	5,743.03	1,963.68	3,779.35	258,043.75
26	04-15-2019	5,743.03	1,935.32	3,807.71	254,236.04
27	07-15-2019	5,743.03	1,906.78	3,836.25	250,399.79
28	10-15-2019	5,743.03	1,877.99	3,865.04	246,534.75
2019 TOTALS:		**22,972.12**	**7,683.77**	**15,288.35**	
29	01-15-2020	5,743.03	1,849.01	3,894.02	242,640.73
30	04-15-2020	5,743.03	1,819.81	3,923.22	238,717.51
31	07-15-2020	5,743.03	1,790.38	3,952.65	234,764.86
32	10-15-2020	5,743.03	1,760.74	3,982.29	230,782.57
2020 TOTALS:		**22,972.12**	**7,219.94**	**15,752.18**	
33	01-15-2021	5,743.03	1,730.87	4,012.16	226,770.41
34	04-15-2021	5,743.03	1,700.77	4,042.26	222,728.15
35	07-15-2021	5,743.03	1,670.47	4,072.56	218,655.59
36	10-15-2021	5,743.03	1,639.91	4,103.12	214,552.47
2021 TOTALS:		**22,972.12**	**6,742.02**	**16,230.10**	
37	01-15-2022	5,743.03	1,609.15	4,133.88	210,418.59
38	04-15-2022	5,743.03	1,578.14	4,164.89	206,253.70

** INTEREST PAID also includes Admin Surcharge amts

AMORTIZATION SCHEDULE
(Continued)

39	07-15-2022	5,743.03	1,546.90	4,196.13	202,057.57
40	10-15-2022	5,743.03	1,515.43	4,227.60	197,829.97
2022 TOTALS:		**22,972.12**	**6,249.62**	**16,722.50**	
41	01-15-2023	5,743.03	1,483.72	4,259.31	193,570.66
42	04-15-2023	5,743.03	1,451.78	4,291.25	189,279.41
43	07-15-2023	5,743.03	1,419.60	4,323.43	184,955.98
44	10-15-2023	5,743.03	1,387.17	4,355.86	180,600.12
2023 TOTALS:		**22,972.12**	**5,742.27**	**17,229.85**	
45	01-15-2024	5,743.03	1,354.50	4,388.53	176,211.59
46	04-15-2024	5,743.03	1,321.59	4,421.44	171,790.15
47	07-15-2024	5,743.03	1,288.42	4,454.61	167,335.54
48	10-15-2024	5,743.03	1,255.02	4,488.01	162,847.53
2024 TOTALS:		**22,972.12**	**5,219.53**	**17,752.59**	
49	01-15-2025	5,743.03	1,221.36	4,521.67	158,325.86
50	04-15-2025	5,743.03	1,187.44	4,555.59	153,770.27
51	07-15-2025	5,743.03	1,153.28	4,589.75	149,180.52
52	10-15-2025	5,743.03	1,118.85	4,624.18	144,556.34
2025 TOTALS:		**22,972.12**	**4,680.93**	**18,291.19**	
53	01-15-2026	5,743.03	1,084.17	4,658.86	139,897.48
54	04-15-2026	5,743.03	1,049.24	4,693.79	135,203.69
55	07-15-2026	5,743.03	1,014.02	4,729.01	130,474.68
56	10-15-2026	5,743.03	978.56	4,764.47	125,710.21
2026 TOTALS:		**22,972.12**	**4,125.99**	**18,846.13**	
57	01-15-2027	5,743.03	942.83	4,800.20	120,910.01
58	04-15-2027	5,743.03	906.83	4,836.20	116,073.81
59	07-15-2027	5,743.03	870.55	4,872.48	111,201.33
60	10-15-2027	5,743.03	834.01	4,909.02	106,292.31
2027 TOTALS:		**22,972.12**	**3,554.22**	**19,417.90**	
61	01-15-2028	5,743.03	797.19	4,945.84	101,346.47
62	04-15-2028	5,743.03	760.10	4,982.93	96,363.54
63	07-15-2028	5,743.03	722.73	5,020.30	91,343.24
64	10-15-2028	5,743.03	685.07	5,057.96	86,285.28
2028 TOTALS:		**22,972.12**	**2,965.09**	**20,007.03**	
65	01-15-2029	5,743.03	647.14	5,095.89	81,189.39
66	04-15-2029	5,743.03	608.92	5,134.11	76,055.28
67	07-15-2029	5,743.03	570.42	5,172.61	70,882.67
68	10-15-2029	5,743.03	531.62	5,211.41	65,671.26
2029 TOTALS:		**22,972.12**	**2,358.10**	**20,614.02**	
69	01-15-2030	5,743.03	492.53	5,250.50	60,420.76
70	04-15-2030	5,743.03	453.16	5,289.87	55,130.89
71	07-15-2030	5,743.03	413.48	5,329.55	49,801.34
72	10-15-2030	5,743.03	373.51	5,369.52	44,431.82
2030 TOTALS:		**22,972.12**	**1,732.68**	**21,239.44**	
73	01-15-2031	5,743.03	333.24	5,409.79	39,022.03
74	04-15-2031	5,743.03	292.66	5,450.37	33,571.66
75	07-15-2031	5,743.03	251.79	5,491.24	28,080.42
76	10-15-2031	5,743.03	210.60	5,532.43	22,547.99
2031 TOTALS:		**22,972.12**	**1,088.29**	**21,883.83**	
77	01-15-2032	5,743.03	169.11	5,573.92	16,974.07
78	04-15-2032	5,743.03	127.31	5,615.72	11,358.35
79	07-15-2032	5,743.03	85.18	5,657.85	5,700.50
80	10-15-2032	5,743.03	42.53	5,700.50	0.00
2032 TOTALS:		**22,972.12**	**424.13**	**22,547.99**	
TOTALS:		**459,442.40**	**114,892.40**	**344,550.00**	

NOTICE: This is an estimated loan amortization schedule. Actual amounts may vary if payments are made on different dates or in different amounts.

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CWS-06

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$612,000.00	2/5/13	01-15-2035					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item. Any item above containing "****" has been omitted due to text length limitations.

Borrower: Dell Rapid - Clean Water 6

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS /SD DENR
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PIERRE, SD

Principal Advance:	$612,000.00
Amount Financed:	$612,000.00
Finance Charge:	$204,075.72
APR:	3.0000%
Total Principal:	$612,000.00
Total Interest:	$204,075.72
Total of Payments:	$816,075.72

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Apr 15, 2015	Quarterly	79	$10,200.96
Regular Payment	Jan 15, 2035	Quarterly	1	$10,199.88

* Interest Payment also includes Admin Surcharge amounts

CW #6

604-4325-4

604-4325-4

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
Jan 15, 2015	Beginning Balance					612,000.00
Apr 15, 2015	Regular Payment	10,200.96	10,200.96	5,610.95	4,590.01	606,389.05
Jul 15, 2015	Regular Payment	10,200.96	10,200.96	5,653.04	4,547.92	600,736.01
Oct 15, 2015	Regular Payment	10,200.96	10,200.96	5,695.43	4,505.53	595,040.58
2015 Totals		**30,602.88**	**30,602.88**	**16,959.42**	**13,643.46**	
Jan 15, 2016	Regular Payment	10,200.96	10,200.96	5,738.15	4,462.81	589,302.43
Apr 15, 2016	Regular Payment	10,200.96	10,200.96	5,781.19	4,419.77	583,521.24
Jul 15, 2016	Regular Payment	10,200.96	10,200.96	5,824.55	4,376.41	577,696.69
Oct 15, 2016	Regular Payment	10,200.96	10,200.96	5,868.23	4,332.73	571,828.46
2016 Totals		**40,803.84**	**40,803.84**	**23,212.12**	**17,591.72**	
Jan 15, 2017	Regular Payment	10,200.96	10,200.96	5,912.24	4,288.72	565,916.22
Apr 15, 2017	Regular Payment	10,200.96	10,200.96	5,956.58	4,244.38	559,959.64
Jul 15, 2017	Regular Payment	10,200.96	10,200.96	6,001.26	4,199.70	553,958.38
Oct 15, 2017	Regular Payment	10,200.96	10,200.96	6,046.27	4,154.69	547,912.11
2017 Totals		**40,803.84**	**40,803.84**	**23,916.35**	**16,887.49**	
Jan 15, 2018	Regular Payment	10,200.96	10,200.96	6,091.61	4,109.35	541,820.50
Apr 15, 2018	Regular Payment	10,200.96	10,200.96	6,137.30	4,063.66	535,683.20
Jul 15, 2018	Regular Payment	10,200.96	10,200.96	6,183.33	4,017.63	529,499.87
Oct 15, 2018	Regular Payment	10,200.96	10,200.96	6,229.71	3,971.25	523,270.16
2018 Totals		**40,803.84**	**40,803.84**	**24,641.95**	**16,161.89**	
Jan 15, 2019	Regular Payment	10,200.96	10,200.96	6,276.43	3,924.53	516,993.73
Apr 15, 2019	Regular Payment	10,200.96	10,200.96	6,323.50	3,877.46	510,670.23
Jul 15, 2019	Regular Payment	10,200.96	10,200.96	6,370.93	3,830.03	504,299.30
Oct 15, 2019	Regular Payment	10,200.96	10,200.96	6,418.71	3,782.25	497,880.59
2019 Totals		**40,803.84**	**40,803.84**	**25,389.57**	**15,414.27**	
Jan 15, 2020	Regular Payment	10,200.96	10,200.96	6,466.85	3,734.11	491,413.74
Apr 15, 2020	Regular Payment	10,200.96	10,200.96	6,515.35	3,685.61	484,898.39
Jul 15, 2020	Regular Payment	10,200.96	10,200.96	6,564.22	3,636.74	478,334.17
Oct 15, 2020	Regular Payment	10,200.96	10,200.96	6,613.45	3,587.51	471,720.72
2020 Totals		**40,803.84**	**40,803.84**	**26,159.87**	**14,643.97**	
Jan 15, 2021	Regular Payment	10,200.96	10,200.96	6,663.05	3,537.91	465,057.67
Apr 15, 2021	Regular Payment	10,200.96	10,200.96	6,713.02	3,487.94	458,344.65
Jul 15, 2021	Regular Payment	10,200.96	10,200.96	6,763.37	3,437.59	451,581.28
Oct 15, 2021	Regular Payment	10,200.96	10,200.96	6,814.10	3,386.86	444,767.18
2021 Totals		**40,803.84**	**40,803.84**	**26,953.54**	**13,850.30**	
Jan 15, 2022	Regular Payment	10,200.96	10,200.96	6,865.20	3,335.76	437,901.98
Apr 15, 2022	Regular Payment	10,200.96	10,200.96	6,916.69	3,284.27	430,985.29
Jul 15, 2022	Regular Payment	10,200.96	10,200.96	6,968.57	3,232.39	424,016.72
Oct 15, 2022	Regular Payment	10,200.96	10,200.96	7,020.83	3,180.13	416,995.89
2022 Totals		**40,803.84**	**40,803.84**	**27,771.29**	**13,032.55**	
Jan 15, 2023	Regular Payment	10,200.96	10,200.96	7,073.49	3,127.47	409,922.40

Apr 15, 2023	Regular Payment	10,200.96	10,200.96	7,126.54	3,074.42	402,795.86
Jul 15, 2023	Regular Payment	10,200.96	10,200.96	7,179.99	3,020.97	395,615.87
Oct 15, 2023	Regular Payment	10,200.96	10,200.96	7,233.84	2,967.12	388,382.03
2023 Totals		**40,803.84**	**40,803.84**	**28,613.86**	**12,189.98**	
Jan 15, 2024	Regular Payment	10,200.96	10,200.96	7,288.09	2,912.87	381,093.94
Apr 15, 2024	Regular Payment	10,200.96	10,200.96	7,342.75	2,858.21	373,751.19
Jul 15, 2024	Regular Payment	10,200.96	10,200.96	7,397.82	2,803.14	366,353.37
Oct 15, 2024	Regular Payment	10,200.96	10,200.96	7,453.30	2,747.66	358,900.07
2024 Totals		**40,803.84**	**40,803.84**	**29,481.96**	**11,321.88**	
Jan 15, 2025	Regular Payment	10,200.96	10,200.96	7,509.20	2,691.76	351,390.87
Apr 15, 2025	Regular Payment	10,200.96	10,200.96	7,565.52	2,635.44	343,825.35
Jul 15, 2025	Regular Payment	10,200.96	10,200.96	7,622.26	2,578.70	336,203.09
Oct 15, 2025	Regular Payment	10,200.96	10,200.96	7,679.43	2,521.53	328,523.66
2025 Totals		**40,803.84**	**40,803.84**	**30,376.41**	**10,427.43**	
Jan 15, 2026	Regular Payment	10,200.96	10,200.96	7,737.03	2,463.93	320,786.63
Apr 15, 2026	Regular Payment	10,200.96	10,200.96	7,795.06	2,405.90	312,991.57
Jul 15, 2026	Regular Payment	10,200.96	10,200.96	7,853.52	2,347.44	305,138.05
Oct 15, 2026	Regular Payment	10,200.96	10,200.96	7,912.42	2,288.54	297,225.63
2026 Totals		**40,803.84**	**40,803.84**	**31,298.03**	**9,505.81**	
Jan 15, 2027	Regular Payment	10,200.96	10,200.96	7,971.76	2,229.20	289,253.87
Apr 15, 2027	Regular Payment	10,200.96	10,200.96	8,031.55	2,169.41	281,222.32
Jul 15, 2027	Regular Payment	10,200.96	10,200.96	8,091.79	2,109.17	273,130.53
Oct 15, 2027	Regular Payment	10,200.96	10,200.96	8,152.48	2,048.48	264,978.05
2027 Totals		**40,803.84**	**40,803.84**	**32,247.58**	**8,556.26**	
Jan 15, 2028	Regular Payment	10,200.96	10,200.96	8,213.62	1,987.34	256,764.43
Apr 15, 2028	Regular Payment	10,200.96	10,200.96	8,275.22	1,925.74	248,489.21
Jul 15, 2028	Regular Payment	10,200.96	10,200.96	8,337.29	1,863.67	240,151.92
Oct 15, 2028	Regular Payment	10,200.96	10,200.96	8,399.82	1,801.14	231,752.10
2028 Totals		**40,803.84**	**40,803.84**	**33,225.95**	**7,577.89**	
Jan 15, 2029	Regular Payment	10,200.96	10,200.96	8,462.81	1,738.15	223,289.29
Apr 15, 2029	Regular Payment	10,200.96	10,200.96	8,526.29	1,674.67	214,763.00
Jul 15, 2029	Regular Payment	10,200.96	10,200.96	8,590.23	1,610.73	206,172.77
Oct 15, 2029	Regular Payment	10,200.96	10,200.96	8,654.66	1,546.30	197,518.11
2029 Totals		**40,803.84**	**40,803.84**	**34,233.99**	**6,569.85**	
Jan 15, 2030	Regular Payment	10,200.96	10,200.96	8,719.57	1,481.39	188,798.54
Apr 15, 2030	Regular Payment	10,200.96	10,200.96	8,784.97	1,415.99	180,013.57
Jul 15, 2030	Regular Payment	10,200.96	10,200.96	8,850.85	1,350.11	171,162.72
Oct 15, 2030	Regular Payment	10,200.96	10,200.96	8,917.23	1,283.73	162,245.49
2030 Totals		**40,803.84**	**40,803.84**	**35,272.62**	**5,531.22**	
Jan 15, 2031	Regular Payment	10,200.96	10,200.96	8,984.11	1,216.85	153,261.38
Apr 15, 2031	Regular Payment	10,200.96	10,200.96	9,051.49	1,149.47	144,209.89
Jul 15, 2031	Regular Payment	10,200.96	10,200.96	9,119.38	1,081.58	135,090.51

Oct 15, 2031	Regular Payment	10,200.96	10,200.96	9,187.78	1,013.18	125,902.73
2031 Totals		**40,803.84**	**40,803.84**	**36,342.76**	**4,461.08**	
Jan 15, 2032	Regular Payment	10,200.96	10,200.96	9,256.68	944.28	116,646.05
Apr 15, 2032	Regular Payment	10,200.96	10,200.96	9,326.11	874.85	107,319.94
Jul 15, 2032	Regular Payment	10,200.96	10,200.96	9,396.06	804.90	97,923.88
Oct 15, 2032	Regular Payment	10,200.96	10,200.96	9,466.53	734.43	88,457.35
2032 Totals		**40,803.84**	**40,803.84**	**37,445.38**	**3,358.46**	
Jan 15, 2033	Regular Payment	10,200.96	10,200.96	9,537.52	663.44	78,919.83
Apr 15, 2033	Regular Payment	10,200.96	10,200.96	9,609.06	591.90	69,310.77
Jul 15, 2033	Regular Payment	10,200.96	10,200.96	9,681.12	519.84	59,629.65
Oct 15, 2033	Regular Payment	10,200.96	10,200.96	9,753.73	447.23	49,875.92
2033 Totals		**40,803.84**	**40,803.84**	**38,581.43**	**2,222.41**	
Jan 15, 2034	Regular Payment	10,200.96	10,200.96	9,826.89	374.07	40,049.03
Apr 15, 2034	Regular Payment	10,200.96	10,200.96	9,900.59	300.37	30,148.44
Jul 15, 2034	Regular Payment	10,200.96	10,200.96	9,974.84	226.12	20,173.60
Oct 15, 2034	Regular Payment	10,200.96	10,200.96	10,049.65	151.31	10,123.95
2034 Totals		**40,803.84**	**40,803.84**	**39,751.97**	**1,051.87**	
Jan 15, 2035	Regular Payment	10,199.88	10,199.88	10,123.95	75.93	
2035 Totals		**10,199.88**	**10,199.88**	**10,123.95**	**75.93**	
Grand Total		**816,075.72**	**816,075.72**	**612,000.00**	**204,075.72**	

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Primary Government		
	Governmental Activities	Business-Type Activities	Total
ASSETS:			
Cash and Cash Equivalents	$ 3,020,308	$ 2,272,095	$ 5,292,403
Receivables	303,231	347,501	650,732
Restricted Assets:			
Deposits	40,625		40,625
Capital Assets:			
Land and Construction in Progress	2,339,693	1,060,135	3,399,828
Other Capital Assets, Net of Depreciation	6,962,495	7,961,736	14,924,231
TOTAL ASSETS	$ 12,666,352	$ 11,641,467	$ 24,307,819
LIABILITIES:			
Accounts Payable	$ 201,750	$ 248,090	$ 449,840
Other Current Liabilities	24,331	86,627	110,958
Noncurrent Liabilities:			
Due Within One Year	-	240,097	240,097
Due in More than One Year	19,544	5,429,068	5,448,612
TOTAL LIABILITIES	245,625	6,003,882	6,249,507
NET POSITION:			
Net Investment in Capital Assets	9,302,188	3,390,622	12,692,810
Restricted for:			
Library Building	203,582		203,582
Library Fines	1,498		1,498
City Promotion	190,311		190,311
Insurance Cumulative Reserve	40,625		40,625
Unrestricted	2,682,523	2,246,963	4,929,486
TOTAL NET POSITION	12,420,727	5,637,585	18,058,312
TOTAL LIABILITIES AND NET POSITION	$ 12,666,352	$ 11,641,467	$ 24,307,819

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2014

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Governmental Activities	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Business-Type Activities	Net (Expense) Revenue and Changes in Net Assets, Primary Government: Total
Primary Government:							
Governmental Activities:							
General Government	$ 371,156	$ 3,690	$ ~~62,400~~ 24,400	$ -	$ (305,066)	$ -	$ (305,066)
Public Safety	368,810	32,113			(336,697)		(336,697)
Public Works	656,748	26,730	83,917	253	(545,848)		(545,848)
Health and Welfare	48,594				(48,594)		(48,594)
Culture and Recreation	376,636	32,869	38,000	50,986	(292,781)		(292,781)
Conservation and Development	253,732				(253,732)		(253,732)
Total Governmental Activities	2,075,676	95,402	146,317	51,239	(1,782,718)	-	(1,782,718)
Business-type Activities:							
Water	535,153	566,586		47,619		79,052	79,052
Wastewater	475,230	537,595	22,012			84,377	84,377
Liquor	958,115	1,059,498				101,383	101,383
Total Business-type Activities:	1,968,498	2,163,679	22,012	47,619	-	264,812	264,812
TOTAL PRIMARY GOVERNMENT	$ 4,044,174	$ 2,259,081	$ 168,329	$ 98,858	(1,782,718)	264,812	(1,517,906)
General Revenues:							
Taxes:							
Property Taxes					962,500		962,500
Sales Tax					987,496		987,496
State Shared Revenues					45,824		45,824
Unrestricted Investment Earnings					4,569	2,857	7,426
Miscellaneous Revenue					175,421	102,856	278,277
Transfers					3,520	(3,520)	-
Total General Revenues and Transfers					2,179,330	102,193	2,281,523
Change in Net Position					396,612	367,005	763,617
Net Position-Beginning					12,024,115	5,270,580	17,294,695
NET POSITION - ENDING					$ 12,420,727	$ 5,637,585	$ 18,058,312

The notes to the financial statements are an integral part of this statement.

WORKING DRAFT
For Discussion Purposes

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	General Fund	Library Building Fund	Nonmajor Funds	Governmental Funds
ASSETS:				
Cash and Cash Equivalents	$ 1,692,266	$ 605,695	$ 71,422	$ 2,369,383
Taxes Receivable - Delinquent	13,981			13,981
Accounts Receivable, Net	16,439			16,439
Special Assessments Receivable - Current	3,611			3,611
Special Assessments Receivable - Delinquent	2,474			2,474
Special Assessments Receivable - Deferred	3,770			3,770
Interest Receivable - Special Assessments	460			460
Notes Receivable			238,600	238,600
Deposits	40,625			40,625
Due from Library Building Fund	258,120			258,120
Due from State Government	23,509		387	23,896
TOTAL ASSETS	$ 2,055,255	$ 605,695	$ 310,409	$ 2,971,359
LIABILITIES AND FUND BALANCES:				
Liabilities:				
Accounts Payable	$ 57,757	$ 143,993	$ -	$ 201,750
Due to General Fund		258,120		258,120
Accrued Wages Payable	22,037			22,037
Accrued Taxes Payable	2,294			2,294
TOTAL LIABILITIES	82,088	402,113	--	484,201
DEFERRED INFLOWS OF RESOURCES:				
Unavailable Revenue - Property Taxes	13,981			13,981
Unavailable Revenue - Special Assessments	10,315			10,315
TOTAL DEFERRED INFLOWS OF RESOURCES	24,296	-	-	24,296
Fund Balances:				
Nonspendable				
Deposits	40,625		—	40,625
Restricted				
City Promotion			190,311	190,311
Library Fines			1,498	1,498
Library Building		203,582		203,582
Assigned for City Promotion			118,600	118,600
Unassigned	1,908,246			1,908,246
TOTAL FUND BALANCES	1,948,871	203,582	310,409	2,462,862
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 2,055,255	$ 605,695	$ 310,409	$ 2,971,359

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE
SHEET TO THE STATEMENT OF NET POSITION
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

Total Fund Balances - Governmental Funds			$ 2,462,862
Amounts reported for governmental activities in the statement of net assets are different because:			
Capital assets used in governmental activities are not current financial resources and therefore are not reported in the funds.			8,963,618
Assets such as taxes receivable and special assessment receivables are not available to pay for current period expenditures and therefore are deferred in the funds.			
Property Taxes	$	13,981	
Special Assessments		10,315	
			24,296
Long-term liabilities, including bonds payable and accrued leave payable are not due and payable in the current period and therefore are not reported in the funds.			
Accrued Leave	$	19,544	
Total long-term liabilities			(19,544)
Internal service funds are used by management to charge the cost of activities to individual funds. The assets and liabilities of internal service funds are included in governmental activities in the statement of net position.			
			989,495
Net Position - Governmental Activities			$ 12,420,727

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	General Fund	Library Building Fund	Nonmajor Funds	Governmental Funds
REVENUES:				
Taxes:				
General Property Taxes	$ 957,206	$ -	$ -	$ 957,206
General Sales and Use Taxes	937,431		50,065	987,496
Amusement Taxes	396			396
Penalties and Interest on Delinquent Taxes	731			731
Licenses and Permits	29,505			29,505
Intergovernmental Revenue	192,141			192,141
Charges for Goods and Services	60,734			60,734
Fines and Forfeits	2,914		2,250	5,164
Special Assessments	5,263		7,001	12,264
Investment Earnings	3,345	404	93	3,842
Contributions from Private Sources	35	49,853	1,098	50,986
Miscellaneous Revenue	36,490		35	36,525
TOTAL REVENUE	2,226,191	50,257	60,542	2,336,990
EXPENDITURES:				
Current:				
General Government	354,990			354,990
Public Safety	338,716			338,716
Public Works	431,102			431,102
Health and Welfare	48,594			48,594
Culture and Recreation	278,978	6,641	4,489	290,108
Conservation and Development	214,996		38,736	253,732
Capital Outlay	146,745	1,144,811		1,291,556
TOTAL EXPENDITURES	1,814,121	1,151,452	43,225	3,008,798
Excess of Revenue Over (Under) Expenditures	412,070	(1,101,195)	17,317	(671,808)
Other Financing Sources:				
Sale of Municipal Property			16	16
Transfer In	116,331	847,000		963,331
Transfer Out	(942,000)		(17,811)	(959,811)
Compensation for Losses	6,780			6,780
TOTAL OTHER FINANCING SOURCES (USES)	(818,889)	847,000	(17,795)	10,316
Net Changes in Fund Balance	(406,819)	(254,195)	(478)	(661,492)
Fund Balance - Beginning	2,355,690	457,777	310,887	3,124,354
FUND BALANCE - ENDING	$ 1,948,871	$ 203,582	$ 310,409	$ 2,462,862

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES
IN FUND BALANCES TO THE STATEMENT OF ACTIVITIES
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

Net Change in Fund Balances - Total Governmental Funds	$ (661,492)
Amounts reported for governmental activities in the statement of activities are different because:	
This amount represents capital asset purchases which are reported as expenditures on the fund financial statements but increase assets on the government wide statements.	1,291,556
This amount represents the current year depreciation expense reported in the statement of activities which is not reported on the fund financial statements because it does not require the use of current financial resources.	(299,618)
The fund financial statement governmental fund property tax accruals differ from the government wide statement property tax accruals in that the fund financial statements require the amounts to be "available".	4,167
Governmental funds report special assessments as revenue when "available", but the statement of activities includes the full amount of special assessments as revenue upon completion of the project at the point when an enforceable legal claim arises.	(12,011)
Governmental funds recognize expenditures for amounts of compensated absences actually paid to employees with current financial resources during the fiscal year. Amounts of compensated absences earned by employees are not recognized in the funds. In the statement of activities, expenses for these benefits are recognized when the employees earn leave credits.	3,347
Internal service funds are used by management to charge the cost of certain activities to individual funds. The net revenue (expense) of the internal service funds is reported with governmental activities.	70,663
Change in Net Assets of Governmental Activities	$ 396,612

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
PROPRIETARY FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Enterprise Funds				Internal Service Fund
	Water Fund	Wastewater Fund	Liquor Fund	Totals	
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	$ 1,151,623	$ 937,229	$ 183,243	$ 2,272,095	$ 650,925
Accounts Receivable, Net	42,120	46,770	107,780	196,670	
Due from Other Government		150,149		150,149	
Interest Receivable	405	277		682	
Total Current Assets	1,194,148	1,134,425	291,023	2,619,596	650,925
Noncurrent Assets:					
Capital Assets:					
Land	45,128	37,029	3,000	85,157	
Buildings	2,625,463	3,780,845	154,977	6,561,285	
Improvements Other than Buildings	1,715,342	2,111,830		3,827,172	
Machinery and Equipment	546,197	59,185	58,571	663,953	846,498
Construction Work in Progress	-	974,978		974,978	
Less: Accumulated Depreciation	(1,607,391)	(1,284,727)	(198,556)	(3,090,674)	(507,928)
Total Noncurrent Assets	3,324,739	5,679,140	17,992	9,021,871	338,570
TOTAL ASSETS	$ 4,518,887	$ 6,813,565	$ 309,015	$ 11,641,467	$ 989,495
LIABILITIES:					
Current Liabilities:					
Accounts Payable	$ 10,102	$ 139,694	$ 98,294	$ 248,090	$ -
Customer Deposits	5,460			5,460	
Accrued Interest Payable	29,543	38,004		67,547	
Accrued Wages Payable	6,442	6,329		12,771	
Accrued Taxes Payable	419	430		849	
Bonds Payable Current:					
Revenue	97,771	142,326		240,097	
Total Current Liabilities	149,737	326,783	98,294	574,814	-
Noncurrent Liabilities:					
Revenue Bonds Payable	1,625,877	3,765,275		5,391,152	
Accrued Leave Payable	18,958	18,958		37,916	
Total Noncurrent Liabilities	1,644,835	3,784,233	-	5,429,068	-
NET POSITION:					
Net Investment in Capital Assets	1,601,091	1,771,539	17,992	3,390,622	338,570
Unrestricted Net Position	1,123,224	931,010	192,729	2,246,963	650,925
Total Net Position	2,724,315	2,702,549	210,721	5,637,585	989,495
TOTAL LIABILITIES AND NET POSITION	$ 4,518,887	$ 6,813,565	$ 309,015	$ 11,641,467	$ 989,495

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes

	Enterprise Funds				Internal Service Fund
	Water Fund	Wastewater Fund	Liquor Fund	Totals	
Operating Revenue:					
Charges for Goods and Services	$ 519,180	$ 537,595	$ 1,017,768	$ 2,074,543	$ 132,100
Revenue Dedicated to Servicing Debt	47,406			47,406	
Lottery Sales			41,730	41,730	
Miscellaneous	9,253	44,051		53,304	
TOTAL OPERATING REVENUE	575,839	581,646	1,059,498	2,216,983	132,100
Operating Expenses:					
Personal Services	149,899	145,424		295,323	
Other Current Expense	97,557	114,783	3,026	215,366	
Materials	116,717		951,850	1,068,567	
Depreciation	112,483	116,373	3,239	232,095	63,164
TOTAL OPERATING EXPENSES	476,656	376,580	958,115	1,811,351	63,164
Operating Income (Loss)	99,183	205,066	101,383	405,632	68,936
Nonoperating Revenue (Expense):					
Operating Grants		22,012		22,012	
Investment Earnings	1,486	1,055	316	2,857	727
Rental Revenue	41,061		15,000	56,061	
Sale of Surplus Property	1,568			1,568	1,000
Interest Expense and Fiscal Charges	(58,498)	(98,650)		(157,148)	
Other	(4,296)	(3,780)		(8,076)	
TOTAL NONOPERATING REVENUE (EXPENSE)	(18,679)	(79,363)	15,316	(82,726)	1,727
Income (Loss) Before Contributions and Transfers	80,504	125,703	116,699	322,906	70,663
Capital Contributions	47,619			47,619	
Transfers In		95,000		95,000	
Transfers Out			(98,520)	(98,520)	
Change in Net Position	128,123	220,703	18,179	367,005	70,663
Net Position - Beginning	2,596,192	2,481,846	192,542	5,270,580	918,832
NET POSITION - ENDING	$ 2,724,315	$ 2,702,549	$ 210,721	$ 5,637,585	$ 989,495

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
DECEMBER 31, 2014

WORKING DRAFT
For Discussion Purposes Only

	Enterprise Funds				
	Water Fund	Wastewater Fund	Liquor Fund	Total	Internal Service Fund
Cash Flows from Operating Activities:					
Receipts from Customers	$ 695,119	$ 563,864	$ 1,170,375	$ 2,429,358	$ -
Payments to Employees for Services	(145,005)	(140,659)		(285,664)	
Payments to Suppliers of Goods and Services	(272,031)	(66,687)	(1,055,891)	(1,394,609)	
Receipts for Interfund Services Provided				-	132,100
Net Cash Provided (Used) by Operating Activities	278,083	356,518	114,484	749,085	132,100
Cash Flows from Noncapital Financing Activities:					
Transfers from Other Funds	-	95,000	(98,520)	(3,520)	
Net Cash Provided (Used) by Noncapital Financing Activities	-	95,000	(98,520)	(3,520)	-
Cash Flows from Capital and Related Financing Activities:					
Proceeds from Capital Debt	52,829	1,007,254		1,060,083	
Purchase of Capital Assets	(3,452)	(999,150)		(1,002,602)	-
Principal Paid on Capital Debt	(78,101)	(121,407)		(199,508)	
Interest Paid on Capital Debt	(34,886)	(77,079)		(111,965)	
Other Receipts	38,333	18,233	15,000	71,566	
Net Cash Provided (Used) by Capital and Related Financing Activities	(25,277)	(172,149)	15,000	(182,426)	-
Cash Flows from Investing Activities:					
Interest Earnings	1,081	778	316	2,175	728
Net Cash Provided by Investing Activities	1,081	778	316	2,175	728
Net Increase (Decrease) in Cash and Cash Equivalents	253,887	280,147	31,280	565,314	132,828
Cash and Cash Equivalents at Beginning of Year	897,736	657,082	151,963	1,706,781	518,097
Cash and Cash Equivalents at End of Year	$ 1,151,623	$ 937,229	$ 183,243	$ 2,272,095	$ 650,925
RECONCILIATION OF OPERATING INCOME (LOSS) TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES:					
Operating Income (Loss)	$ 99,183	$ 205,066	$ 101,383	$ 405,632	$ 68,936
Net Cash Provided (Used) by Operating Activities:					
Depreciation Expense	112,483	116,373	3,240	232,096	63,164
Change in Assets and Liabilities:					
Receivables	1,378	1,008	110,877	113,263	
Due From Other Governments	117,852	(18,790)		99,062	
Customer Deposits	50			50	
Accounts and Other Payables	(57,757)	48,096	(101,016)	(110,677)	
Accrued Leave Payable	2,047	2,047		4,094	
Accrued Taxes Payable	419	414			
Accrued Wages Payable	2,428	2,304		4,732	
Net Cash Provided (Used) by Operating Activities	$ 278,083	$ 356,518	$ 114,484	$ 749,085	$ 132,100
Noncash Investing, Capital and Financing Activities:					
Debt Forgiveness	$ 47,620				

The notes to the financial statements are an integral part of this statement.

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
Beginning Balance	$ 2,481,512.33	$ 457,776.50	$ 58,899.36	$ 2,586.95	$ 10,800.65	$ 3,011,575.79
Revenues and Other Sources:						
Property Taxes	957,206.18	-	-	-	-	957,206.18
General Sales and Use Taxes	998,975.21	-	53,925.13	-	-	1,052,900.34
Amusement Taxes	396.00	-	-	-	-	396.00
Penalties and Interest on Delinquent Taxes	731.22	-	-	-	-	731.22
Licenses and Permits	29,504.50	-	-	-	-	29,504.50
Federal Grants	24,399.59	-	-	-	-	24,399.59
Federal Shared Revenue	38,000.00	-	-	-	-	38,000.00
State Shared Revenue:						
Bank Franchise Tax	25,220.01	-	-	-	-	25,220.01
Motor Vehicle Commercial Prorate	2,958.61	-	-	-	-	2,958.61
Liquor Tax Reversion	20,604.41	-	-	-	-	20,604.41
Motor Vehicle Licenses (5%)	24,581.75	-	-	-	-	24,581.75
Local Government Highway and Bridge Fund	50,881.39	-	-	-	-	50,881.39
County Shared Revenue:						
County Wheel Tax	5,495.50	-	-	-	-	5,495.50
Charges for Goods and Services:						
General Government	1,000.00	-	-	-	-	1,000.00
Public Safety	135.00	-	-	-	-	135.00
Highways and Streets	13,444.34	-	-	-	-	13,444.34
Culture and Recreation	32,869.22	-	-	-	-	32,869.22
Other	13,285.21	-	-	-	-	13,285.21
Court Fines and Costs	286.00	-	-	-	-	286.00
Forfeits	102.56	-	-	-	-	102.56
Parking Meter Fines	2,085.00	-	-	-	-	2,085.00
Library	-	-	-	2,250.06	-	2,250.06
Other Fines and Forfeits	440.00	-	-	-	-	440.00
Investment Earnings	3,770.38	403.71	68.25	0.34	9.31	4,251.99
Rentals	2,400.00	-	-	-	-	2,400.00
Special Assessments	5,262.82	-	-	-	7,001.48	12,264.30
Contributions and Donations						

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
from Private Sources	35.00	49,853.35	-	1,097.86	-	50,986.21
Sale of Municipal Property	-	-	-	15.70	-	15.70
Compensation for Loss or Damage to Capital Assets	6,780.19	-	-	-	-	6,780.19
Other	20,321.20	-	-	35.68	-	20,356.88
Total Revenue and Other Sources	2,281,171.29	50,257.06	53,993.38	3,399.64	7,010.79	2,395,832.16
Expenditures and Other Uses:						
Legislative	44,536.35	-	-	-	-	44,536.35
Executive	143,548.71	-	-	-	-	143,548.71
Financial Administration	93,780.88	-	-	-	-	93,780.88
Other General Government	75,047.01	-	-	-	-	75,047.01
Police	240,650.40	-	-	-	-	240,650.40
Fire	56,129.17	-	-	-	-	56,129.17
Protective Inspection	40,298.30	-	-	-	-	40,298.30
Highways and Streets	424,142.46	-	-	-	-	424,142.46
Sanitation	5,610.85	-	-	-	-	5,610.85
Transit	44,523.80	-	-	-	-	44,523.80
Health	6,820.67	-	-	-	-	6,820.67
Humane Society	1,769.74	-	-	-	-	1,769.74
Ambulance	40,000.00	-	-	-	-	40,000.00
Recreation	86,862.26	-	-	-	-	86,862.26
Parks	127,467.69	-	-	-	-	127,467.69
Libraries	151,241.53	5,011.66	-	4,488.95	-	160,742.14
Economic Development and Assistance (Industrial Development)	214,995.63	-	38,736.25	-	-	253,731.88
Capital Outlay	-	1,011,273.99	-	-	-	1,011,273.99
Total Expenditures and Other Uses	1,797,425.45	1,016,285.65	38,736.25	4,488.95	-	2,856,936.30
Transfers In (Out)	(825,668.56)	847,000.00	-	-	(17,811.44)	3,520.00
Increase/Decrease in Fund Balance	(341,922.72)	(119,028.59)	15,257.13	(1,089.31)	(10,800.65)	(457,584.14)
Ending Balance:						
Nonspendable	40,624.89	-	-	-	-	40,624.89
Restricted	-	338,747.91	74,156.49	-	-	412,904.40
Assigned	-	-	238,600.00	-	-	238,600.00
Unassigned	1,992,817.52	-	-	1,497.64	-	1,994,315.16

ANNUAL REPORT FOR CITY OF DELL RAPIDS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2014

	GOVERNMENTAL FUNDS					
	General Fund	Library Building Fund	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Governmental Funds
Governmental Long-term Debt						

PROPRIETARY FUNDS	Liquor Fund	Water Fund	Wastewater Fund
Beginning Balance	192,541.58	2,516,282.88	2,478,224.97
Revenues	1,074,765.18	690,761.15	567,064.37
Expenses	958,113.69	530,067.99	499,337.64
Transfers In (Out)	(98,520.00)	-	95,000.00
Ending Balance:			
Net Investment in Capital Assets	17,992.08	1,601,091.54	1,960,826.33
Restricted for Debt Service	-	112,988.12	198,485.60
Unrestricted	192,680.99	957,339.69	457,209.16
Long-term Debt	-	1,723,647.49	3,648,697.33

The preceding financial data does not include fiduciary funds or component units. Information pertaining to those activities may be obtained by contacting the municipal finance officer at 605-428-3595

Municipal funds are deposited as follows:

Depository	Amount
Home Federal	3,908,008.37
1st National Bank	1,222,858.42

Exhibit III

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Assets:				
Cash and Cash Equivalents	$ 1,820,452.96	$ 605,695.01	$ 71,407.01	$ 2,497,554.98
110 Taxes Receivable--Delinquent	150,957.46	-	-	150,957.46
115 Accounts Receivable, Net	2,601.33	-	-	2,601.33
121 Special Assessments Receivable--Current	3,610.70	-	-	3,610.70
122 Special Assessments Receivable--Delinquent	2,473.98	-	-	2,473.98
123 Special Assessments Receivable--Deferred	3,770.47	-	-	3,770.47
125 Interest Receivable--Special Assessments	460.32	-	-	460.32
128 Notes Receivable	-	-	238,600.00	238,600.00
132 Due from State Governments	85,053.00	-	4,247.12	89,300.12
154 Deposits	40,624.89	-	-	40,624.89
Total Assets	2,110,005.11	605,695.01	314,254.13	3,029,954.25
Deferred Outflows of Resources:				
198 Other Deferred Outflows of Resources	$ -	$ -	$ -	$ -
Total Deferred Outflows of Resources:	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	$ 2,110,005.11	$ 605,695.01	$ 314,254.13	$ 3,029,954.25
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:				
Liabilities:				
202 Accounts Payable	$ 57,638.81	$ 266,947.10	$ -	$ 324,585.91
216 Accrued Wages Payable	5,341.72	-	-	5,341.72
217 Accrued Taxes Payable	2,225.31	-	-	2,225.31
Total Liabilities	65,205.84	266,947.10	-	332,152.94

Exhibit III

MUNICIPALITY OF DELL RAPIDS
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Deferred Inflows of Resources:				
245 Unavailable Revenue-Property Taxes	1,041.39	-	-	1,041.39
246 Unavailable Revenue-Special Assessments	10,315.47	-	-	10,315.47
Total Deferred Inflows of Resources:	11,356.86	-	-	11,356.86
Fund Balances:				
263 Nonspendable	40,624.89	-	-	40,624.89
264 Restricted	-	338,747.91	74,156.49	412,904.40
266 Assigned	-	-	238,600.00	238,600.00
267 Unassigned	1,992,817.52	-	1,497.64	1,994,315.16
Total Fund Balances	2,033,442.41	338,747.91	314,254.13	2,686,444.45
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 2,110,005.11	$ 605,695.01	$ 314,254.13	$ 3,029,954.25

The notes to the financial statements are an integral part of this statement.

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
Revenues:				
310 Taxes:				
311 General Property Taxes	$ 957,206.18	$ -	$ -	$ 957,206.18
313 General Sales and Use Taxes	998,975.21	-	53,925.13	1,052,900.34
315 Amusement Taxes	396.00	-	-	396.00
319 Penalties and Interest on Delinquent Taxes	731.22	-	-	731.22
320 Licenses and Permits	29,504.50	-	-	29,504.50
330 Intergovernmental Revenue:				
331 Federal Grants	24,399.59	-	-	24,399.59
332 Federal Shared Revenue	38,000.00	-	-	38,000.00
335 State Shared Revenue:				
335.01 Bank Franchise Tax	25,220.01	-	-	25,220.01
335.02 Motor Vehicle Commercial Prorate	2,958.61	-	-	2,958.61
335.03 Liquor Tax Reversion	20,604.41	-	-	20,604.41
335.04 Motor Vehicle Licenses (5%)	24,581.75	-	-	24,581.75
335.08 Local Government Highway and Bridge Fund	50,881.39	-	-	50,881.39
338.03 County Wheel Tax	5,495.50	-	-	5,495.50
340 Charges for Goods and Services:				
341 General Government	1,000.00	-	-	1,000.00
342 Public Safety	135.00	-	-	135.00
343 Highways and Streets	13,444.34	-	-	13,444.34
346 Culture and Recreation	32,869.22	-	-	32,869.22
349 Other	13,285.21	-	-	13,285.21
350 Fines and Forfeits:				

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
351 Court Fines and Costs	286.00	-	-	286.00
352 Animal Control Fines	102.56	-	-	102.56
353 Parking Meter Fines	2,085.00	-	-	2,085.00
354 Library	-	-	2,250.06	2,250.06
359 Other	440.00	-	-	440.00
360 Miscellaneous Revenue:				
361 Investment Earnings	3,770.38	403.71	77.90	4,251.99
362 Rentals	2,400.00	-	-	2,400.00
363 Special Assessments	5,262.82	-	7,001.48	12,264.30
367 Contributions and Donations from Private Sources	35.00	49,853.35	1,097.86	50,986.21
369 Other	20,321.20	-	35.68	20,356.88
Total Revenue	2,274,391.10	50,257.06	64,388.11	2,389,036.27
Expenditures:				
410 General Government:				
411 Legislative	44,536.35	-	-	44,536.35
412 Executive	143,548.71	-	-	143,548.71
414 Financial Administration	93,780.88	-	-	93,780.88
419 Other	75,047.01	-	-	75,047.01
Total General Government	356,912.95	-	-	356,912.95
420 Public Safety:				
421 Police	240,650.40	-	-	240,650.40
422 Fire	56,129.17	-	-	56,129.17
423 Protective Inspection	40,298.30	-	-	40,298.30
Total Public Safety	337,077.87	-	-	337,077.87
430 Public Works:				

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
431 Highways and Streets	424,142.46	-	-	424,142.46
432 Sanitation	5,610.85	-	-	5,610.85
439 Transit	44,523.80	-	-	44,523.80
Total Public Works	474,277.11	-	-	474,277.11
440 Health and Welfare:				
441 Health	6,820.67	-	-	6,820.67
444 Humane Society	1,769.74	-	-	1,769.74
446 Ambulance	40,000.00	-	-	40,000.00
Total Health and Welfare	48,590.41	-	-	48,590.41
450 Culture and Recreation:				
451 Recreation	86,862.26	-	-	86,862.26
452 Parks	127,467.69	-	-	127,467.69
455 Libraries	151,241.53	5,011.66	4,488.95	160,742.14
Total Culture and Recreation	365,571.48	5,011.66	4,488.95	375,072.09
460 Conservation and Development:				
465 Economic Development and Assistance (Industrial Development)	214,995.63	-	38,736.25	253,731.88
Total Conservation and Development	214,995.63	-	38,736.25	253,731.88
485 Capital Outlay		1,011,273.99	-	1,011,273.99
Total Expenditures	1,797,425.45	1,016,285.65	43,225.20	2,856,936.30
Excess of Revenues Over (Under) Expenditures	476,965.65	(966,028.59)	21,162.91	(467,900.03)

Exhibit IV

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	General Fund	Library Building Fund	Nonmajor Governmental Funds	Total Governmental Funds
Other Financing Sources (Uses):				
391.01 Transfers In	116,331.44	847,000.00	-	963,331.44
391.03 Sale of Municipal Property	-	-	15.70	15.70
391.04 Compensation for Loss or Damage to Capital Assets	6,780.19	-	-	6,780.19
511 Transfers Out (Enter as Negative)	(942,000.00)	-	(17,811.44)	(959,811.44)
Total Other Financing Sources (Uses)	(818,888.37)	847,000.00	(17,795.74)	10,315.89
Net Change in Fund Balances	(341,922.72)	(119,028.59)	3,367.17	(457,584.14)
Fund Balance - Beginning	2,481,512.33	457,776.50	72,286.96	3,011,575.79
Adjustments:				
Prior year Auditor adjustments	(106,147.20)	-	238,600.00	132,452.80
Adjusted Fund Balance - Beginning	2,375,365.13	457,776.50	310,886.96	3,144,028.59
FUND BALANCE- ENDING	$ 2,033,442.41	$ 338,747.91	$ 314,254.13	$ 2,686,444.45

The notes to the financial statements are an integral part of this statement.

Exhibit V

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:					
Current Assets:					
Cash and Cash Equivalents	$ 183,194.93	$ 1,088,181.72	$ 974,090.40	$ 2,245,467.05	$ 650,924.92
115 Accounts Receivable, Net	107,779.73	42,119.40	46,769.56	196,668.69	-
135 Interest Receivable	-	405.35	276.72	682.07	-
Total Current Assets	290,974.66	1,130,706.47	1,021,136.68	2,442,817.81	650,924.92
Noncurrent Assets:					
107.1 Restricted Cash and Cash Equivalents	-	5,460.00	-	5,460.00	-
Capital Assets:					
160 Land	3,000.00	45,128.25	37,029.48	85,157.73	-
162 Buildings	154,977.23	2,625,463.19	3,780,845.27	6,561,285.69	-
164 Improvements Other Than Buildings	-	1,415,341.71	2,121,142.13	3,536,483.84	-
166 Machinery and Equipment	58,571.17	546,197.26	59,184.95	663,953.38	845,998.57
168 Construction Work in Progress	-	-	729,235.40	729,235.40	
Less: Accumulated Depreciation (Credit)	(198,556.32)	(1,439,391.38)	(1,284,912.89)	(2,922,860.59)	(507,928.16)
190 Intangible Assets	-	300,000.00	-	300,000.00	-
191 Accumulated Amortization (Credit)	-	(168,000.00)	-	(168,000.00)	-
Total Noncurrent Assets	17,992.08	3,330,199.03	5,442,524.34	8,790,715.45	338,070.41
Total Assets	308,966.74	4,460,905.50	6,463,661.02	11,233,533.26	988,995.33
Deferred Outflows of Resources:					
198 Other Deferred Outflows of Resources				-	
Total Deferred Outflows of Resources:	-	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	308,966.74	4,460,905.50	6,463,661.02	11,233,533.26	988,995.33
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:					
Current Liabilities:					
202 Accounts Payable	$ 98,293.67	$ 10,102.07	$ 139,694.01	$ 248,089.75	$ -
215 Accrued Interest Payable	-	29,542.53	38,003.85	67,546.38	-
216 Accrued Wages Payable	-	1,356.93	1,356.93	2,713.86	-

Exhibit V

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF NET POSITION
PROPRIETARY FUNDS
December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
217 Accrued Taxes Payable	-	419.03	429.71	848.74	-
220 Customer Deposits	-	5,460.00	-	5,460.00	-
226.02 Revenue	-	97,770.69	142,326.32	240,097.01	-
Total Current Liabilities	98,293.67	144,651.25	321,810.82	564,755.74	-
Noncurrent Liabilities:					
231 Bonds Payable:					
231.02 Revenue	-	1,625,876.80	3,506,371.01	5,132,247.81	-
233 Accrued Leave Payable	-	18,958.10	18,958.10	37,916.20	-
Total Noncurrent Liabilities	-	1,644,834.90	3,525,329.11	5,170,164.01	-
Total Liabilities	98,293.67	1,789,486.15	3,847,139.93	5,734,919.75	-
Deferred Inflows of Resources:					
247 Other Deferred Inflows of Resources	-	-	-	-	-
Total Deferred Inflows of Resources:	-	-	-	-	-
NET POSITION:					
253.10 Net Investment in Capital Assets	17,992.08	1,601,091.54	1,960,826.33	3,579,909.95	338,570.41
253.20 Restricted for:					
253.21 Revenue Bond Debt Service	-	112,988.12	198,485.60	311,473.72	-
253.90 Unrestricted	192,680.99	957,339.69	457,209.16	1,607,229.84	650,424.92
Total Net Position	210,673.07	2,671,419.35	2,616,521.09	5,498,613.51	988,995.33
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION	$ 308,966.74	$ 4,460,905.50	$ 6,463,661.02	$ 11,233,533.26	$ 988,995.33

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
Operating Revenue:					
370/380 Charges for Goods and Services	$ 1,017,768.32	$ 519,180.13	$ 537,594.56	$ 2,074,543.01	$ -
Revenue Dedicated to Servicing Debt	-	47,406.00	-	47,406.00	-
380.05 Lottery Sales	41,729.60	-	-	41,729.60	-
369 Miscellaneous	-	9,251.82	6,598.66	15,850.48	-
Total Operating Revenue	1,059,497.92	575,837.95	544,193.22	2,179,529.09	-
Operating Expenses:					
410 Personal Services	-	144,913.00	140,552.54	285,465.54	-
420 Other Current Expense	3,024.73	97,456.83	140,575.79	241,057.35	-
426.2 Materials (Cost of Goods Sold)	951,849.75	116,716.56	-	1,068,566.31	-
457 Depreciation	3,239.21	112,483.33	119,559.31	235,281.85	63,164.38
Total Operating Expenses	958,113.69	471,569.72	400,687.64	1,830,371.05	63,164.38
Operating Income (Loss)	101,384.23	104,268.23	143,505.58	349,158.04	(63,164.38)
Nonoperating Revenue (Expense):					
330 Operating Grants	-	71,057.00	22,012.47	93,069.47	-
361 Investment Earnings	267.26	1,237.88	858.68	2,363.82	727.81
362 Rental Revenue	15,000.00	41,060.65	-	56,060.65	132,100.00
442 Interest Expense (Enter as Negative)	-	(58,498.27)	(98,650.00)	(157,148.27)	-
(492)366 Gain (Loss) on Disposition of Assets	-	1,567.67	-	1,567.67	-
(429)369.01 Other	-	(4,294.40)	(3,780.58)	(8,074.98)	-
Total Nonoperating Revenue (Expense)	15,267.26	52,130.53	(79,559.43)	(12,161.64)	132,827.81
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	116,651.49	156,398.76	63,946.15	336,996.40	69,663.43
391.1 Transfers In	-	-	95,000.00	95,000.00	-
511 Transfers Out (Enter as Negative)	(98,520.00)	-	-	(98,520.00)	-
Change in Net Position	18,131.49	156,398.76	158,946.15	333,476.40	69,663.43
Net Position - Beginning	192,541.58	2,516,282.88	2,478,224.97	5,187,049.43	919,331.90
Adjustments:					
Prior year Auditor adjustments	-	(1,262.29)	(20,650.03)	(21,912.32)	-
Adjusted Net Position - Beginning	192,541.58	2,515,020.59	2,457,574.94	5,165,137.11	919,331.90

MUNICIPALITY OF DELL RAPIDS
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
For the Year Ended December 31, 2014

	Enterprise Funds				
	Liquor Fund	Water Fund	Wastewater Fund	Totals	Internal Service Funds
NET POSITION - ENDING	$ 210,673.07	$ 2,671,419.35	$ 2,616,521.09	$ 5,498,613.51	$ 988,995.33

The notes to the financial statements are an integral part of this statement.

MUNICIPALITY OF DELL RAPIDS
COMBINING BALANCE SHEET
NONMAJOR GOVERNMENTAL FUNDS
December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:				
Assets:				
Cash and Cash Equivalents	$ 69,909.37	$ 1,497.64	$ -	$ 71,407.01
128 Notes Receivable	238,600.00	-	-	238,600.00
132 Due from State Government	4,247.12	-	-	4,247.12
Total Assets	312,756.49	1,497.64	-	314,254.13
Deferred Outflows of Resources:				
198 Other Deferred Outflows of Resources	-	-	-	-
Total Deferred Outflows of Resources:	-	-	-	-
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES:	312,756.49	1,497.64	-	314,254.13
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES:				
Liabilities:				
202 Accounts Payable	-	-	-	-
Total Liabilities	-	-	-	-
Deferred Inflows of Resources:				
245 Unavailable Revenue-Property Taxes	-	-	-	-
246 Unavailable Revenue-Special Assessments	-	-	-	-
Total Deferred Inflows of Resources:	-	-	-	-
Fund Balances:				
264 Restricted	74,156.49	-	-	74,156.49
266 Assigned	238,600.00	-	-	238,600.00
267 Unassigned	-	1,497.64	-	1,497.64
Total Fund Balances	312,756.49	1,497.64	-	314,254.13
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	$ 312,756.49	$ 1,497.64	$ -	$ 314,254.13

MUNICIPALITY OF DELL RAPIDS
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
NONMAJOR GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
Revenues:				
310 Taxes:				
313 General Sales and Use Taxes	$ 53,925.13	$ -	$ -	$ 53,925.13
350 Fines and Forfeits:				
354 Library	-	2,250.06	-	2,250.06
360 Miscellaneous Revenue:				
361 Investment Earnings	68.25	0.34	9.31	77.90
363 Special Assessments	-	-	7,001.48	7,001.48
367 Contributions and Donations from Private Sources	-	1,097.86	-	1,097.86
369 Other	-	35.68	-	35.68
Total Revenue	53,993.38	3,383.94	7,010.79	64,388.11
Expenditures:				
450 Culture and Recreation:				
455 Libraries	-	4,488.95	-	4,488.95
Total Culture and Recreation	-	4,488.95	-	4,488.95
460 Conservation and Development:				
465 Economic Development and Assistance (Industrial Development)	38,736.25	-	-	38,736.25
Total Conservation and Development	38,736.25	-	-	38,736.25
Total Expenditures	38,736.25	4,488.95	-	43,225.20

MUNICIPALITY OF DELL RAPIDS
COMBINING STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
NONMAJOR GOVERNMENTAL FUNDS
For the Year Ended December 31, 2014

	Gross Receipts Fund	Library Fines Fund	Debt Service Fund	Total Nonmajor Governmental Funds
Excess of Revenues Over (Under) Expenditures	15,257.13	(1,105.01)	7,010.79	21,162.91
Other Financing Sources (Uses):				
391.03 Sale of Municipal Property	-	15.70	-	15.70
511 Transfers Out (Enter as Negative)	-	-	(17,811.44)	(17,811.44)
Total Other Financing Sources (Uses)	-	15.70	(17,811.44)	(17,795.74)
Net Change in Fund Balances	15,257.13	(1,089.31)	(10,800.65)	3,367.17
Fund Balance - Beginning	58,899.36	2,586.95	10,800.65	72,286.96
Adjustments:				
Prior year Auditor adjustments	238,600.00	-	-	238,600.00
Adjusted Fund Balance - Beginning	297,499.36	2,586.95	10,800.65	310,886.96
FUND BALANCE- ENDING	$ 312,756.49	$ 1,497.64	$ 0.00	$ 314,254.13

MUNICIPALITY OF DELL RAPIDS
SCHEDULE OF CHANGES IN LONG-TERM DEBT
For the Year Ended December 31, 2014

Indebtedness	Long-Term Debt January 1, 2014	Add New Debt	Less Debt Retired	Long-Term Debt December 31, 2014
Enterprise Long-Term Debt:				
231.02 Revenue Bonds	$ 4,894,559.10	$ 748,349.84	$ 270,564.12	$ 5,372,344.82
Total	$ 4,894,559.10	$ 748,349.84	$ 270,564.12	$ 5,372,344.82

(Do not include interest in the above figures)

11-20-15 4:08 PM G/L BUDGET REPORT

2015 BUDGET

BUDGET : 15-2015 BUDGET
FUND : 101 GENERAL FUND
ITEMS PRINTED: ANNUAL BUDGET AMOUNTS

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
101-31101	GENERAL PROPERTY TAXES	1,012,801.00CR
101-31102	PRIOR YEARS' PROPERTY TAXES	2,000.00CR
101-31107	MOBILE HOME TAX	200.00CR
101-31108	PRIOR YEARS TAX ON MOBILE HOME	0.00
101-31300	SALES TAX	800,000.00CR
101-31500	AMUSEMENT LICENSES	400.00CR
101-31800	TAX DEED REVENUE	0.00
101-31900	PENALTY & INTEREST PRIOR YEARS	1,000.00CR
101-32010	MALT BEVERAGE LICENSES	1,450.00CR
101-32020	LIQUOR LICENCES	7,000.00CR
101-32025	GOLF CART LICENSE	0.00
101-32030	PET LICENSES	400.00CR
101-32040	BUILDING PERMITS	10,000.00CR
101-32050	GARBAGE HAULERS' LICENCES	800.00CR
101-32060	BICYCLE LICENSES	0.00
101-32070	PEDDLERS LICENSE	500.00CR
101-32080	CONCESSION STAND PERMIT	0.00
101-32090	OUTDOOR DANCE PERMITS	300.00CR
101-33000	INTERGOVERNMENTAL REVENUE	0.00
101-33110	FED TRANS GRANT-5311-UM3684	25,240.96CR
101-33111	FED REC TRAILS PROG GRANT	0.00
101-33113	TITLE IIIB TRANSIT FUNDS	1,131.00CR
101-33114	5309 FEDERAL FUNDS-UM03	0.00
101-33400	STATE GRANTS	0.00
101-33501	BANK FRANCHISE TAX	25,000.00CR
101-33502	PORT OF ENTRY	2,000.00CR
101-33503	LIQUOR TAX REVERSION	17,000.00CR
101-33504	MOTOR VEHICLE LICENSES	12,000.00CR
101-33506	FIRE INSURANCE PREMIUM REV	0.00
101-33508	LOCAL GOVT HIGHWAY & BRIDGE	30,000.00CR
101-33520	STATE SHARED OTHER	500.00CR
101-33803	COUNTY WHEEL TAX	4,000.00CR
101-33899	COUNTY SHARED - OTHER	0.00
101-33900	OTHER INTERGOVENMENTAL	2,000.00CR
101-34101	ZONING & SUBDIVISION FEES	500.00CR
101-34299	PUBLIC SAFETY - OTHER	0.00
101-34402	MOWING & SNOW REMOVAL	800.00CR
101-34403	RUBBLE SITE CHARGES	8,000.00CR
101-34502	ANIMAL CONTROL	0.00
101-34602	SWIMMING POOL FEES	20,000.00CR
101-34603	RECREATIONAL FEES	600.00CR
101-34604	SWIMMING POOL CONCESSIONS	5,000.00CR
101-34692	PARKS & RECREATION DONATIONS	0.00
101-34693	SWIMMING LESSONS	7,000.00CR
101-34699	OTHER - RECREATION	0.00
101-34900	OTHER INCOME - TRANSIT	9,000.00CR
101-35100	COURT FINES & COSTS	750.00CR
101-35200	ANIMAL CONTROL FINES	0.00
101-35300	PARKING FINES	1,000.00CR
101-35900	OTHER FINES & FORFEITS-NSF	300.00CR
	PAGE TOTAL:	2,008,672.96CR

602- drinking water
604- wastewater

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
604-4325-41100	WAGES	101,320.00
604-4325-41120	OVERTIME	1,000.00
604-4325-41200	FICA	7,828.00
604-4325-41300	RETIREMENT	6,140.00
604-4325-41400	WORKERS' COMPENSATION	2,100.00
604-4325-41500	HEALTH/DENTAL INSURANCE	16,524.00
604-4325-41600	UNEMPLOYMENT COMPENSATION	35.00
604-4325-42100	INSURANCE	3,200.00
604-4325-42200	PROFESSIONAL SERVICES & FEES	50,000.00
604-4325-42210	TESTING	0.00
604-4325-42220	STATE FEES	0.00
604-4325-42300	PUBLISHING & ADVERTISING	200.00
604-4325-42400	EQUIPMENT REPLACEMENT	0.00
604-4325-42500	REPAIR & MAINTENANCE	20,000.00
604-4325-42610	SUPPLIES	7,000.00
604-4325-42680	UNIFORMS	300.00
604-4325-42700	TRAVEL & TRAINING	200.00
604-4325-42800	UTILITIES	30,000.00
604-4325-42900	OTHER EXPENSE	2,000.00
604-4325-43301	15TH STREET PHASE TWO	0.00
604-4325-43310	TREATMENT LAGOONS	0.00
604-4325-43320	COLLECTION SYSTEM	200,000.00
604-4325-43330	15TH STREET	0.00
604-4325-43340	SE SANITARY SEWER EXTENSION	0.00
604-4325-43341	BEACH RR CROSSING UTIL REPLACE	0.00
604-4325-43400	FURNITURE & MINOR EQUIPMENT	100.00
604-4325-43410	COMPUTER SOFTWARE	0.00
604-4325-43420	NORTHVIEW/10 ST IMPROVEMENTS	0.00
604-4325-43430	NEW INDUSTRIAL STREET	0.00
604-4325-43440	10TH STREET	0.00
604-4325-44100	PRINCIPAL	150,720.00
604-4325-44200	INTEREST	127,200.00
604-4325-45300	TRANSFER TO WW RESERVE	2,000.00
604-4325-45700	DEPRECIATION	100,000.00
604-4325-45900	LOSS ON DISPOSE OF CAP ASSETS	0.00
604-4328-41100	WAGES	20,200.00
604-4328-41200	FICA	1,546.00
604-4328-41300	RETIREMENT	1,212.00
604-4328-41400	WORKERS' COMPENSATION	20.00
604-4328-41500	INSURANCE	4,400.00
604-4328-42100	INSURANCE	0.00
604-4328-42200	PROFESSIONAL SERVICES & FEES	500.00
604-4328-42300	PUBLISHING AND ADVERTISING	0.00
604-4328-42510	EQUIPMENT REPAIR & MAINTENANCE	1,000.00
604-4328-42610	SUPPLIES	4,000.00
604-4328-42700	TRAVEL & TRAINING	400.00
604-4328-42800	UTILITIES	2,600.00
604-4328-42900	OTHER	2,700.00
604-4328-43400	FURNITURE & MINOR EQUIPMENT	500.00
	PAGE TOTAL:	866,945.00

11-20-15 4:06 PM G/L BUDGET REPORT 2016 BUDGET

BUDGET : 16-2016 BUDGET
FUND : 101 GENERAL FUND
ITEMS PRINTED: ANNUAL BUDGET AMOUNTS

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
101-31101	GENERAL PROPERTY TAXES	1,038,154.49CR
101-31102	PRIOR YEARS' PROPERTY TAXES	2,000.00CR
101-31107	MOBILE HOME TAX	200.00CR
101-31108	PRIOR YEARS TAX ON MOBILE HOME	0.00
101-31300	SALES TAX	850,000.00CR
101-31500	AMUSEMENT LICENSES	400.00CR
101-31800	TAX DEED REVENUE	0.00
101-31900	PENALTY & INTEREST PRIOR YEARS	1,000.00CR
101-32010	MALT BEVERAGE LICENSES	1,450.00CR
101-32020	LIQUOR LICENCES	7,000.00CR
101-32025	GOLF CART LICENSE	0.00
101-32030	PET LICENSES	400.00CR
101-32040	BUILDING PERMITS	10,000.00CR
101-32050	GARBAGE HAULERS' LICENCES	800.00CR
101-32060	BICYCLE LICENSES	0.00
101-32070	PEDDLERS LICENSE	500.00CR
101-32080	CONCESSION STAND PERMIT	0.00
101-32090	OUTDOOR DANCE PERMITS	300.00CR
101-33000	INTERGOVERNMENTAL REVENUE	0.00
101-33110	FED TRANS GRANT-5311-UM3684	27,928.00CR
101-33111	FED REC TRAILS PROG GRANT	116,000.00CR
101-33113	TITLE IIIB TRANSIT FUNDS	1,131.00CR
101-33114	5309 FEDERAL FUNDS-UM03	0.00
101-33400	STATE GRANTS	900,000.00CR
101-33501	BANK FRANCHISE TAX	25,000.00CR
101-33502	PORT OF ENTRY	2,000.00CR
101-33503	LIQUOR TAX REVERSION	17,000.00CR
101-33504	MOTOR VEHICLE LICENSES	15,000.00CR
101-33506	FIRE INSURANCE PREMIUM REV	0.00
101-33508	LOCAL GOVT HIGHWAY & BRIDGE	30,000.00CR
101-33520	STATE SHARED OTHER	500.00CR
101-33803	COUNTY WHEEL TAX	4,000.00CR
101-33899	COUNTY SHARED - OTHER	0.00
101-33900	OTHER INTERGOVENMENTAL	2,000.00CR
101-34101	ZONING & SUBDIVISION FEES	500.00CR
101-34299	PUBLIC SAFETY - OTHER	0.00
101-34402	MOWING & SNOW REMOVAL	800.00CR
101-34403	RUBBLE SITE CHARGES	8,000.00CR
101-34502	ANIMAL CONTROL	0.00
101-34602	SWIMMING POOL FEES	20,000.00CR
101-34603	RECREATIONAL FEES	600.00CR
101-34604	SWIMMING POOL CONCESSIONS	5,000.00CR
101-34692	PARKS & RECREATION DONATIONS	0.00
101-34693	SWIMMING LESSONS	7,000.00CR
101-34699	OTHER - RECREATION	0.00
101-34900	OTHER INCOME - TRANSIT	6,500.00CR
101-35100	COURT FINES & COSTS	750.00CR
101-35200	ANIMAL CONTROL FINES	0.00
101-35300	PARKING FINES	2,000.00CR
101-35900	OTHER FINES & FORFEITS-NSF	300.00CR

PAGE TOTAL: 3,104,213.49CR

602- drinking water
604- wastewater

ACCOUNT NO#	===== ACCOUNT NAME ======	ANNUAL BUDGET
604-4325-41100	WAGES	95,000.00
604-4325-41120	OVERTIME	1,000.00
604-4325-41200	FICA	7,280.00
604-4325-41300	RETIREMENT	6,140.00
604-4325-41400	WORKERS' COMPENSATION	2,100.00
604-4325-41500	HEALTH/DENTAL INSURANCE	17,290.00
604-4325-41600	UNEMPLOYMENT COMPENSATION	35.00
604-4325-42100	INSURANCE	3,200.00
604-4325-42200	PROFESSIONAL SERVICES & FEES	200,000.00
604-4325-42210	TESTING	0.00
604-4325-42220	STATE FEES	0.00
604-4325-42300	PUBLISHING & ADVERTISING	200.00
604-4325-42400	EQUIPMENT REPLACEMENT	10,000.00
604-4325-42500	REPAIR & MAINTENANCE	20,000.00
604-4325-42610	SUPPLIES	7,000.00
604-4325-42680	UNIFORMS	300.00
604-4325-42700	TRAVEL & TRAINING	200.00
604-4325-42800	UTILITIES	35,000.00
604-4325-42900	OTHER EXPENSE	2,000.00
604-4325-43301	15TH STREET PHASE TWO	0.00
604-4325-43310	TREATMENT LAGOONS	0.00
604-4325-43320	COLLECTION SYSTEM	0.00
604-4325-43330	15TH STREET	0.00
604-4325-43340	SE SANITARY SEWER EXTENSION	0.00
604-4325-43341	BEACH RR CROSSING UTIL REPLACE	0.00
604-4325-43400	FURNITURE & MINOR EQUIPMENT	100.00
604-4325-43410	COMPUTER SOFTWARE	0.00
604-4325-43420	NORTHVIEW/10 ST IMPROVEMENTS	0.00
604-4325-43430	NEW INDUSTRIAL STREET	0.00
604-4325-43440	10TH STREET	420,000.00
604-4325-44100	PRINCIPAL	187,668.67
604-4325-44200	INTEREST	146,620.77
604-4325-45300	TRANSFER TO WW RESERVE	2,000.00
604-4325-45700	DEPRECIATION	100,000.00
604-4325-45900	LOSS ON DISPOSE OF CAP ASSETS	0.00
604-4328-41100	WAGES	22,000.00
604-4328-41200	FICA	1,760.00
604-4328-41300	RETIREMENT	1,320.00
604-4328-41400	WORKERS' COMPENSATION	20.00
604-4328-41500	INSURANCE	4,400.00
604-4328-42100	INSURANCE	0.00
604-4328-42200	PROFESSIONAL SERVICES & FEES	500.00
604-4328-42300	PUBLISHING AND ADVERTISING	0.00
604-4328-42510	EQUIPMENT REPAIR & MAINTENANCE	1,000.00
604-4328-42610	SUPPLIES	4,000.00
604-4328-42700	TRAVEL & TRAINING	400.00
604-4328-42800	UTILITIES	2,600.00
604-4328-42900	OTHER	2,700.00
604-4328-43400	FURNITURE & MINOR EQUIPMENT	500.00
	PAGE TOTAL:	1,304,334.44

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DELL RAPIDS CITY
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DELL RAPIDS SD 57022

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DELL RAPIDS CITY

Argus Leader Media
AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
COUNTY OF MINNEHAHA } ss

Linda Schulte being duly sworn, says: That the **Dell Rapids Tribune** is, and during all the times hereinafter mentioned was, a weekly legal newspaper as defined by SDCL 17-2-2.1 through 17-2-2.4, as amended published at Dell Rapids, Minnehaha County, South Dakota; that affiant is and during all of said times, was an employee of the publisher of such newspaper and has personal knowledge of the facts stated in this affidavit; that the notice, order or advertisement, a printed copy of which is hereto attached, was published in said newspaper upon

Wednesday ,the 25 day of November 2015 ,
_____ the _____ day of _____ 2015 ,
_____ ,the _____ day of _____ 2015 ,
_____ ,the _____ day of _____ 2015 ,
_____ ,the _____ day of _____ 2015 ,

and that $34.09 was charged for publishing the same

Linda Schulte

Subscribed and sworn to before me 11/25/2015 .

Betty Gates

Notary Public, South Dakota

My Commission expires March 11, 2016

BETTY GATES
SEAL NOTARY PUBLIC SOUTH DAKOTA SEAL

NOTICE OF PUBLIC HEARING for the CITY OF DELL RAPIDS 10th STREET and HWY 115 PROJECT

Notice is hereby given that the Town of Dell Rapids will hold a Public Hearing on December 7th, 2015, regarding improvements to the Wastewater and Drinking Water Systems. The Town is seeking up to $1,742,000 of funding from the Board of Water and Natural Resources for improvements in two locations to the Wastewater and Water Utility Systems. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or loans from the Drinking Water State Revolving Fund (SRF) and Clean Water State Revolving Fund (SRF) Programs. The expected Drinking Water SRF and Clean Water SRF loan terms are 3.25 percent for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of the loan principal. The amount and source of funds will be determined by the Board of Water and Natural Resources when the application is presented at a scheduled board meeting. The

City of Dell Rapids

Public Hearing For CW-SRF and DW-SRFApplications
10th Street and Highway 115 Project
7:30 PM, Monday, December 7, 2015
Dell Rapids City Hall

Please sign in:

NAME	ADDRESS / REPRESENTING
[illegible]	City of Dell Rapids
Dean Harvey	City Attorney, Dell Rapids
Thomas J. Early	Council Member, City of Dell Rapids
Gary Hark	council member Dell Rapids
[illegible]	101 E 12th St Dells
[illegible]	Council Member, Dell Rapids
[illegible]	DGR Engineering
Michael J. Geraets	City Council
[illegible]	Counsel member
[illegible]	City Council
[illegible]	City Council
[illegible]	609 E 7th St Dell Rapids
[illegible]	607 E 4TH ST DELL RAPIDS
Jesse Christen	Dell Rapids Tribune
[illegible]	City council
Claire Boardman	City of Dell Rapids
Janice Gravning	SECOG

DELL RAPIDS CITY COUNCIL MINUTES
Monday, December 7, 2015 at 7:30

Mayor Fiegen called the Dell Rapids City Council meeting to order at 7:30 p.m. at the City Hall Council Chambers. The Roll was called finding the following members present: Mike Geraets, Mike Sterud, Mary Klockman, Mark Crisp, Tom Earley, Lee Burggraff, Gary Haak and Dave Sommerfeld.
Staff present: Administrator Justin Weiland, Finance Officer Claire Baartman, and City Attorney Dean Hammer

Pledge of Allegiance was recited.

Approval of Agenda: Burggraff motioned to approve the agenda, seconded by Haak. Motion carried.

Approval of Minutes November 16, 2015 Regular Session:
Geraets requested Dave Sommerfeld be listed as absent. Mayor Fiegen noted the Sioux Falls Humane Society 2016 Contract should be changed from 2061 to 2016. Mayor Fiegen also noted 'Christmas at the Dells' was misspelled in the minutes. Earley motioned to approve the minutes of the regular session on November 16, 2015, with the changes stated as above, seconded by Crisp. Motion carried.

Approval of Minutes November 23, 2015 Special Session:
Geraets requested Earley be added to those present and Miles be removed. Geraets also requested the following be added: During the discuss of the motion made by Councilman Earley and before the roll call vote was taken Councilman Geraets asked Public Works Director Larry Schildhauer if he felt current city staff could handle the additional responsibilities of the SBR system. Mr. Schildhauer replied that with additional training he was confident that the present staff could handle the additional responsibility. Sommerfeld motioned to approve the minuets of the special session on November 23, 2015, with the changes as stated above, seconded by Geraets. Motion carried.

Visitors to be Heard: None

Public Hearing – Ordinance No. 826: Re-Zone Lot 6 of Herding Addition From NRC: Natural Resource Conservation District to B-2: General Business District – First Reading
Sommerfeld motioned to approve Ordinance No. 826, Seconded by Klockman. Motion carried. Burggraff abstained.

Public Hearing – DENR State Water Plan Loan Application Resolutions

A.) **2015-18: 10th Street/HWY 115 Project Drinking Water Application**
Janice Gravning with SECOG addressed the Council and answered questions. The City, with SECOG's assistance, will be submitting applications to the Department of Environment & Natural Resources (DENR) for a $705,000 Drinking Water State Revolving Fund (DW-SRF) Loan for the 10th Street and Highway 115 Project. The interest Rate for the loan is 3.25% for a term of 30 years. Burggraff motioned to approve Resolution 2015-18, seconded by Haak. Motion carried.

B.) **2015-19: 10th Street/HWY 115 Project Clean Water Application**
Janice Gravning with SECOG addressed the Council and answered questions. The City, with SECOG's assistance, will be submitting applications to the Department of Environment & Natural Resources (DENR) for a $1,037,000 Clean Water State Revolving Fund (CW-SRF)

Loan. The interest Rate for the loan is 3.25% for a term of 30 years. Haak motioned to approve Resolution 2015-19, seconded by Sommerfeld. Motion Carried.

C.) 2015-20: Waste Water Treatement Facility Clean Water Application
Janice Gravning with SECOG addressed the Council and answered questions. Trent with DGR was also available to answer questions from the Council. The City, with SECOG's assistance, will be submitting an application to the Department of Environment & Natural Resources (DENR) for a $5,758,000 Clean Water State Revolving Fund (CW-SRF) Loan for the Wastewater Treatment Facility Project. The interest rate for the loan is 3.25% for a 30 year term. Sommerfeld motioned to approve Resolution 2015-20, seconded by Crisp. Motion carried.

Old Business
Ordinance No. 822 – Accept Referendum Petitions/Set Election Date

Accept Referendum - The floor was open to community members for questions. The questions revolved around what the referendum petition was for. City Administrator Weiland stated that the petitions received by the City of Dell Rapids were a formal, written request that Ordinance 822, as passed by the governing board of the municipality on October 19th, 2015, be submitted to the voters for their approval or rejection. Crisp motioned to accept the referendum petitions, seconded by sommerfeld. Motion carried.

Set Election Date – Crisp motioned to set the election date to coincide with the Municipal Election on April 12, 2016, seconded by Sommerfeld. Motion Carried.

Resolution No. 2015-13: 2016 Grand Opera House Operating Agreement
Burggraff motioned to table, seconded by Haak. Motion Carried.

Ordinance No. 825 Amend Section 21-39 Increase the Deposit for Water Service – 2nd Reading and Adoption
The Ordinance reflects a new deposit of $125.00 for renting or leasing property. Haak motioned to approve the 2nd reading of Ordinance No. 825, seconded by Klockman. Roll Call: Geraets – Aye, Sterud – Aye, Klockman – Aye, Crisp – Aye, Earley – Aye, Burggraff – Aye, Haak – Aye, Sommerfeld – Aye. Motion Carried 8-0.

New Business
Fire Department 2016 Agreement –
The City established a service agreement with the Dell Rapids Fire Department in 2013. This agreement for 2016 remains the same as 2015 with the contribution to the Fire Department set at $43,558.00.Burggraff moved to approve, seconded by Earley. Motion carried.

Minnehaha County Sherriff Department 2016 Agreement –
Minnehaha County gave notice prior to the 2016 Budget acceptance of a 2.8% increase for 2016 services. The Council discussed the agreement and asked questions on the service provided. Haak motioned to approve the 2016 agreement, seconded by Sterud. Motion carried.

Ordinance No. 827: Waste Water Rate Increase – First Reading

The City Council approved a 20% increase in sewer rates in the 2016 adopted budget. The Council agreed to the rate increase because of the impending wastewater treatment facility project. This increase will be the first of a phased in increase to cover the costs of the new treatment facility. The total increase will not be known until the City receives the final funding package from the DENR. The increase recommended is as follows:

- Increase base rate from $15.25 to $18.34.
- Increase per 1,000 gallons rate from $4.22 to $5.06
- Total increase 5,000 gallon user $7.26 per month.

Haak motioned to approve the first reading of Ordinance No. 827, seconded by Sommerfeld. Motion carried.

Chamber of Commerce Update

Dan Ahlers with the Chamber of Commerce addressed the Council. Mr. Ahlers updated the Council on their most recent accomplishments and events and provided plans for upcoming Chamber activities and events. The Chamber produces a newsletter for Chamber members, Christmas at the Dells was a bigger success than prior years, and they have holiday punch cards distributed in the community for a chance to win a Samsung Galaxy Tablet (purchased locally). The Chamber is also in the process of lining up vendors and entertainment for Quarry Days 2016 as well as working on a Shop Local Campaign.

Hwy 115 Project Phase 2 – T&C's Intersection Design

Mike Park of T&C's addressed the Council and has requested the Council consider the design for the south side of his property at the intersection of 4th Street and Hwy 115. Mr. Park is concerned that with the angle of the intersection large trucks and semis will have a hard time accessing the gas tanks if the entrance is reduced in size. However, Mr. Park is in favor of dressing up the corner and is willing to consider other types of curb such as rollover or gutter type curbs. Administration has had conversations with the DOT and it is their opinion that a 50 foot approach provides all the access that is needed and is the largest they allow anywhere in the state. The difference with this area is that it is within the City's jurisdiction. As such, they will follow the City's direction to a certain extent. The City and the DOT will need to work together to come to a mutual agreement on the T&C entrance footage. Burggraff motioned to work with the DOT to leave T&C's entrance as wide as it currently is to allow adequate access for Semi's and other large vehicles, seconded by Sommerfeld. Motion carried.

HWY 115 Project – DOT Temporary Construction Easements

The DOT is seeking signature of temporary construction easements on the following three properties 1.) City Shop, 2.) Dells Drive Overlook area 3.) leaf drop property. The DOT is offering $1,315.00 for the temporary easements which expire one year after the project is completed. Burggraff motioned to approve signature of the three requested temporary construction easements, seconded by Klockman. Motion carried.

Christmas Eve – City Hall Hours

Recommend the Council discusss and make a decision whether or not to allow the closure of the City officer on December 24th at 12:00 noon. Haak motioned to allow City Hall to close at 12:00 noon and the City employees to take 4 hours accrued vacation time, seconded by Sommerfeld. Motion carried.

Claims Payable

Earley moved to approve the claims as presented, seconded by Sommerfeld. Motion carried.

A-OX WELDING SUPPLY COMPANY, INC	NOVEMBER CYLINDER RENTAL	GENERAL FUND	28.27
ARGUS LEADER	NOVEMBER BILL	GENERAL FUND	691.54
BAARTMAN, CLAIRE	REIMB. FOR DUMP TRUCK LICE	GENERAL FUND	14.00
BEAL DISTRIBUTING, INC	NOVEMBER MALT	LIQUOR FUND	26,479.36
BORNS GROUP	NOVEMBER BILLING	WATER FUND	303.87
	NOVEMBER BILLING	WASTEWATER FUND	303.87
CEDAR SHORE RESORT	SAFETY TRAINING	GENERAL FUND	110.45
CENGAGE LEARNING, INC	2 BOOKS	GENERAL FUND	54.96
CITY OF DELL RAPIDS	NOVEMBER WATER BILL	GENERAL FUND	168.29
DAKOTA BEVERAGE CO, INC.	NOVEMBER MALT	LIQUOR FUND	17,550.21
DAKOTA SUPPLY GROUP	WATER SUPPLIES	WATER FUND	1,010.66
DAKOTA TECHNOLOGY CONSULTING	CH MANAGED SERVICES/BACKUP	GENERAL FUND	1,106.02
DELL RAPIDS ACE	STREET SUPPLIES	GENERAL FUND	144.06
	WATER SUPPLIES	WATER FUND	26.46
DELL RAPIDS LUMBER COMPANY	STREET SUPPLIES	GENERAL FUND	5.96
DELLS ELECTRIC, INC	STREET R&M	GENERAL FUND	192.00
	SEWER R&M	WASTEWATER FUND	107.94
DELLS FARM & TIRE	STREET R&M	GENERAL FUND	35.00
	TRANSIT ROTATE TIRES	GENERAL FUND	30.00
DELLS MATERIALS	STREET SUPPLIES	GENERAL FUND	96.00
DELTA DENTAL	DENTAL INS	GENERAL FUND	419.25
	DENTAL INS	WATER FUND	115.13
	DENTAL INS	WASTEWATER FUND	115.12
DGR	QUARTZITE STREET IMPROVEME	GENERAL FUND	7,878.00
	MISCELLANEOUS ENGINEERING	GENERAL FUND	240.00
	HWY 115 UTILITY REPPLACEME	WATER FUND	1,540.75
	HWY 115 UTILITY REPPLACEME	WASTEWATER FUND	1,540.75
	NORTHVIEW/10TH STREET	WASTEWATER FUND	1,439.63
	WWTF IMPROVEMENTS	WASTEWATER FUND	6,327.00
ED'S PRODUCE	STREET DEPARTMENT GLOVES	GENERAL FUND	121.00
EFTPS	FEDERAL WITHHOLDING	GENERAL FUND	7,194.84
	FEDERAL WITHHOLDING	WATER FUND	2,026.13
	FEDERAL WITHHOLDING	WASTEWATER FUND	2,026.16
ENTRINGER BACKHOE & TRENCHING, LLC	WATER R&M	WATER FUND	714.12
FIRST BANK CARD	CITY CAR - FUEL	GENERAL FUND	59.22
	BOOKS/SUPPLIES	GENERAL FUND	228.76
	OFFICE/SHOP SUPPLIES	GENERAL FUND	148.49
	OFFICE/SHOP SUPPLIES	WATER FUND	37.12
	OFFICE/SHOP SUPPLIES	WASTEWATER FUND	37.12
GARBAGE N MORE	DECEMBER GARBAGE SERVICE	GENERAL FUND	75.00
GEOTEK ENGINEERING & TESTING SERVICES,	QUARTZITE STREET	GENERAL FUND	2,537.50

	WWTF IMPROVEMENTS	WASTEWATER FUND	1,480.00
GLOBAL DISTRIBUTING	NOVEMBER LIQUOR	LIQUOR FUND	425.50
GOLDEN WEST TELECOMMUNICATIONS	NOVEMBER PHONE BILL	GENERAL FUND	428.31
	NOVEMBER PHONE BILL	LIQUOR FUND	46.09
	NOVEMBER PHONE BILL	WATER FUND	170.28
	NOVEMBER PHONE BILL	WASTEWATER FUND	211.05
GRUIS, KARLA	CLEAN CH/LIB	GENERAL FUND	960.00
HANSON LOGOWEAR INC	CLOTHING	GENERAL FUND	62.28
HD SUPPLY WATERWORKS	WATER SUPPLIES	WATER FUND	465.84
J D'S HOUSE OF TROPHIES	EARLEY NAME PLATE	GENERAL FUND	11.25
JOHNSON BROTHERS FAMOUS BRANDS INC	NOVEMBER LIQUOR	LIQUOR FUND	10,320.41
LG EVERIST, INC	SALT/SAND	GENERAL FUND	2,357.70
	SALT/SAND	GENERAL FUND	2,931.82
	STREET - CRUSHED ROAD STON	GENERAL FUND	356.76
	STREET SUPPLIES	GENERAL FUND	372.77
	STREET - CRUSHED ROAD STON	GENERAL FUND	271.67
LINWELD, INC	STREET SUPPLIES	GENERAL FUND	38.70
MIDAMERICAN ENERGY COMPANY	UTILITY BILL	GENERAL FUND	212.86
	UTILITY BILL	WATER FUND	14.99
	UTILITY BILL	WASTEWATER FUND	14.99
MINNEHAHA COMMUNITY WATER, CORP	NOVEMBER SHOP WATER	GENERAL FUND	12.17
	NOVEMBER WATER 6,057K @1.4	WATER FUND	8,843.22
	NOVEMBER SHOP WATER	WATER FUND	12.17
	NOVEMBER SHOP WATER	WASTEWATER FUND	12.16
MINNEHAHA COUNTY REGISTER OF DEEDS	REGISTER OF DEEDS	GENERAL FUND	90.00
NAPA AUTO PARTS	STREET SUPPLIES	GENERAL FUND	188.21
NORTHERN TRUCK EQUIPMENT CORP.	SNOW SUPPLIES	GENERAL FUND	500.82
PENWORTHY	BOOKS	GENERAL FUND	451.41
REPUBLIC NATIONAL DISTRIBUTING CO	LIQUOR 2ND HALF NOVEMBER	LIQUOR FUND	9,043.61
ROEMEN'S AUTOMOTIVE	TRANSIT BUS - OIL CHG AND	GENERAL FUND	137.10
SCHADE VINEYARD	NOVEMBER WINE	LIQUOR FUND	528.00
SCHUNEMAN EQUIPMENT COMPANY	SNOW SUPPLIES	GENERAL FUND	196.90
SD STATE TREASURER, DEPT OF REVENUE	OCTOBER RECREATION TAX	GENERAL FUND	119.86
	LOTTERY 11.01.15-11.15.15	LIQUOR FUND	1,459.37
SDRS SUPPLEMENTAL RETIREMENT PLAN	ROTH RETIREMENT	GENERAL FUND	290.00
	ROTH RETIREMENT	WATER FUND	50.00
	ROTH RETIREMENT	WASTEWATER FUND	50.00
SEATING AND ATHLETIC FACILITY ENTERPRI	RICKEMAN FIELD - GRANDSTAN	GENERAL FUND	58,112.00
SOUTH DAKOTA RETIREMENT SYSTEM	RETIREMENT	GENERAL FUND	3,387.49
	RETIREMENT	WATER FUND	999.22
	RETIREMENT	WASTEWATER FUND	999.21
SOUTH EASTERN COUNCIL OF GOVERNMENTS	2016 SECOG DUES	GENERAL FUND	4,870.00
STAN HOUSTON EQUIP.CO.INC.	WATER SUPPLIES	WATER FUND	475.00

THOMPSON REUTERS, PROFESSIONAL SOFTWAR	CS FA SYSTEM - PAYMENT 1 O	GENERAL FUND	1,012.30
A.J. SWANSON	A.J. SWANSON: KOMMES ATTY	GENERAL FUND	2,054.89
PRAIRIE BERRY WINERY	NOV WINE	LIQUOR FUND	714.00
WILDERMUTH, PAUL	CLOTHING	WATER FUND	97.97
	CLOTHING	WASTEWATER FUND	97.97
XCEL ENERGY	NOV UTILITY BILL	GENERAL FUND	3,762.32
	NOV UTILITY BILL	WATER FUND	621.85
	NOV UTILITY BILL	WASTEWATER FUND	573.11
PAYROLL EXPENSES	11/01/2015 - 11/30/2015	GENERAL FUND	31,436.93
		WATER FUND	8,326.63
		WASTEWATER FUND	8,326.65
			48,090.21

Administrator Report:

Personnel Annual Review(s) - Update: Public Works Director Schildhauer conducted personnel performance reviews for Public Works Equipment Operators, Paul Wildermuth, Les Fennicle and Chris Mergen. Based on performance Administrator Weiland and PW Director Schildhauer are recommending the following merit increases; Paul Wildermuth currently $18.60 per hour recommend 2% increase to $18.97, Les Fenicle currently $23.22 per hour recommend 2% increase to $23.66, and Chris Megen currently $17.70 per hour recommend 2% increase to $18.05. Each effective to anniversary dates of November 11th, November 14th, and November 10th, respectively. We thank these employees for their hard work and for their service making our community better.

SE Sewer Extension Connection District: The City has identified approximately 70 properties to connect to the SE sewer extension. Notice of hearings will be published, and hearings will be held for the property owners the first part of 2016.

10th Street Project – DOT Community Access Grant: The City has successfully received a $400,000 Community Access Grant from the Department of Transportation for the 10th Street project. Administration is working with Lance Mayer (DGR) to distribute the grant proceeds across the project and determine how this will affect the property owners. City Administration plans to present a proposed assessment plan to the Council at the December 21st meeting. Following approval from the Council Administration will communicate these newly proposed assessments with the property owners and begin the assessment process.

Xcel Energy Community Grant: The City was successful at obtaining a grant award of $6,250.00 from Xcel Energy to assist the City with the costs associated with the construction of Quartzite Street. Administration applied for the annual grant in October and wanted to take the opportunity to provide Xcel with a thank you and recognition for their grant. Administration also wanted to ask the Council if they wanted to keep the grant for the City or potentially forward the funds to the Economic Development Corporation to cover their costs associated with Quartzite Street and their recent efforts to attract Midwest Fresh Logistics. Sommerfeld motioned to forward the funds to the Dell Rapids EDC, seconded by Geraets. Motion carried.

Motion to adjourn at 9:22 by Burggraff, second by Haak. Motion carried.

Jean Crowe
LOGOUT

SAM.gov will be down for scheduled maintenance Saturday 10/31/2015 from 6:00 PM to 11:30 PM (EDT).

Entity Dashboard

- Entity Overview
- Entity Record
- Core Data
- Assertions
- Reps & Certs
- POCs
- Reports
- Service Contract Report
- BioPreferred Report
- Exclusions
- Active Exclusions
- Inactive Exclusions
- Excluded Family Members

RETURN TO SEARCH

Dell Rapids, City Of
DUNS: 170381602 CAGE Code: 5HE93
Status: Active

302 E 4th St
Dell Rapids, SD, 57022-1926,
UNITED STATES

Expiration Date: 10/27/2016
Purpose of Registration: Federal Assistance Awards Only

Entity Overview

Entity Information

Name: Dell Rapids, City Of
Doing Business As: City Hall
Business Type: US Local Government
POC Name: Claire Baartman
Registration Status: Active
Activation Date: 10/28/2015
Expiration Date: 10/27/2016

Exclusions

Active Exclusion Records? No

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.

Facilities Plan
for
2016 Drinking Water
and
Clean Water Improvements

Dell Rapids, South Dakota

December 2015

DGR Project No. 662070

FACILITIES PLAN
FOR
2016 DRINKING WATER
AND
CLEAN WATER IMPROVEMENTS

DELL RAPIDS, SOUTH DAKOTA

I hereby certify that this plan, specification
or report was prepared by me or under my direct
supervision and that I am a duly
Registered Professional Engineer under the
laws of the State of South Dakota.

By_____

Gabriel, G Laber, P.E.
Registration No. 9236

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 9236
GABRIEL G. LABER
SOUTH DAKOTA
12/11/15

DGR Engineering

Rock Rapids, IA • Sioux Falls, SD • Sioux City, IA • Ankeny, IA

(712) 472-2531 (605) 339-4157 (712) 266-1554 (515) 963-3488

P:\06\62\070\662070\Doc\2016 DW & CW Facility Plan.docx

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INTRODUCTION

BACKGROUND INFORMATION

The City of Dell Rapids has authorized the preparation of this Facilities Plan to address the needs for improvements to the City's sanitary sewer, water main and storm sewer systems. This plan describes the utility infrastructure needs relating to these projects.

SCOPE OF WORK

The South Dakota Department of Transportation (SDDOT) plans to reconstruct SD Highway 115 through Dell Rapids in 2017. The City needs to replace their utilities in this area before the road is reconstructed.

There have been a number of water quality complaints over the last few years all along 10th Street and the nearby areas including the hospital. The City needs to replace the cast iron water main to correct this problem. There is also clay sanitary sewer and brick manholes that will be replaced at the same time.

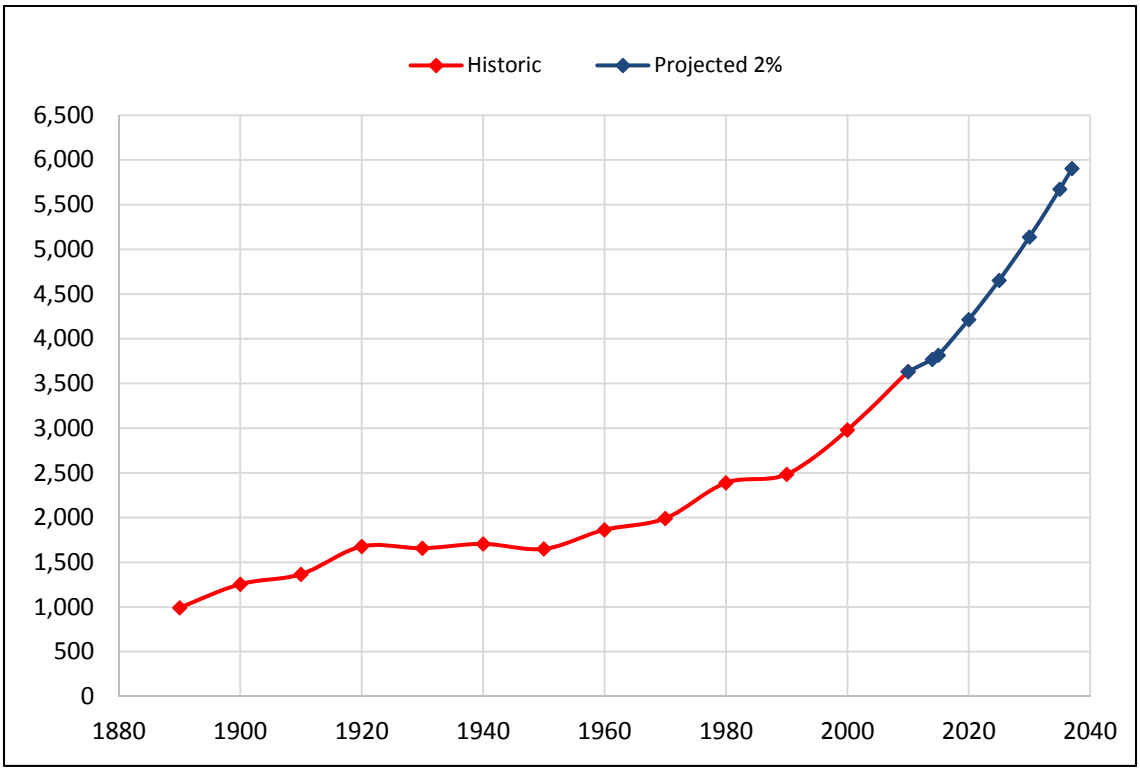
COMMUNITY INFORMATION

LOCATION

The City of Dell Rapids is located along South Dakota Highway 115 approximately twenty miles north of Sioux Falls, South Dakota and approximately three miles east of Interstate 29.

POPULATION STATISTICS

The 2010 census data indicated a population of 3,633 for Dell Rapids. The City has averaged a 1.9% growth rate between the years 1990 - 2010. Because of the proximity to Sioux Falls, it is felt that the population will continue to increase as the Sioux Falls Metropolitan area continues to grow. An average growth rate of 2.0% has been projected forward and shown in the following figure.



Population Trend

EXISTING AND FUTURE CONDITIONS

PROJECTED NEED AND PLANNING AREA IDENTIFICATION

SD Highway 115 Utility Improvements

The South Dakota Department of Transportation (SDDOT) plans to reconstruct SD Highway 115 through Dell Rapids from the Colton Road, approximately 2 miles south of Dell Rapids, to Interstate 29, approximately 3 miles west of Dell Rapids. The SDDOT plans to construct this project in two phases, the first taking place in 2016 from the Colton Road to the Big Sioux River and the second taking place in 2017 from the Big Sioux River to Interstate 29. In the 2017 portion, there are a number of old and dilapidated water mains and sanitary sewer mains that will be in the area of construction. The City plans to replace these utilities, along with improving the drainage in the adjacent area, to facilitate existing needs and reduce maintenance costs related to the age and condition of the existing infrastructure. Coordination with the SDDOT as part of their project will significantly reduce the costs to replace these utilities in the future.

10th Street

There have been a number of water quality complaints over the last few years all along 10th Street and the nearby areas including the hospital. Due to these issues, the City plans to replace the water mains in this area with new PVC along with performing sanitary sewer installation and replacement to facilitate the City's needs. Replacing these old asbestos cement and cast iron water mains along with replacing the existing brick manholes and vitrified clay pipe sanitary sewer mains will help reduce maintenance costs related to the age and condition of the existing infrastructure.

EXISTING WASTEWATER FLOWS

Historical wastewater flow data as measured at the main lift station that pumps all the City's wastewater to the treatment system was provided by the City for the years 2010 to 2015. This data is summarized in the following table.

Historic Wastewater Flows

	2010		2011		2012		2013		2014		2015	
	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow
Month	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)
January	0	0	6,287,000	202,806	5,039,000	162,548	5,566,000	179,548	5,261,000	169,710	5,172,000	166,839
February	0	0	6,208,000	221,714	2,344,700		5,260,000	187,857	4,754,000	169,786	4,512,000	161,143
March	0	0	10,395,000	346,500	6,212,000	200,387	5,802,000	187,161	5,804,000	187,226	5,506,000	177,613
April	0	0	9,715,000	323,833	6,692,000	223,067	5,553,000	191,483	5,356,000	178,533	5,323,000	177,433
May	936,000		10,091,000	336,367	9,510,000	306,774	6,190,000	199,677	5,372,000	179,067	6,114,000	197,226
June	3,702,000	123,400	9,018,000	322,071	7,309,000	243,633	6,545,000	218,167	9,147,000	304,900	5,813,000	200,448
July	6,349,000	204,806	14,935,000	481,774	6,224,000	200,774	5,746,000	185,355	5,492,000	196,143	5,987,000	206,448
August	7,671,000	247,452	8,939,000	288,355	5,891,000	190,032	5,531,000	178,419	5,800,000	187,097	6,390,000	206,129
September	17,142,000	591,103	2,049,000		5,391,000	179,700	4,999,000	166,633	5,312,000	183,172	5,201,000	185,750
October	8,292,000	267,484	0		5,319,000	177,300	5,212,000	168,129	5,258,000	169,613	5,592,000	180,387
November	7,117,000	237,233	3,244,000		5,225,000	174,167	5,058,000	168,600	5,057,000	168,567	5,503,000	189,759
December	6,824,000	220,129	5,770,000	186,129	5,341,000	172,290	5,273,000	170,097	5,275,000	170,161	1,667,000	
Total	58,033,000		86,651,000		70,497,700		66,735,000		67,888,000		62,780,000	
Average		270,230		301,061		202,788		183,427		188,665		186,289
Max Month		591,103		481,774		306,774		218,167		304,900		206,448

DGR ENGINEERING

A review of the main lift station records since May 2010 determined an average daily flow of 222,077 gpd. This results in an average per capita flow of 61 gallons per capita per day (gpcpd).

WASTEWATER EFFLUENT LIMITATIONS

This is a collection system project and therefore, will have no impact to the City's effluent limitations. The City is planning a separate treatment system project that will address their issues with effluent violations.

INFILTRATION AND INFLOW (I/I)

Infiltration and inflow (I&I) exists within all sanitary sewer systems. Wastewater that flows to a City's treatment system contains domestic waste, commercial waste and clear water. I&I is considered clear water. Infiltration is clear water that seeps through cracks and joints of pipe and manholes. Inflow is clear water that comes from sumps pumps, storm sewer inlets and roof drains that are connected to the sanitary sewer system. Clear water entering through open pick manholes is also considered inflow.

Chapter 1.C.2 of the South Dakota Recommended Design Criteria Manual states that "Projected wastewater flows for a community could be calculated by using 80 percent of the actual water consumption". It can be assumed that during the winter months of December, January and February that 100% of the metered water at the customer will go down the sewer because the customer isn't watering their lawn or washing vehicles. Historic metered water sales indicate an average metered water usage of 201,752 gpd or 53 gpcpd.

The amount of I&I that is going to the treatment system can be determined by comparing the billed water records to the main lift station records. Comparing these two numbers results in an I&I rate of 20,325 gpd (222,077 – 201,752).

There are no specific areas in town that create an abnormal amount of clear water intrusion; however, as the system ages, this situation is likely to worsen. In recent years, the City of Dell Rapids has replaced old sewer lines in the southern portion of town where infiltration and inflow

was known to be a problem. Such replacement projects have helped to reduce the infiltration and inflow into the City's sanitary sewer system. The City has an ordinance prohibiting the connection of a sump pump to the sanitary sewer collection system. This ordinance also prohibits any type of storm water collection system to discharge into the sanitary sewer collection system.

The City's sanitary sewer maintenance program includes scheduled jetting and cleaning of portions of the collection system. Flat sewer segments or troublesome areas are jetted every two to three months. Sewer segments with heavy flows at moderate grades are jetted annually. Sewer segments that have not historically accumulated debris are jetted every two or three years.

FUTURE WASTEWATER CONDITIONS

It is anticipated that the City of Dell Rapids will continue to grow based on their proximity to the City of Sioux Falls and the Interstate 90 and Interstate 29 corridor. The proposed improvements will reduce infiltration and inflow and provide more capacity to allow for growth.

The Population Statistics Section indicated a 2% annual population increase going forward. The projected wastewater flows based on this population growth are shown in the following table. The historic flows recorded at the main lift station indicated a per capita flow of 61 gpcpd. The amount of I&I was determined to be 20,325 gpd or 5 gpcpd. Chapter 1.C.2 of the South Dakota Recommended Design Criteria Manual states 75 gpcpd shall be used for communities with flows less than 1,000,000 gpd. Therefore, the calculated I&I rate will be increased to 14 gpcpd to bring the total flows to 75.

Wastewater Flows

	Current	Future
	2015	2035
Population	3,817	5,674
Wastewater Flow (gpcpd)	61	61
Infiltration & Inflow (gpd)	20,324	79,436
	253,161	425,550

EXISTING WATER USAGE

The City of Dell Rapids purchases all of their water from Minnehaha Community Water Corporation (MCWC). The historic water records for the years of 2011 through 2015 are shown in the following table.

Water Usage

	2011		2012				2013			
	Purchased		Purchased		Sold		Purchased		Sold	
	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow
Month	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)
January			7,041,000	227,129			7,013,000	226,226	6,060,400	195,497
February			6,413,000	221,138			6,372,000	227,571	5,519,700	197,132
March			6,752,000	217,806			6,705,000	216,290	5,262,500	169,758
April			7,287,000	242,900			6,435,000	214,500	5,659,300	188,643
May			8,468,000	273,161			7,687,000	247,968	5,286,900	170,545
June			11,500,000	383,333			8,444,000	281,467	7,645,100	254,837
July			16,030,000	517,097	12,582,600	405,890	13,381,000	431,645	10,626,500	342,790
August			10,751,000	346,806	11,807,900	380,900	11,627,000	375,065	10,450,000	337,097
September	8,323,000	277,433	9,994,000	333,133	9,447,000	314,900	9,997,000	333,233	11,392,000	379,733
October	7,567,000	244,097	7,892,000	254,581	8,046,400	259,561	7,329,000	236,419	6,996,700	225,700
November	6,319,000	210,633	6,546,000	218,200	6,006,800	200,227	6,419,000	213,967	5,871,700	195,723
December	6,677,000	215,387	6,671,000	215,194	8,640,000	278,710	6,559,000	211,581	5,541,300	178,752
Total	28,886,000		105,345,000		56,530,700		97,968,000		86,312,100	
Average (gpd)		236,888		287,540		306,698		267,994		236,351
Average (gpcpd)		65		78		84		72		64
Max Month	8,323,000		16,030,000		12,582,600		13,381,000		11,392,000	
Water Loss (%)							12%			

	2014				2015			
	Purchased		Sold		Purchased		Sold	
	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow	Total Flow	Ave Flow
Month	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)	(gal)	(gpd)
January	6,523,000	210,419	6,020,600	194,213	6,921,000	223,258	5,840,700	188,410
February	6,057,000	216,321	5,673,100	202,611	5,952,000	212,571	5,664,600	202,307
March	6,857,000	221,194	5,161,500	166,500	6,609,000	213,194	5,132,600	165,568
April	7,112,000	237,067	5,769,200	192,307	6,850,000	228,333	6,121,200	204,040
May	8,622,000	278,129	6,081,900	196,190	8,464,000	273,032	7,259,600	234,181
June	8,059,000	268,633	7,615,400	253,847	8,899,000	296,633	7,712,900	257,097
July	13,222,000	426,516	9,950,400	320,981	11,053,000	356,548	9,247,800	298,316
August	10,165,000	327,903	10,599,900	341,932	9,116,000	294,065	9,445,100	304,681
September	7,577,000	252,567	7,255,200	241,840	8,597,000	286,567	8,325,200	277,507
October	7,096,000	228,903	5,940,900	191,642	7,318,000	236,065	6,899,900	222,577
November	6,465,000	215,500	5,895,700	196,523	6,170,000	205,667	5,815,900	193,863
December	6,630,000	213,871	5,522,300	178,139	1,931,000	62,290		
Total	94,385,000		81,486,100		87,880,000		77,465,500	
Average (gpd)		258,085		223,060		256,903		231,686
Average (gpcpd)		69		60		68		61
Max Month	13,222,000		10,599,900		11,053,000		9,445,100	
Water Loss (%)	14%				10%			

Based on the historic records the water purchased average 71 gpcpd. This is slightly lower than the average of 81 gpcpd that is stated by Mays in the Water Distribution Systems Handbook. The table also indicates the average water loss is 12% which is under the industry recommended maximum of 15%.

EVALUATION OF DISTRIBUTION, STORAGE AND TREATMENT SYSTEMS

The City of Dell Rapids does not operate a water treatment system. The water supply for the City of Dell Rapids is secured from MCWC and delivered to the City by means of a dedicated main line from the rural water system's water treatment plant located to the south and west of the City. The City of Dell Rapids is currently contracted with MCWC for a maximum of 730 gpm which results in 1,051,200 gpd. The historic peak day purchased by the City was 628,000 gpd. The current contract with MCWC is adequate to meet the peak day demand.

The City constructed a new 500,000 gallon elevated storage tank at the southwest corner of 15th Street and Clark Avenue in 2004. Therefore, the water storage does not to be addressed.

The City has several areas of the water distribution system that consist of cast iron and asbestos cement. These projects will continue to be implemented to replace these outdated lines with new PVC.

WATER COMPLIANCE ISSUES

Currently, the City does not have any compliance issues with the water system.

FUTURE WATER CONDITIONS

It is anticipated that the City of Dell Rapids will continue to grow based on their proximity to the City of Sioux Falls and the Interstate 90 and Interstate 29 corridor. The proposed improvements will replace cast iron water main which will improve the capacity of the system and reduce maintenance.

The Population Statistics Section indicated a 2% annual population increase going forward. Based on this growth an average day usage of 402,854gpd (5,674 x 71) can be projected. The peak day also needs to be calculated. The Water Distribution Systems Handbook by Mays states that the U.S. range of maximum day to average day is 1.5 – 3.5:1. A review of the historic water usage records determined a recommended peaking factor of 2.48. This results in a future peak day of

999,078 gal (2.48 x 71 x 5,674). The current contract with MCWC is adequate to meet the future peak day demand.

DEVELOPMENT OF ALTERNATIVES

DEVELOPMENT OF ALTERNATIVES

The following alternatives were development to correct the deficiencies that were identified. Each alternative includes a description of the project, location map, cost estimate and present worth analysis. The cost estimates include construction, contingencies, engineering, testing, legal and financing.

PRESENT WORTH ANALYSIS

When analyzing the capital cost for each alternate, it is also worthwhile to consider the present worth analysis. The reason for this is because the lowest capital cost alternative may not be the most cost effective when operation and maintenance are taken into consideration. In addition, the SD DENR requires that a present worth analysis be completed for each alternative. For the purpose of this plan, the present worth analysis considers the capital cost, salvage value, and operation and maintenance over a 20 year period with an interest rate of 3%.

ALTERNATIVE #1 - NO ACTION

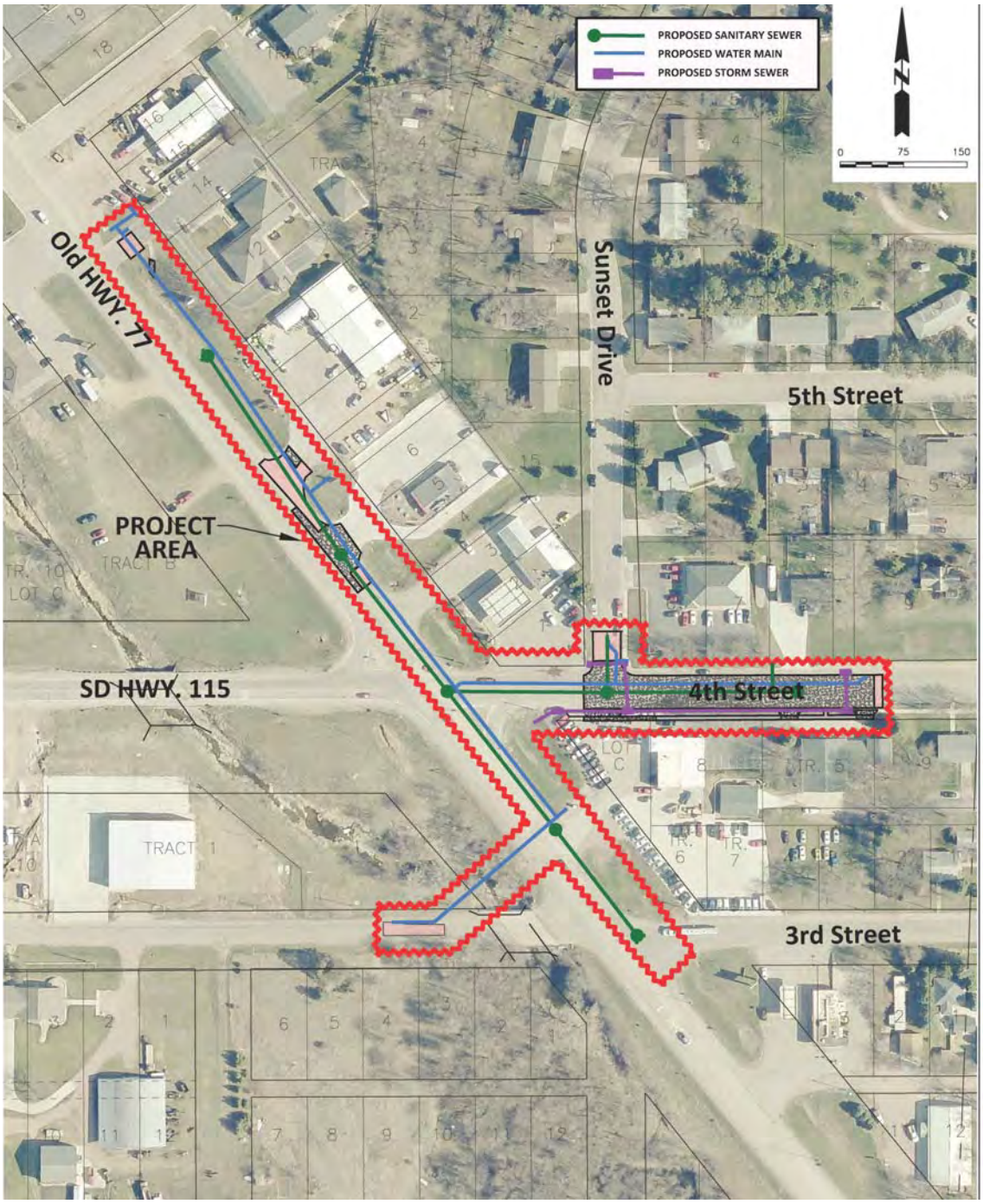
The “No Action” alternative would consist of no improvements at this time and would not correct any of the deficiencies with the existing utilities.

ALTERNATIVE #2 – SD HIGHWAY 115 UTILITY IMPROVEMENTS

The old cast iron water mains in this area will be replaced with approximately 1,900 feet of new 6” and 8” C900 DR18 water main pipe and will be installed by open-cut-trenching. Due to the presence of bedrock, blasting and rock excavation may be required. Installation of this main will begin on the west side of Rocky Run Creek at 3rd Street, cross the waterway, and will tie into existing lines on 4th Street, Sunset Drive, and Spring Meadow Drive.

A proposed 12” PVC sanitary sewer with appurtenances is planned to be installed by open-cut trenching. Due to the presence of bedrock, blasting may be required. Installation of the sanitary

sewer will begin at the intersection of 3rd Street and SD Highway 115 and continue north approximately 900 feet along SD115 and Old 77 and another 500 feet east on 4th Street. The following pages show a general location of the proposed improvements, cost estimate and present worth analysis for this alternative.



SD Highway 115 Utility Improvements

Cost Estimate for Alternative #2

Item		Est		Unit	Total	CW SRF Eligible		DW SRF Eligible		SRF Ineligible	
Number	Description	Qty	Unit	Cost	Cost	UNITS	TOTAL	UNITS	TOTAL	UNITS	TOTAL
1	Mobilization	1	L.S.	45,000.00	45,000.00	0.53	24,030.00	0.402	18,090.00	0.064	2,880.00
2	Traffic Control	1	L.S.	10,000.00	10,000.00	0.50	5,000.00	0.50	5,000.00	0.00	0.00
3	Remove, Sawcut, and Dispose of Pavement	3,300	SQYD	5.00	16,500.00	1,762	8,811.00	1,327	6,633.00	211	1,056.00
4	Remove Existing Utilities	1	L.S.	10,000.00	10,000.00	0.50	5,000.00	0.50	5,000.00	0.00	0.00
5	Clear and Grub Tree	6	EACH	500.00	3,000.00	0	0.00	6	3,000.00	0	0.00
6	Incidental Work (Grading)	1	L.S.	5,000.00	5,000.00	0.53	2,670.00	0.40	2,010.00	0.06	320.00
7	Incidental Work (Utilities)	1	L.S.	5,000.00	5,000.00	0.50	2,500.00	0.50	2,500.00	0.00	0.00
8	Unclassified Excavation	1,100	CUYD	8.00	8,800.00	587	4,699.20	442	3,537.60	70	563.20
9	Contractor Furnished Select Fill	250	CUYD	10.00	2,500.00	125	1,250.00	125	1,250.00	0	0.00
10	Rock Excavation	200	CUYD	350.00	70,000.00	100	35,000.00	100	35,000.00	0	0.00
11	6" Scarify and Recompact Subgrade	3,100	SQYD	2.00	6,200.00	1,655	3,310.80	1,246	2,492.40	198	396.80
12	Aggregrate Base Course	1,700	TON	15.00	25,500.00	908	13,617.00	683	10,251.00	109	1,632.00
13	Geotextile Fabric	1,000	SY	3.00	3,000.00	534	1,602.00	402	1,206.00	64	192.00
14	Asphalt Concrete Composite	220	TON	100.00	22,000.00	110	11,000.00	110	11,000.00	0	0.00
15	8" Non Reinforced Concrete Pavement	1,900	SY	45.00	85,500.00	713	32,062.50	713	32,062.50	475	21,375.00
16	Dowel Bars	1,200	EACH	10.00	12,000.00	450	4,500.00	450	4,500.00	300	3,000.00
17	8" Curb and Gutter	710	L.FT	20.00	14,200.00	710	14,200.00	0	0.00	0	0.00
18	6" Curb and Gutter	110	L.FT	15.00	1,650.00	110	1,650.00	0	0.00	0	0.00
19	6" Concrete (Driveway/Approach)	200	SY	40.00	8,000.00	0	0.00	0	0.00	200	8,000.00
20	4" Concrete Sidewalk	1,000	SQFT	4.00	4,000.00	0	0.00	0	0.00	1,000	4,000.00
21	6" Concrete Sidewalk	820	SQFT	5.00	4,100.00	0	0.00	0	0.00	820	4,100.00
22	Storm Sewer RCP	600	L.FT	100.00	60,000.00	600	60,000.00	0	0.00	0	0.00
23	Inlets and Junction Boxes	6	EACH	3,000.00	18,000.00	6	18,000.00	0	0.00	0	0.00
24	Connect to Existing Storm Sewer	1	EACH	500.00	500.00	1	500.00	0	0.00	0	0.00
25	Granular Material	600	TON	10.00	6,000.00	600	6,000.00	0	0.00	0	0.00
26	6" C900 DR 18 Water Main w/Bedding Material	160	L.FT	25.00	4,000.00	0	0.00	160	4,000.00	0	0.00
27	8" C900 DR 18 Water Main w/Bedding Material	1,500	L.FT	30.00	45,000.00	0	0.00	1,500	45,000.00	0	0.00
28	8" Restrained Joint Water Main w/Bedding Material	200	L.FT	40.00	8,000.00	0	0.00	200	8,000.00	0	0.00
29	6" MJ Gate Valve/Box	5	EACH	1,300.00	6,500.00	0	0.00	5	6,500.00	0	0.00
30	8" MJ Gate Valve/Box	9	EACH	1,600.00	14,400.00	0	0.00	9	14,400.00	0	0.00
31	6" MJ Long Sleeve	5	EACH	400.00	2,000.00	0	0.00	5	2,000.00	0	0.00
32	6" MJ Bend	2	EACH	400.00	800.00	0	0.00	2	800.00	0	0.00
33	8" MJ Bend	8	EACH	500.00	4,000.00	0	0.00	8	4,000.00	0	0.00
34	6"x6" MJ Tee	1	EACH	450.00	450.00	0	0.00	1	450.00	0	0.00
35	8"x6" MJ Tee	4	EACH	500.00	2,000.00	0	0.00	4	2,000.00	0	0.00
36	8"x8" MJ Tee	4	EACH	550.00	2,200.00	0	0.00	4	2,200.00	0	0.00
37	8"x6" MJ Reducer	5	EACH	500.00	2,500.00	0	0.00	5	2,500.00	0	0.00
38	8" MJ Cap	1	EACH	250.00	250.00	0	0.00	1	250.00	0	0.00
39	Standard Hydrant	4	EACH	3,000.00	12,000.00	0	0.00	4	12,000.00	0	0.00
40	Connect to Existing Water Main	5	EACH	1,000.00	5,000.00	0	0.00	5	5,000.00	0	0.00
41	Water Service	8	EACH	2,500.00	20,000.00	0	0.00	8	20,000.00	0	0.00
42	8" PVC Sanitary Sewer w/Bedding Material	500	L.FT	40.00	20,000.00	500	20,000.00	0	0.00	0	0.00
43	12" PVC Sanitary Sewer w/Bedding Material	900	L.FT	50.00	45,000.00	900	45,000.00	0	0.00	0	0.00
44	48" Sanitary Manhole w/ Frame and Lid	7	EACH	4,000.00	28,000.00	7	28,000.00	0	0.00	0	0.00
45	Sanitary Sewer Service	7	EACH	2,500.00	17,500.00	7	17,500.00	0	0.00	0	0.00
46	PVC Sewer Wye	7	EACH	200.00	1,400.00	7	1,400.00	0	0.00	0	0.00
47	Connect to Existing Sanitary Sewer	6	EACH	500.00	3,000.00	6	3,000.00	0	0.00	0	0.00
48	Topsoil and Terrace Grading	1	L.S.	20,000.00	20,000.00	0.50	10,000.00	0.50	10,000.00	0.00	0.00
49	Seeding and Erosion Control	1	L.S.	30,000.00	30,000.00	0.50	15,000.00	0.50	15,000.00	0.00	0.00
				Subtotal:	$740,450.00		395,302.50		297,632.50		47,515.00
				Contingencies (20%):	$148,550.00		79,325.70		59,717.10		9,507.20
				Construction Subtotal:	**$889,000.00**		**474,628.20**		**357,349.60**		**57,022.20**
				Engineering & Admin:	$178,000.00		95,052.00		71,556.00		11,392.00
				Geotechnical/Testing Services:	$18,000.00		9,612.00		7,236.00		1,152.00
				Admin/Legal (2%):	$18,000.00		9,612.00		7,236.00		1,152.00
				Financing (5%):	$44,000.00		23,496.00		17,688.00		2,816.00
				Miscellaneous:	$9,000.00		4,806.00		3,618.00		576.00
				Total Estimated Project Cost:	**$1,156,000.00**		**617,206.20**		**464,683.60**		**74,110.20**

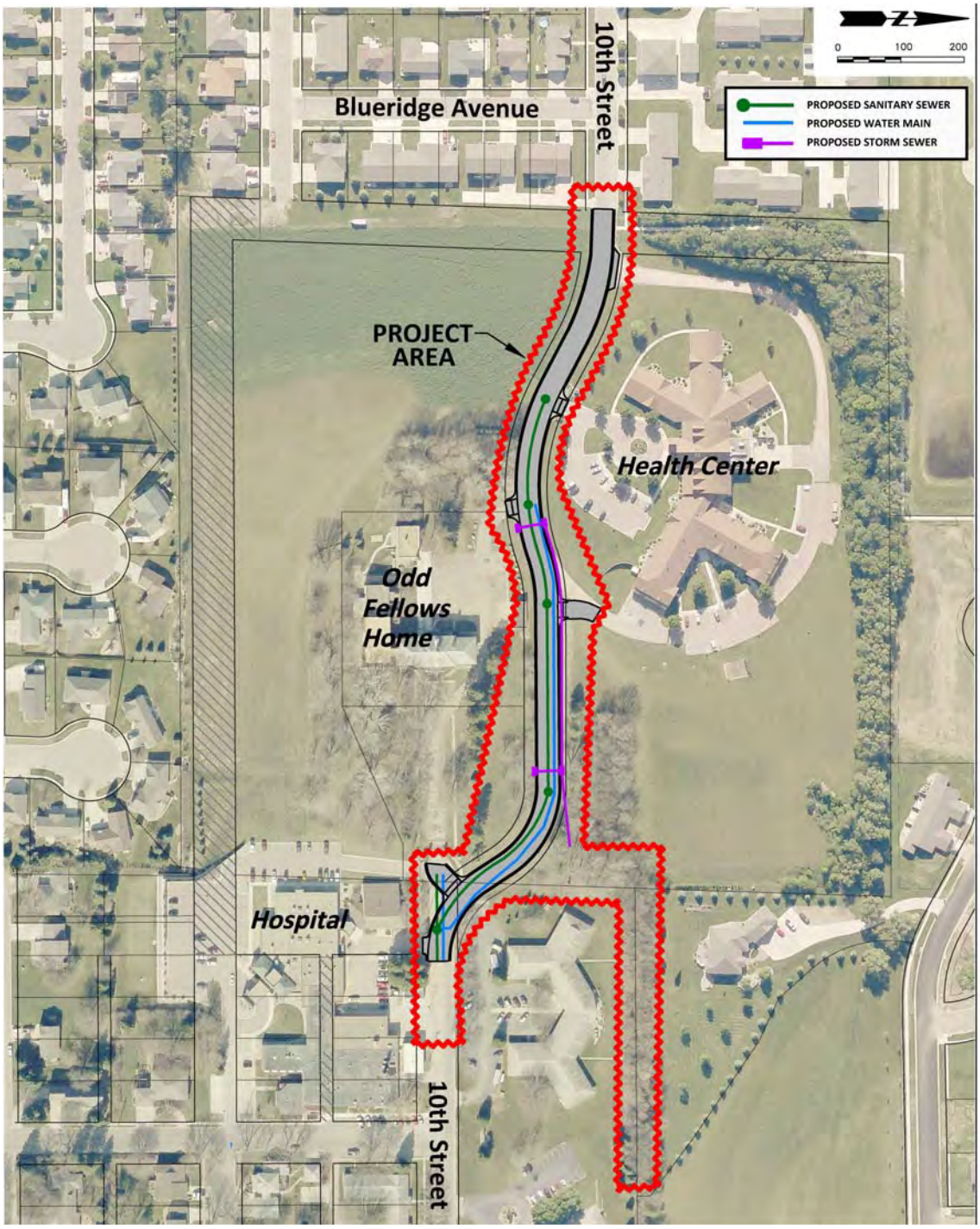
DGR ENGINEERING

Present Worth for Alternative #2

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$45,000	$0	$0	$45,000
Traffic Control	$10,000	$0	$0	$10,000
Remove, Sawcut, and Dispose of Pavement	$16,500	$0	$0	$16,500
Remove Existing Utilities	$10,000	$0	$0	$10,000
Clear and Grub Tree	$3,000	$0	$0	$3,000
Incidental Work (Grading)	$5,000	$0	$0	$5,000
Incidental Work (Utilities)	$5,000	$0	$0	$5,000
Unclassified Excavation	$8,800	$0	$0	$8,800
Contractor Furnished Select Fill	$2,500	$0	$0	$2,500
Rock Excavation	$70,000	$0	$0	$70,000
6" Scarify and Recompact Subgrade	$6,200	$0	$0	$6,200
Aggregrate Base Course	$25,500	$15,300	$8,471	$17,029
Geotextile Fabric	$3,000	$1,800	$997	$2,003
Asphalt Concrete Composite	$22,000	$13,200	$7,309	$14,691
8" Non Reinforced Concrete Pavement	$85,500	$51,300	$28,404	$57,096
Dowel Bars	$12,000	$7,200	$3,986	$8,014
8" Curb and Gutter	$14,200	$8,520	$4,717	$9,483
6" Curb and Gutter	$1,650	$990	$548	$1,102
6" Concrete (Driveway/Approach)	$8,000	$4,800	$2,658	$5,342
4" Concrete Sidewalk	$4,000	$2,400	$1,329	$2,671
6" Concrete Sidewalk	$4,100	$2,460	$1,362	$2,738
Storm Sewer RCP	$60,000	$36,000	$19,932	$40,068
Inlets and Junction Boxes	$18,000	$10,800	$5,980	$12,020
Connect to Existing Storm Sewer	$500	$0	$0	$500
Granular Material	$6,000	$3,600	$1,993	$4,007
6" C900 DR 18 Water Main w/Bedding Material	$4,000	$2,400	$1,329	$2,671
8" C900 DR 18 Water Main w/Bedding Material	$45,000	$27,000	$14,949	$30,051
8" Restrained Joint Water Main w/Bedding Material	$8,000	$4,800	$2,658	$5,342
6" MJ Gate Valve/Box	$6,500	$3,900	$2,159	$4,341
8" MJ Gate Valve/Box	$14,400	$8,640	$4,784	$9,616
6" MJ Long Sleeve	$2,000	$1,200	$664	$1,336
6" MJ Bend	$800	$480	$266	$534
8" MJ Bend	$4,000	$2,400	$1,329	$2,671
6"x6" MJ Tee	$450	$270	$149	$301
8"x6" MJ Tee	$2,000	$1,200	$664	$1,336
8"x8" MJ Tee	$2,200	$1,320	$731	$1,469
8"x6" MJ Reducer	$2,500	$1,500	$831	$1,669
8" MJ Cap	$250	$150	$83	$167
Standard Hydrant	$12,000	$7,200	$3,986	$8,014
Connect to Existing Water Main	$5,000	$0	$0	$5,000
Water Service	$20,000	$12,000	$6,644	$13,356
8" PVC Sanitary Sewer w/Bedding Material	$20,000	$12,000	$6,644	$13,356
12" PVC Sanitary Sewer w/Bedding Material	$45,000	$27,000	$14,949	$30,051
48" Sanitary Manhole w/ Frame and Lid	$28,000	$16,800	$9,302	$18,698
Sanitary Sewer Service	$17,500	$10,500	$5,814	$11,686
PVC Sewer Wye	$1,400	$840	$465	$935
Connect to Existing Sanitary Sewer	$3,000	$0	$0	$3,000
Topsoil and Terrace Grading	$20,000	$0	$0	$20,000
Seeding and Erosion Control	$30,000	$0	$0	$30,000
Remaining Capital Costs	$415,550	$0	$0	$415,550
Total Construction Cost	**$1,156,000**	**$299,970**	**$166,086**	**$989,914**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,000			$14,877
Supplies	$750			$11,158
Utilities	$0			$0
Labor	$2,000			$29,755
Total Annual Cost	**$3,750**			**$55,791**
			Total Net Present Worth	**$1,045,704**

ALTERNATIVE #3 – 10th STREET

Just over 800 feet of old cast iron water main and appurtenances (over 80 years old in some areas) will be replaced with a combination of new 6" and 8" C900 DR18 water main pipe. Approximately 1,000 feet of the existing vitrified clay sanitary sewer pipe and brick manholes will also be replaced along with providing drainage improvements as needed in this area. The existing asphalt street surfacing will be removed to install these utilities by open trench methods. The asphalt will be replaced to depths similar to that of the existing surfacing. The following pages show a general location of the proposed improvements, cost estimate and present worth analysis for this alternative.



10th Street Improvements

Cost Estimate for Alternative #3

Item		Est		Unit	Total	CW SRF Eligible		DW SRF Eligible		SRF Ineligible	
Number	Description	Qty	Unit	Cost	Cost	UNITS	TOTAL	UNITS	TOTAL	UNITS	TOTAL
1	Mobilization	1	L.S.	50,000.00	50,000.00	0.32	16,000.00	0.28	14,000.00	0.40	20,000.00
2	Traffic Control	1	L.S.	6,000.00	6,000.00	0.50	3,000.00	0.50	3,000.00	0.00	0.00
3	Remove, Sawcut, & Dispose of Existing Pvmt	3,400	SQYD	5.00	17,000.00	1,088	5,440.00	952	4,760.00	1,360	6,800.00
4	Clearing - Tree Removal	1	L.S.	15,000.00	15,000.00	0.32	4,800.00	0.28	4,200.00	0.40	6,000.00
5	Incidental Work (Grading)	1	L.S.	5,000.00	5,000.00	0.32	1,600.00	0.28	1,400.00	0.40	2,000.00
6	Incidental Work (Utilities)	1	L.S.	5,000.00	5,000.00	0.32	1,600.00	0.28	1,400.00	0.40	2,000.00
7	Unclassified Excavation	4,400	CUYD	5.00	22,000.00	1,408	7,040.00	1,232	6,160.00	1,760	8,800.00
8	Unclassified Excavation - Grade Stabilization	250	CUYD	8.00	2,000.00	80	640.00	70	560.00	100	800.00
9	8" Scarify and Recompact	6,000	SQYD	1.00	6,000.00	1,920	1,920.00	1,680	1,680.00	2,400	2,400.00
10	Geotextile Fabric	3,000	SQYD	3.00	9,000.00	960	2,880.00	840	2,520.00	1,200	3,600.00
11	Aggregate Base Course	4,200	TON	15.00	63,000.00	1,344	20,160.00	1,176	17,640.00	1,680	25,200.00
12	6" Concrete Pavement (Fillet/Valley Gutter)	130	SQYD	70.00	9,100.00	42	2,912.00	36	2,548.00	52	3,640.00
13	6" Concrete Pavement (Driveway Approach)	130	SQYD	50.00	6,500.00	42	2,080.00	36	1,820.00	52	2,600.00
14	Asphalt Concrete Composite	1,650	TON	80.00	132,000.00	528	42,240.00	462	36,960.00	660	52,800.00
15	Curb and Gutter - 6" Thick	2,600	L.FT	15.00	39,000.00	2,600	39,000.00	0	0.00	0	0.00
16	4" Concrete Sidewalk	13,000	SQFT	4.00	52,000.00	0	0.00	0	0.00	13,000	52,000.00
17	6" Concrete Sidewalk	630	SQFT	6.00	3,780.00	0	0.00	0	0.00	630	3,780.00
18	Detectable Warning Panel	70	SQFT	60.00	4,200.00	0	0.00	0	0.00	70	4,200.00
19	RECON Retaining Wall	1,200	SQFT	55.00	66,000.00	0	0.00	0	0.00	1,200	66,000.00
20	Salvage/Furnish and Place Topsoil	900	CUYD	10.00	9,000.00	288	2,880.00	252	2,520.00	360	3,600.00
21	Permanent Seeding (Quality Green Turf Mix)	300	LB	15.00	4,500.00	96	1,440.00	84	1,260.00	120	1,800.00
22	Hydromulching	2	TON	2,500.00	5,500.00	1	1,760.00	1	1,540.00	1	2,200.00
23	Temporary low flow silt fence	1,000	L.FT	5.00	5,000.00	320	1,600.00	280	1,400.00	400	2,000.00
24	Silt fence inlet protection	4	EACH	100.00	400.00	1	128.00	1	112.00	2	160.00
25	Inlet protection	4	EACH	100.00	400.00	1	128.00	1	112.00	2	160.00
26	Vehicle tracking control	2	EACH	1,000.00	2,000.00	1	640.00	1	560.00	1	800.00
27	9" erosion control wattles	100	L.FT	5.00	500.00	32	160.00	28	140.00	40	200.00
28	Drainage Ditch	600	L.FT	40.00	24,000.00	600	24,000.00	0	0.00	0	0.00
29	24" RCP, CL3	64	L.FT	70.00	4,480.00	64	4,480.00	0	0.00	0	0.00
30	24" RCP, CL3 FES	1	EACH	700.00	700.00	1	700.00	0	0.00	0	0.00
31	18" RCP, CL3	480	L.FT	60.00	28,800.00	480	28,800.00	0	0.00	0	0.00
32	15" RCP, CL3	40	L.FT	50.00	2,000.00	40	2,000.00	0	0.00	0	0.00
33	Inlets and Junction Boxes	4	EACH	3,000.00	12,000.00	4	12,000.00	0	0.00	0	0.00
34	Granular Material	150	TON	15.00	2,250.00	150	2,250.00	0	0.00	0	0.00
35	6" C900 DR18 Water Main	1,020	L.FT	26.00	26,520.00	0	0.00	1,020	26,520.00	0	0.00
36	6" Water Main Bedding Material	1,020	L.FT	4.00	4,080.00	0	0.00	1,020	4,080.00	0	0.00
37	6" MJ Gate Valve/Box	9	EACH	1,200.00	10,800.00	0	0.00	9	10,800.00	0	0.00
38	6" MJ Bends	4	EACH	350.00	1,400.00	0	0.00	4	1,400.00	0	0.00
39	6"x6" MJ Tee	7	EACH	500.00	3,500.00	0	0.00	7	3,500.00	0	0.00
40	6" MJ Cap/Plug	2	EACH	250.00	500.00	0	0.00	2	500.00	0	0.00
41	6" MJ Long Sleeve	2	EACH	350.00	700.00	0	0.00	2	700.00	0	0.00
42	Standard Fire Hydrant	3	EACH	3,200.00	9,600.00	0	0.00	3	9,600.00	0	0.00
43	Trench Stabilization Material	20	TON	30.00	600.00	0	0.00	20	600.00	0	0.00
44	Connect to Existing Water Main	4	EACH	1,000.00	4,000.00	0	0.00	4	4,000.00	0	0.00
45	8" PVC Sanitary Sewer w/Bedding Material	1,000	L.FT	40.00	40,000.00	1,000	40,000.00	0	0.00	0	0.00
46	48" Sanitary Manhole w/ Frame and Lid	4	EACH	4,000.00	16,000.00	4.00	16,000.00	0.00	0.00	0.00	0.00
47	Connect to Existing Sanitary Sewer	3	EACH	1,000.00	3,000.00	3.00	3,000.00	0.00	0.00	0.00	0.00
				Subtotal:	$734,810.00		293,278.00		167,992.00		273,540.00
				Contingencies (10%):	$74,190.00		29,676.00		17,063.70		27,450.30
				Construction Subtotal:	**$809,000.00**		**322,954.00**		**185,055.70**		**300,990.30**
				Engineering & Admin:	$161,000.00		64,400.00		37,030.00		59,570.00
				Geotechnical/Testing Services:	$16,000.00		6,400.00		3,680.00		5,920.00
				Admin/Legal (2%):	$16,000.00		6,400.00		3,680.00		5,920.00
				Financing (5%):	$40,000.00		16,000.00		9,200.00		14,800.00
				Miscellaneous:	$8,000.00		3,200.00		1,840.00		2,960.00
				Total Estimated Project Cost:	**$1,050,000.00**		**419,354.00**		**240,485.70**		**390,160.30**

DGR ENGINEERING

Present Worth for Alternative #3

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$50,000	$0	$0	$50,000
Traffic Control	$6,000	$0	$0	$6,000
Remove, Sawcut, & Dispose of Existing Pvmt	$17,000	$0	$0	$17,000
Clearing - Tree Removal	$15,000	$0	$0	$15,000
Incidental Work (Grading)	$5,000	$0	$0	$5,000
Incidental Work (Utilities)	$5,000	$0	$0	$5,000
Unclassified Excavation	$22,000	$0	$0	$22,000
Unclassified Excavation - Grade Stabilization	$2,000	$0	$0	$2,000
8" Scarify and Recompact	$6,000	$0	$0	$6,000
Geotextile Fabric	$9,000	$5,400	$2,990	$6,010
Aggregate Base Course	$63,000	$37,800	$20,929	$42,071
6" Concrete Pavement (Fillet/Valley Gutter)	$9,100	$5,460	$3,023	$6,077
6" Concrete Pavement (Driveway Approach)	$6,500	$3,900	$2,159	$4,341
Asphalt Concrete Composite	$132,000	$79,200	$43,851	$88,149
Curb and Gutter - 6" Thick	$39,000	$23,400	$12,956	$26,044
4" Concrete Sidewalk	$52,000	$31,200	$17,275	$34,725
6" Concrete Sidewalk	$3,780	$2,268	$1,256	$2,524
Detectable Warning Panel	$4,200	$2,520	$1,395	$2,805
RECON Retaining Wall	$66,000	$39,600	$21,926	$44,074
Salvage/Furnish and Place Topsoil	$9,000	$0	$0	$9,000
Permanent Seeding (Quality Green Turf Mix)	$4,500	$0	$0	$4,500
Hydromulching	$5,500	$0	$0	$5,500
Temporary low flow silt fence	$5,000	$0	$0	$5,000
Silt fence inlet protection	$400	$0	$0	$400
Inlet protection	$400	$0	$0	$400
Vehicle tracking control	$2,000	$0	$0	$2,000
9" erosion control wattles	$500	$0	$0	$500
Drainage Ditch	$24,000	$14,400	$7,973	$16,027
24" RCP, CL3	$4,480	$2,688	$1,488	$2,992
24" RCP, CL3 FES	$700	$420	$233	$467
18" RCP, CL3	$28,800	$17,280	$9,568	$19,232
15" RCP, CL3	$2,000	$1,200	$664	$1,336
Inlets and Junction Boxes	$12,000	$7,200	$3,986	$8,014
Granular Material	$2,250	$1,350	$747	$1,503
6" C900 DR18 Water Main	$26,520	$15,912	$8,810	$17,710
6" Water Main Bedding Material	$4,080	$2,448	$1,355	$2,725
6" MJ Gate Valve/Box	$10,800	$6,480	$3,588	$7,212
6" MJ Bends	$1,400	$840	$465	$935
6"x6" MJ Tee	$3,500	$2,100	$1,163	$2,337
6" MJ Cap/Plug	$500	$0	$0	$500
6" MJ Long Sleeve	$700	$420	$233	$467
Standard Fire Hydrant	$9,600	$5,760	$3,189	$6,411
Trench Stabilization Material	$600	$0	$0	$600
Connect to Existing Water Main	$4,000	$0	$0	$4,000
8" PVC Sanitary Sewer w/Bedding Material	$40,000	$24,000	$13,288	$26,712
48" Sanitary Manhole w/ Frame and Lid	$16,000	$9,600	$5,315	$10,685
Connect to Existing Sanitary Sewer	$3,000	$0	$0	$3,000
Remaining Capital Costs	$315,190	$0	$0	$315,190
Total Construction Cost	**$1,050,000**	**$342,846**	**$189,826**	**$860,174**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$1,000			$14,877
Supplies	$750			$11,158
Utilities	$0			$0
Labor	$2,000			$29,755
Total Annual Cost	**$3,750**			**$55,791**
			Total Net Present Worth	**$915,965**

EVALUATION OF ALTERNATIVES

ALTERNATIVE EVALUATION

Alternative #1 – No Action is not recommended. This alternative will not address any of the negative deficiencies that were identified.

Alternative #2 – SD Highway 115 Utility Improvements is recommended. This alternative will replaced the utilities that have outlived their useful life before the SD DOT reconstructs the road. Replacement of these utilities prior to the SD DOT project will also save the City money because most of the surfacing repairs will be addressed with the SD DOT project.

Alternative #3 – 10th Street Improvements is recommended. Replacement of the cast iron water main will help address water complaint issues. The clay pipe and brick manholes will also be replaced and will reduce I&I.

EVALUATION OF MONETARY COSTS

A summary of the project costs for the recommended alternatives are shown in the following table.

Total Project Cost Summary

Alternative	CW SRF	DW SRF	Ineligible	Total
#2 - SD HWY 115 Utility Imp	$617,000	$465,000	$74,000	$1,156,000
#3 - 10th Street Improvements	$420,000	$240,000	$390,000	$1,050,000
	$1,037,000	$705,000	$464,000	$2,206,000

DEMONSTRATION OF FINANCIAL CAPACITY

The City plans to increase both water and sewer rates to assist with financing this project. Further information on project financing and utility rates may be found in the application.

CAPITAL FINANCING PLAN

Payment for the proposed improvements will be by a combination of loan monies and local funds. The City has not received any funding (grants, etc.) to date for these projects; however, any grants or principal forgiveness received would offset the amount of loans needed to fund these projects. For estimating purposes, the table below showing repayment options does not include any grant funds.

Capital Financing Plan

Funding Source	CW SRF
Local Cash	$464,000
CW SRF Loan	$1,037,000
DW SRF Loan	$705,000
Grant Money	$0
	$2,206,000

ENVIRONMENTAL EVALUATION

Environmental Information

Climate: Because of its mid-continental position and its location near the paths of many cyclonic storms, eastern South Dakota has a markedly continental climate with extreme summer heat, extreme winter cold, and rapid fluctuation of temperature. Temperatures of 100 degrees Fahrenheit or more are not uncommon during summer months, but as they are ordinarily accompanied by low humidity, they are less oppressive than are such temperatures in the States farther east. Temperatures fall below zero frequently from December to February, and at times these low temperatures are accompanied by strong winds. The average annual precipitation for the area is 26.0 inches.

Topography: The terrain in and near the City generally slopes from the north to the south towards the Big Sioux River.

Geology and Soils: The majority of the area is dominated by the La Prairie silt loam along with Moody and Moody-Nora silty clay loams as identified by the Soil Conservation Service. The La Prairie silt loam is a moderately well drained, medium textured soil in alluvial sediments on nearly level flood plains. It has a substratum of stratified sand, silt, and gravel and is subject to flooding. The Moody silty clay loam is a well-drained, medium-textured and moderately fine textured soil in loess on uplands. It has a substratum of silt loam but in places rock is at a depth of about 40 inches. This soil is subject to runoff and erosion at gentle slopes. The Moody-Nora silty clay loams are medium-textured and moderately fine textured soils on loessal uplands. These soils are highly erosive and their strength against shearing is low when they are saturated.

The Estelline silt loam as identified by the Soil Conservation Service is also present in the City. The Estelline silt loam consists of moderately well drained, medium-textured soil on stream terraces in loess about 28 to 50 inches thick that overlies sand and gravel. Shallow bedrock is also prevalent in this area.

Surface Water Hydrology: Surface water from storm runoff flows into storm sewer and roadside ditches until it reaches the Big Sioux River. The terrain in the project areas vary with land slopes ranging from relatively flat to near ten percent.

Ground Water Hydrology: Aquifers in the Dell Rapids area are defined by the Sioux Quartzite formations. The Sioux Quartzite formations are typically first encountered anywhere between land surface and depths greater than 300 feet. The Sioux Quartzite is generally not an aquifer material. Locally, the Sioux Quartzite may yield water from fractures or porous areas. This information was obtained from the South Dakota Department of Environment and Natural Resources, Division of Financial and Technical Assistance.

Historical and Archaeological Sites

Existing Conditions: There are no historical or archeological sites that are known to presently exist within the area which is to be affected by this project.

Cumulative Impacts: Since there are no historical or archeological sites that are known to exist within the area affected by this project, no impact to any historical or archaeological sites will occur. Furthermore, there are no known historical or archeological sites in the area adjoining this project for which other projects which are interconnected to this project may develop in the future. Therefore, no such impact is expected to be initiated or to accumulate from this proposed project. However, if any unidentified cultural resources are encountered, construction in the vicinity of these resources will be carefully managed to minimize any potential affects to these areas. If any historical or archaeological artifacts are encountered, work in that portion of the project will be halted and the appropriate state agencies notified.

Floodplains and Wetlands

Existing Conditions: There are no existing floodplains identified along the project, according to the published Flood Insurance Rate Map (FIRM) for Minnehaha County, South Dakota and Incorporated Areas (Map Number 46099C0104D) effective September 2, 2009. There are no existing major wetlands contained within the project area according to the National Wetlands Inventory Maps (Appendix C) online at http://wetlands.fws.gov/.

Cumulative Impacts. Since there are no existing major wetlands in the project area, the proposed project will not have any impacts on such wetlands. If any unidentified wetlands should be encountered during the construction process, construction will be rerouted to avoid crossing or displacing the wetlands if possible. No fill will be added to any major natural wetlands, should they be encountered. Other projects may occur in the future which are interconnected to this project. Any impacts to floodplains and wetlands will be evaluated and controlled similar to this project, such that no cumulative impacts to floodplains or wetlands will occur.

Agricultural Lands

Existing Conditions: Existing land use around the projects consists of paved rural and urban sections, gravel and curb and gutter. There is no agricultural land adjacent to the projects.

Cumulative Impacts: This project will not alter the existing land use within the right-of-way.

Wild and Scenic Rivers

Existing Conditions: The Big Sioux River is in the vicinity of the project and will be unaffected as a result of this project.

Cumulative Impacts: With a segment of the project being located within the vicinity of the Big Sioux River, erosion control measures such as inlet protection, installation of silt fences, construction of storm water detention berms, mulching, and seeding of disturbed areas will be implemented to minimize runoff from the construction site. The Contractor will be required to dispose of flushing and/or disinfected water in a manner that will prevent water from reaching any stream, lake or flowing waterway and shall ensure that no damage to the natural environment or wildlife occurs. De-chlorination chemicals shall be used at water discharge points where required to prevent environmental damage.

Fish and Wildlife Protection

Existing Conditions: There are no small streams that provide fish habitat entering the Big Sioux River near the project area. Wildlife inhabits the project area, but there are no game preserves, national forests, or any known endangered or rare species which presently exist within the project area.

Cumulative Impacts: Since there are no areas of fish and/or wildlife habitat, game preserves, national forests, or any known endangered or rare species in the project area, no cumulative impacts are anticipated from this project or any future projects which may interconnect to this project. Should any rare or endangered species be encountered at any time, the appropriate agencies will be contacted for consultation.

Water Quality and Quantity

Existing Conditions: The Big Sioux River is located approximately one-half mile south of the project area. Due to this distance there will be minimal impact to the water quality from this segment.

Cumulative Impacts: No impact is anticipated to accumulate from this project. During this project and future projects, groundwater and surface water will be protected from environmental impacts through erosion control measures. Drinking water quality will be maintained by observing proper separation distances between water mains and sanitary sewer mains. The minimum separation distances and construction requirements are given in Chapter II "Sewers" of the *Recommended Design Criteria Manual for Wastewater Collection and Treatment Facilities* prepared by the South Dakota Department of Environment and Natural Resources.

Miscellaneous Issues

Existing Conditions: Items considered under this category include air quality, noise, and solid waste management. No long term impacts to the existing conditions of air quality, noise, and solid waste management are expected to result from this project.

Cumulative Impacts: Any future projects which interconnect to this project will be of similar character to this project. Therefore, no long term impacts to air quality, noise, and solid waste management are expect to accumulate from this project or future projects which interconnect to this project. Short term issues related to air quality, noise, and solid waste management generally exist to some extent on nearly every construction project. This project and future projects will not include any long-term air emissions. Short-term effects on air quality include dust and construction equipment exhaust and will be similar to air quality impacts of present farming equipment within the region. No major sources of noise are anticipated, with the exception of minor disturbances created by construction equipment. This noise would be similar to noise created by normal farming operations and truck traffic within the region. A small amount of solid wastes will be generated by construction activities, primarily in the form of packaging materials removed from equipment and materials which will be incorporated into the work.

Dust suppression will be provided as needed through the use of watering vehicles. Noise from construction equipment will be minimized through the use of appropriate mufflers and other noise devices. Construction equipment must meet all appropriate OSHA, State and Federal laws

regarding emissions and noise. Work will normally be limited to daylight hours, Monday through Saturday. Solid waste materials will be disposed of in approved landfills or by other methods approved by local and state regulations.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

See the appendix for the responses from various review agencies. SECOG assisted with the public hearing. Minutes from the public hearing will be placed in the appendix upon receipt.

SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENT

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

A no action alternative delays making the inevitable improvements for the community until conditions worsen to a point where the City has to act immediately due to some unforeseen circumstance. Project costs go up with time and waiting to do these improvements will only increase the cost of the projects due to inflation as well as duplicate construction costs to install underground facilities where the SD DOT will reconstruct the road. It is recommended that Alternatives #2 and #3 described in this facilities plan be adopted by the City for the proposed Clean Water and Drinking Water Improvements.

DESIGN OF SELECTED PLAN

The display maps with the alternatives provide the preliminary layout of the proposed projects. Further analysis and design will be performed for these projects during the final design phase of the project and prior to construction of the project. The plans will be designed by DGR and submitted to the appropriate funding agencies for review.

COST ESTIMATES FOR THE SELECTED PLAN

Detailed project cost estimates for each alternative are provided in the Development of Alternatives Section.

ENVIRONMENTAL IMPACTS OF SELECTED PLAN

The impact of these projects on the environment will be minimized during construction by a variety of methods. The utility trenches will be brought back to existing grade and shaped to the proposed cross sections. The disturbed areas will be seeded or re-paved to prevent erosion. Other erosion control features such as storm water inlet protection, silt fences, vehicle tracking stations, etc. will be utilized in all construction areas. Groundwater and surface water will be protected during the

flushing and disinfecting of newly installed water mains. The contractor shall dispose of flushing and/or disinfected water in a manner which shall prevent water from reaching any stream, lake or flowing stream and shall assure that no damage to the natural environment or wildlife occurs. De-chlorination chemicals shall be used at water discharge points where required to prevent environmental damage.

Other environmental impacts relating to this type of construction project include air quality, noise and solid waste management. This project will not include any long term air omissions. Short term effects on air quality arise from emissions from the construction equipment and the potential for dust. Construction equipment must meet OSHA, State and Federal law regarding air and noise emissions. Dust will be controlled during the project with the use of watering trucks. Solid waste materials emanating from this construction site will be disposed of at an approved sanitary landfill.

ARRANGEMENTS FOR IMPLEMENTATION

Operation and Maintenance Requirements

Replacement of the existing cast iron water mains and clay sanitary sewer will reduce the operational and maintenance cost of the water and sewer utilities.

USER IMPACTS

The City plans to increase sewer rates to fund this project. The current sewer rate is a monthly minimum of $15.28 plus a usage charge of $4.22 per thousand gallons. The City does utilize winter averaging for the months of March through August. The current charge for 5,000 gallons is $36.38. The City would need to raise their sewer rates $3.50 per month to cover the debt service payment based on an interest rate of 3.25% for 30 years.

The City plans to increase water rates to fund this project. The current water rate is a monthly minimum of $13.00 plus a usage charge of $4.37 per thousand gallons. The current charge for 5,000 gallons is $34.85. The City would need to raise their water rates $3.00 per month to cover the debt service payment based on an interest rate of 3.0% for 20 years.

LAND ACQUISITIONS

No land is required to be purchased for the proposed project improvements. Temporary construction easements may also be needed along the project route to provide the Contractor with sufficient space to operate and will be determined during the final design.

IMPLEMENTATION SCHEDULE

SRF Funding Application:	January 1, 2016
Funding Package Announced:	March 2016
Final Plans Complete:	May 2016
Bid Letting:	May 2016
Start Construction:	June 2016
Finish Construction:	October 2017

REFERENCES

Health Research Inc., (2012). Recommended Standards for Water Works, Albany, New York

Mays, Larry W., (2000). Water Distribution Systems Handbook, (New York, NY: McGraw Hill), pp.

South Dakota Department of Environment and Natural Resources, (March 1991). Recommended Design Criteria Manual Wastewater Collection and Treatment Facilities, Pierre, SD: Division of Environmental Services.

South Dakota Department of Environment and Natural Resources, (July 1979). Criteria for Design of Public Water Supply Facilities in South Dakota, Albany, New York

Appendix A

Environmental Assessment Letters

662070.6

DGR ENGINEERING

November 30, 2015

SD DENR
Air Quality
Attention: Brad Schultz
Joe Foss Building
523 E. Capitol Ave
Pierre, SD 57501

RE: Air Quality Comments
Infrastructure Improvements
Dell Rapids, South Dakota

Dear Mr. Schultz:

The purpose of this letter is to provide you with a brief description and location maps for the above referenced projects. The City of Dell Rapids is located in Minnehaha County and is applying for project funding through South Dakota's Clean and Drinking Water State Revolving Fund Programs. Please review the enclosed information and provide us with your comments or concerns regarding these projects.

The City of Dell Rapids is planning on the following improvements (see attached exhibits):

1. 10th Street: The scope of work for the 10th Street Improvements includes gravity sewer, water main and storm sewer installation. Replacement of the surfacing is also planned. Construction of this project is being driven by the need to improve city utility service and improve the street section. A map showing the proposed project area is enclosed.

2. SD HWY 115: The scope of work for the SD HWY 115 project consists of the replacement of the existing sanitary sewer and water main. An existing water main under Rocky Run Creek will also be replaced. All disturbed areas will be shaped to match the existing grades and no fill will be added. Construction of this project is being driven by the SD DOT reconstructing SD HWY 115. A map showing the proposed project area is enclosed.

3. Wastewater Treatment Improvements: The City is under a compliance order to make improvements to their treatment system. The City plans to build a new treatment system on the existing site and replace the existing outfall line. A map showing the proposed project area is enclosed.

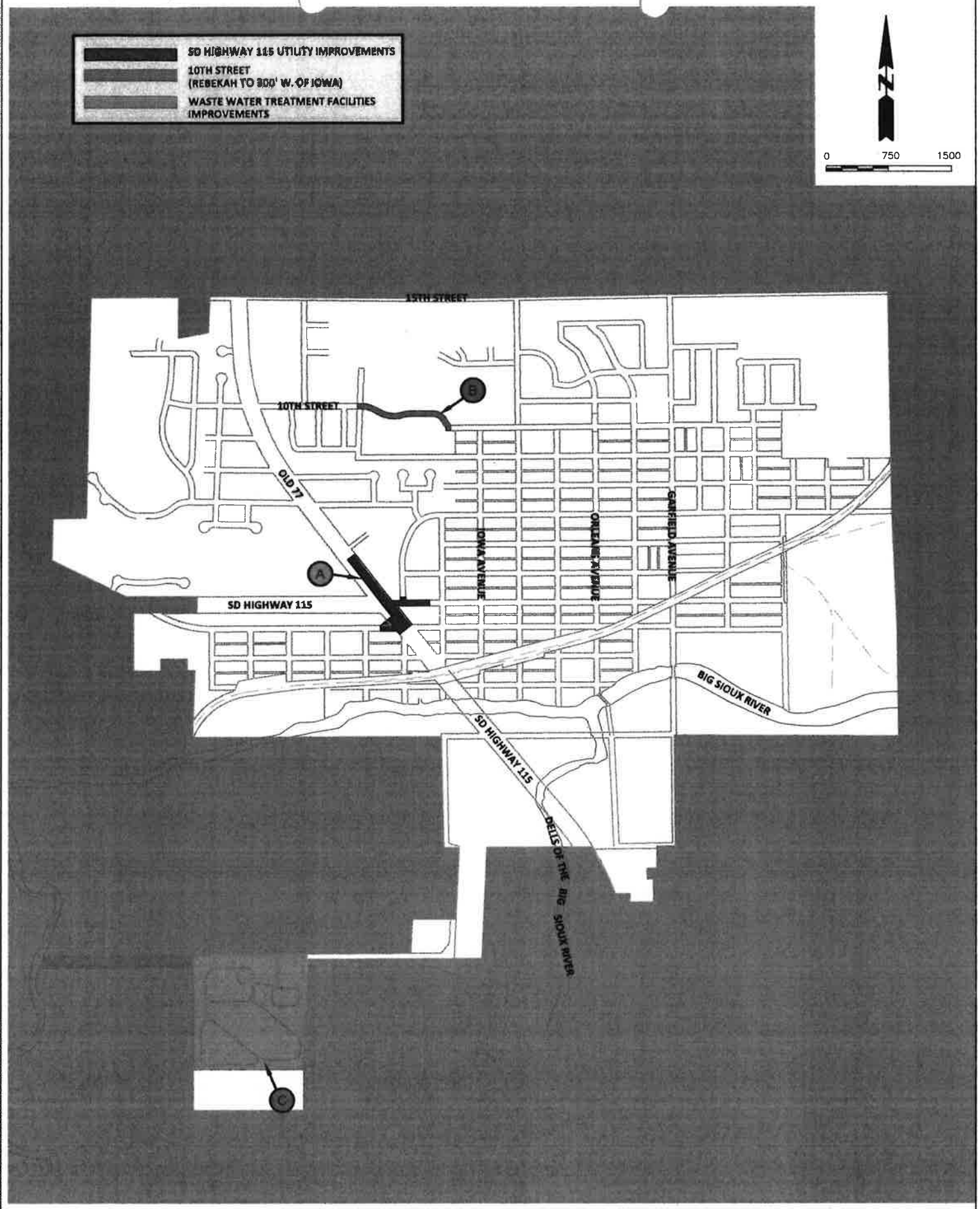
Thank you for providing us with your comments regarding these projects. If you have any questions, please contact us.

Sincerely,

DGR Engineering

Gabriel Laber, PE
Project Manager
gabriel.laber@dgr.com

Enclosures: maps



Plot Date: 11/30/2015 4:13:45 PM

P:\665430\665430DWG\665430 - LOCATION MAP.DWG

REV	DATE	DESCRIPTION

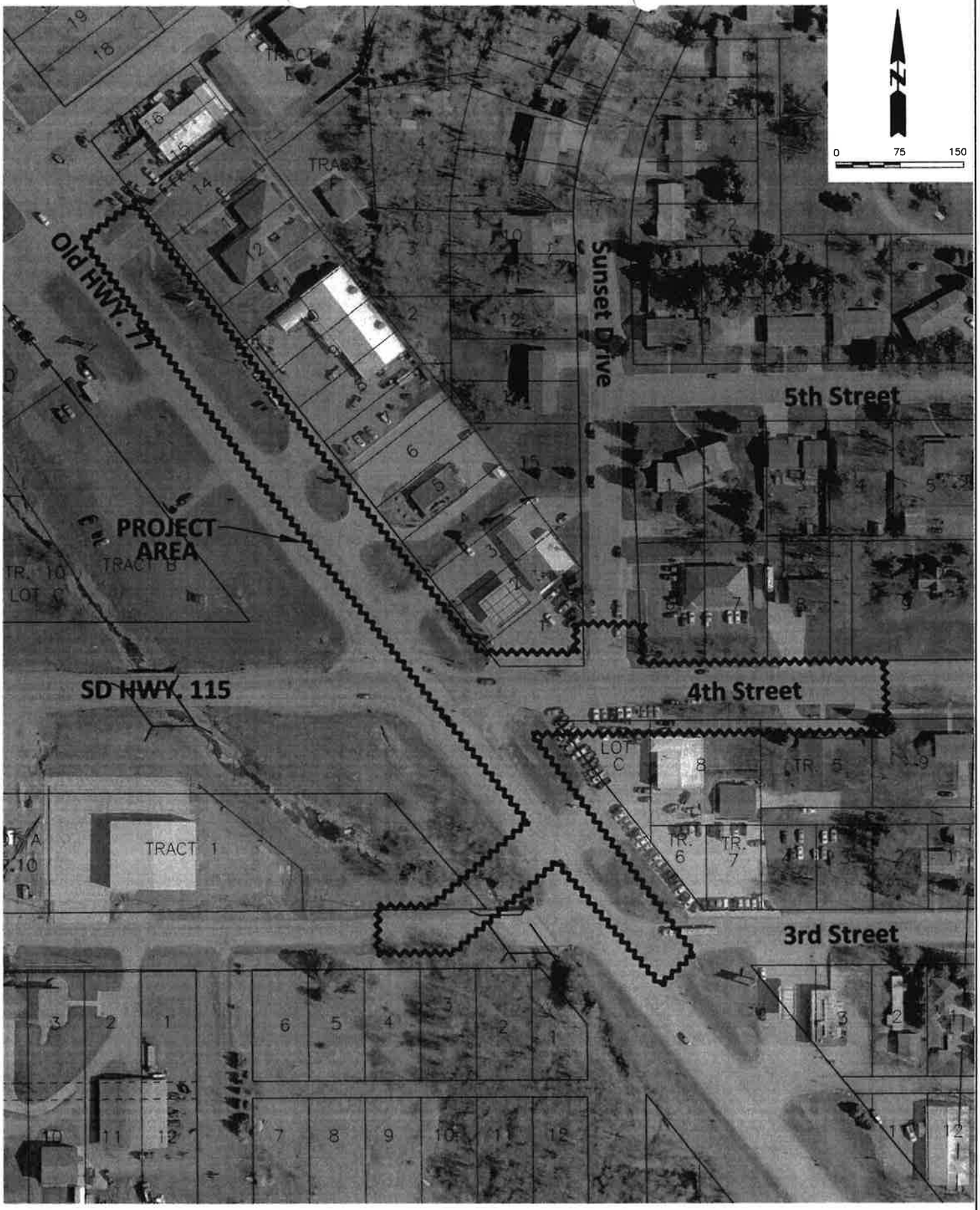
DGR ENGINEERING

Project Manager: TEB
Designer: LWM
Project Number: 665010
Phone: (605) 339-4157

2016 DRINKING WATER & CLEAN WATER IMPROVEMENTS DELL RAPIDS, SD

LOCATION MAP

EXHIBIT 1



REV	DATE	DESCRIPTION

DGR ENGINEERING

Project Manager: LWM
Designer: LWM
Project Number: 662070
Phone: (605) 339-4157

SD HIGHWAY 115
UTILITY IMPROVEMENTS
DELL RAPIDS, SD

PROJECT LOCATION

EXHIBIT A

Plot Date: 11/30/2015 3:53:32 PM

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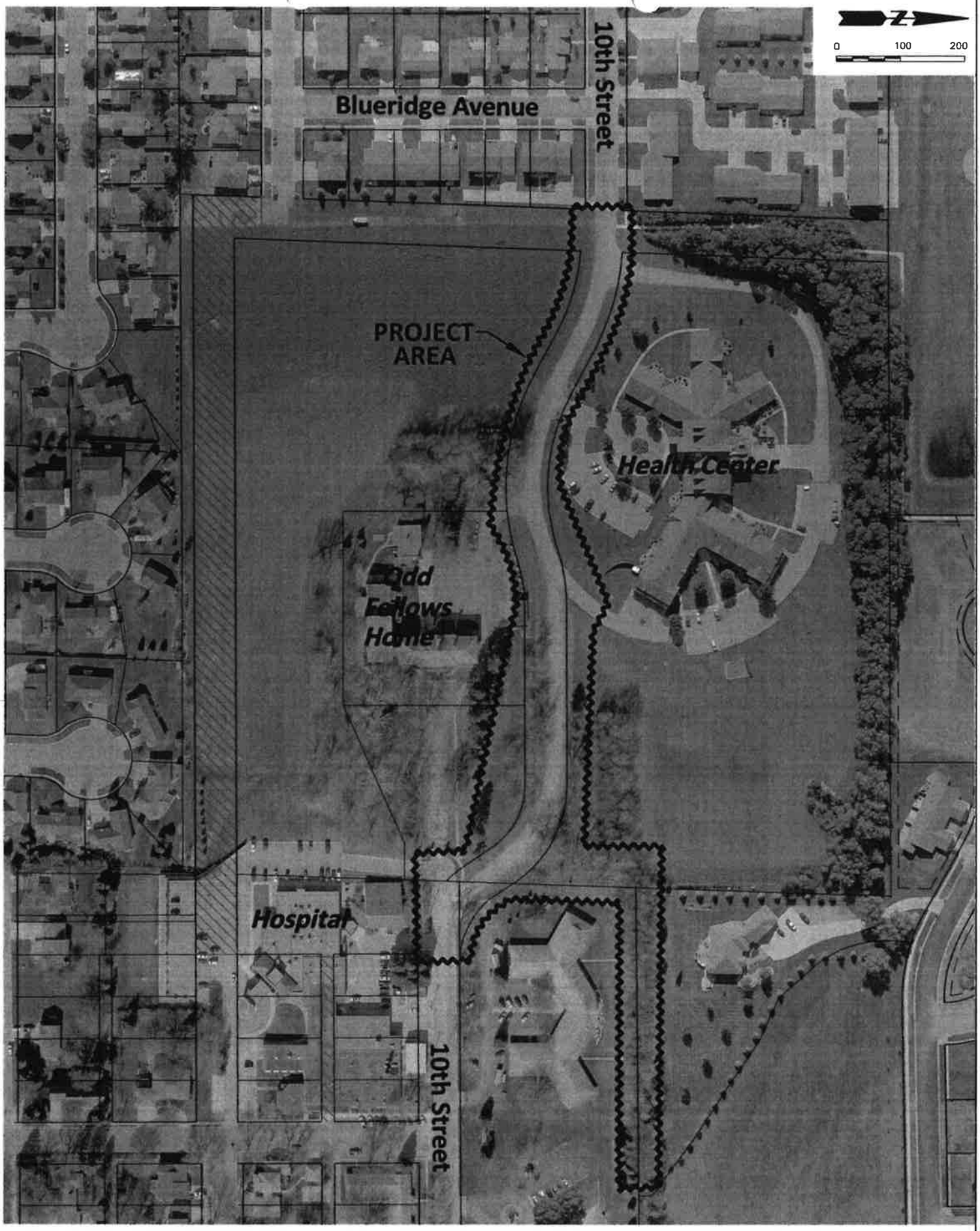

REV	DATE	DESCRIPTION

DGR ENGINEERING

Project Manager:	LWM
Designer:	LWM
Project Number:	661110
Phone:	(605) 339-4157

10th STREET
(REBEKAH TO 300' W. OF IOWA)
STREET & UTILITY
IMPROVEMENTS
DELL RAPIDS, SD

PROJECT LOCATION

EXHIBIT B

Plot Date: 11/30/2015 3:53:07 PM

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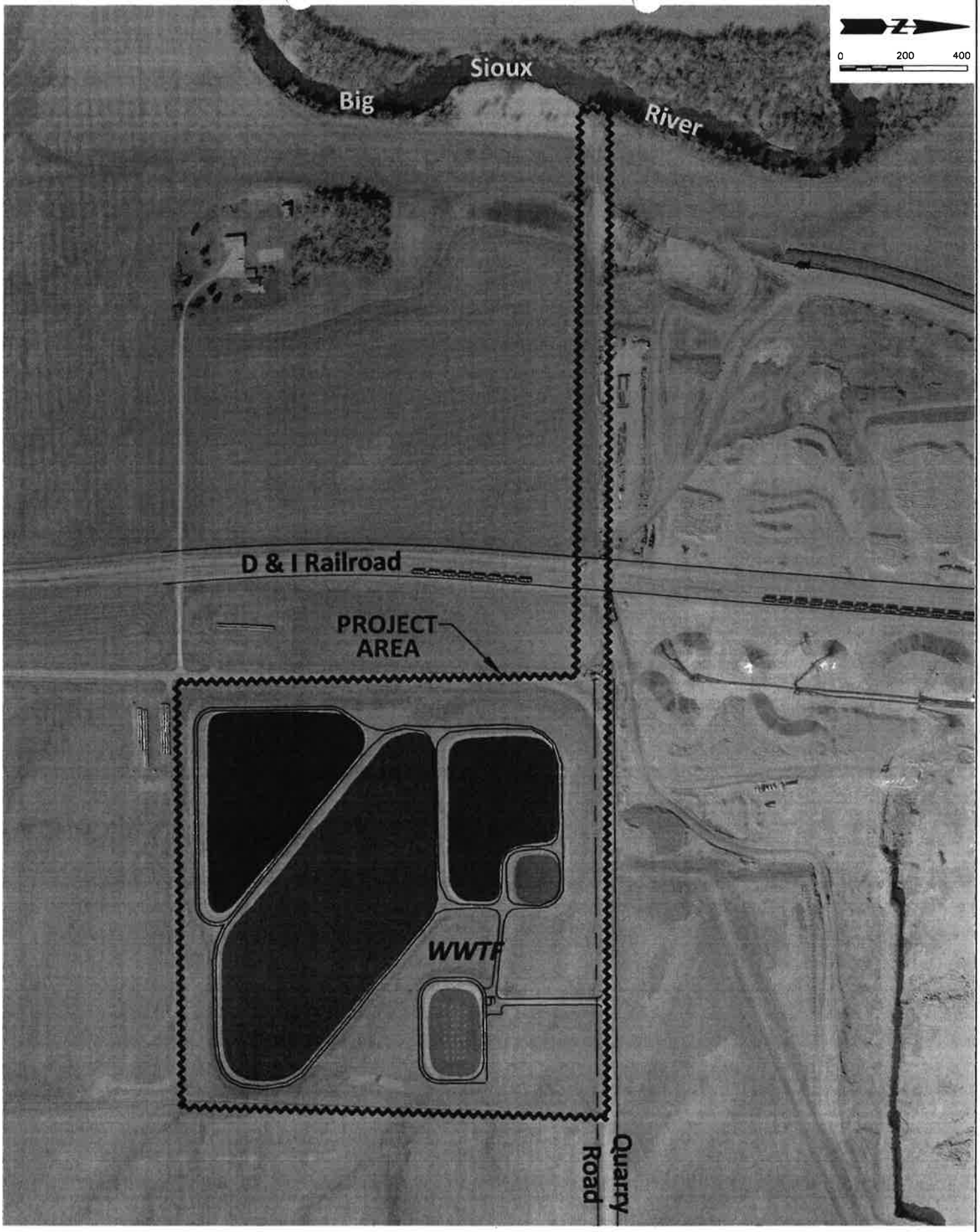

REV	DATE	DESCRIPTION

DGR ENGINEERING

Project Manager:	GGL
Designer:	GGL
Project Number:	665430
Phone:	(605) 339-4157

WASTE WATER TREATMENT FACILITIES IMPROVEMENTS DELL RAPIDS, SD

PROJECT LOCATION

EXHIBIT C

Plot Date: 11/30/2015 4:14:27 PM

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RECEIVED
DEC 0 3 2015
AIR QUALITY
PROGRAM

DGR ENGINEERING

November 30, 2015

SD DENR
Air Quality
Attention: Brad Schultz
Joe Foss Building
523 E. Capitol Ave
Pierre, SD 57501

AIR QUALITY DETERMINATION
It appears, based on the information, that the project will have little or no impact on the air quality in this area. This project is approved.
Approved By: Rick Boldstar
Date: 12-4-15
(605) 773-6038 Fax: (605) 773-5286
South Dakota Department of Environment
And Natural Resources

RE: Air Quality Comments
Infrastructure Improvements
Dell Rapids, South Dakota

Dear Mr. Schultz:

The purpose of this letter is to provide you with a brief description and location maps for the above referenced projects. The City of Dell Rapids is located in Minnehaha County and is applying for project funding through South Dakota's Clean and Drinking Water State Revolving Fund Programs. Please review the enclosed information and provide us with your comments or concerns regarding these projects.

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2. SD HWY 115: The scope of work for the SD HWY 115 project consists of the replacement of the existing sanitary sewer and water main. An existing water main under Rocky Run Creek will also be replaced. All disturbed areas will be shaped to match the existing grades and no fill will be added. Construction of this project is being driven by the SD DOT reconstructing SD HWY 115. A map showing the proposed project area is enclosed.

3. Wastewater Treatment Improvements: The City is under a compliance order to make improvements to their treatment system. The City plans to build a new treatment system on the existing site and replace the existing outfall line. A map showing the proposed project area is enclosed.

DEPARTMENT OF GAME, FISH, AND PARKS
Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

December 3, 2015

Mr. Gabriel Laber
DGR Engineering, Inc.
2909 E. 57th Street
Suite 101
Sioux Falls, SD 57108

RE: Infrastructure Improvements
Dell Rapids, South Dakota

Dear Mr. Laber:

The South Dakota Department of Game, Fish and Parks, Division of Wildlife, has reviewed the above referenced project involving improvements to the gravity sewer, water main and storm sewer system in the City of Dell Rapids, South Dakota.

At this time, the project described will have no impacts on fish and wildlife resources. However, if the project design changes or if new information becomes available, please submit the changes for review.

If you have any questions, please contact me at 605.773.6208.

Sincerely,

Leslie Murphy
Senior Biologist

RECEIVED
DEC 0 3 2015
Dept. of Environment and
Natural Resources
Waste Management

DGR ENGINEERING

November 30, 2015

SD DENR
Waste Management
Attention: Vonni Kallemeyn
Joe Foss Building
523 E. Capitol Ave
Pierre, SD 57501

Waste Management Determination
Hazardous Waste/Solid Waste/Asbestos
It appears, based on the information provided, that this project will have little or no impact on the waste management in this area.
Approved By: Vonni Kallemeyn
Date: 12-4-15
South Dakota Department of Environment & Natural Resources
Phone: (605) 773-3153 Fax: (605) 773-6035

RE: Waste Management Comments
Infrastructure Improvements
Dell Rapids, South Dakota

Dear Ms. Kallemeyn:

The purpose of this letter is to provide you with a brief description and location maps for the above referenced projects. The City of Dell Rapids is located in Minnehaha County and is applying for project funding through South Dakota's Clean and Drinking Water State Revolving Fund Programs. Please review the enclosed information and provide us with your comments or concerns regarding these projects.

The City of Dell Rapids is planning on the following improvements (see attached exhibits):

1. 10th Street: The scope of work for the 10th Street Improvements includes gravity sewer, water main and storm sewer installation. Replacement of the surfacing is also planned. Construction of this project is being driven by the need to improve city utility service and improve the street section. A map showing the proposed project area is enclosed.

2. SD HWY 115: The scope of work for the SD HWY 115 project consists of the replacement of the existing sanitary sewer and water main. An existing water main under Rocky Run Creek will also be replaced. All disturbed areas will be shaped to match the existing grades and no fill will be added. Construction of this project is being driven by the SD DOT reconstructing SD HWY 115. A map showing the proposed project area is enclosed.

3. Wastewater Treatment Improvements: The City is under a compliance order to make improvements to their treatment system. The City plans to build a new treatment system on the existing site and replace the existing outfall line. A map showing the proposed project area is enclosed.

Thank you for providing us with your comments regarding these projects. If you have any questions, please contact us.

Sincerely,

DGR Engineering

Gabriel Laber, PE
Project Manager
gabriel.laber@dgr.com

Enclosures: maps

RECEIVED
DEC 0 3 2015
Drinking Water Program

DGR ENGINEERING

November 30, 2015

SD DENR
Drinking Water
Attention: Mark Mayer
Joe Foss Building
523 E. Capitol Ave
Pierre, SD 57501

DRINKING WATER PROJECT IN FORMATION
It appears, based on the information provided, that this project will not have adverse environmental effects to drinking water in this area. This project is approved.
Approved by:
Date: 12-3-15 ID No.: 2015127
605-773-3754 Fax 605-773-5286
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

RE: Drinking Water Comments
Infrastructure Improvements
Dell Rapids, South Dakota

Dear Mr. Mayer:

The purpose of this letter is to provide you with a brief description and location maps for the above referenced projects. The City of Dell Rapids is located in Minnehaha County and is applying for project funding through South Dakota's Clean and Drinking Water State Revolving Fund Programs. Please review the enclosed information and provide us with your comments or concerns regarding these projects.

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Thank you for providing us with your comments regarding these projects. If you have any questions, please contact us.

Sincerely,

DGR Engineering

Gabriel Laber, PE
Project Manager
gabriel.laber@dgr.com

Enclosures: maps

Appendix B

Minutes from Public Hearing

Appendix C

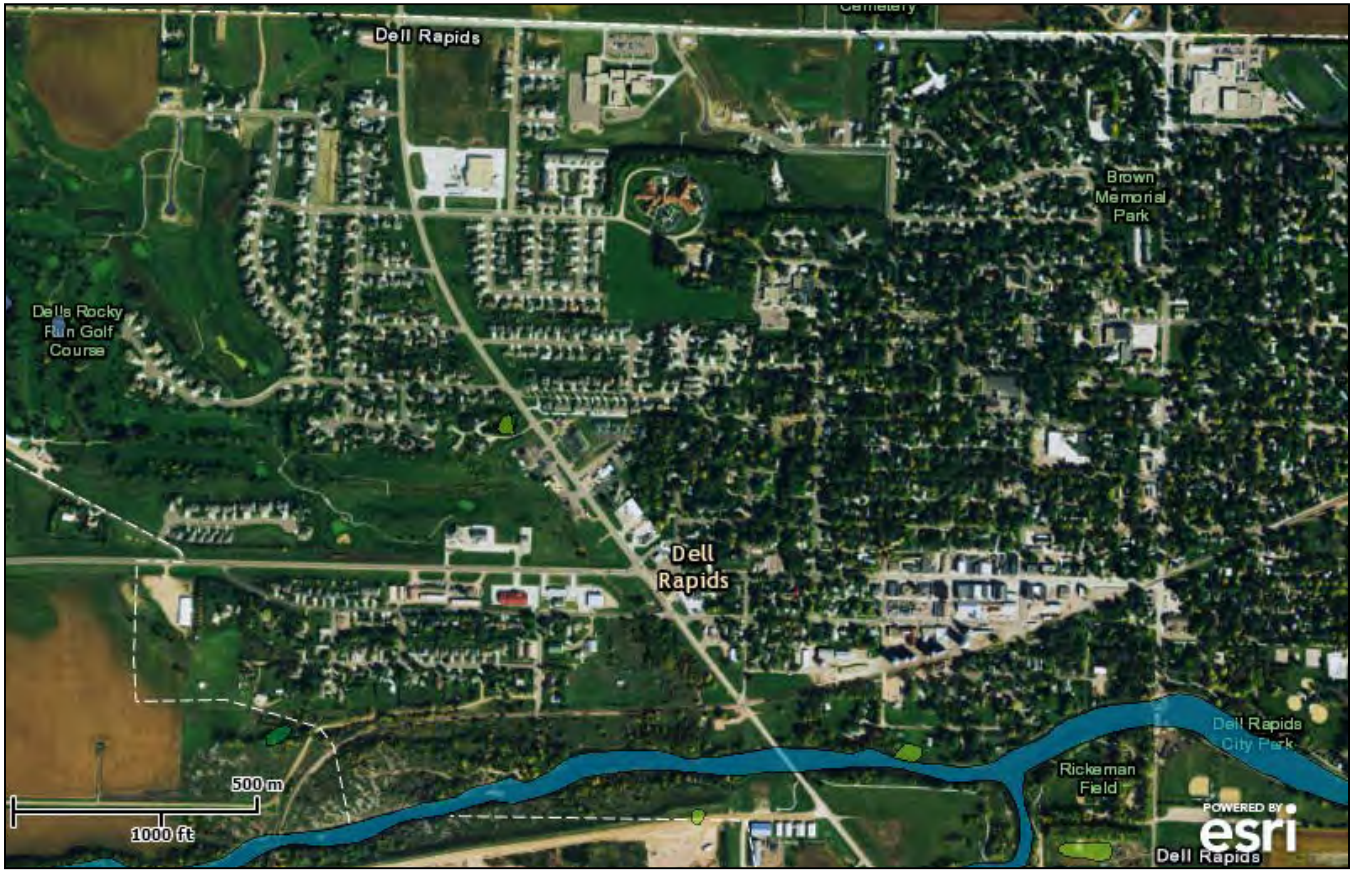
Wetlands Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands Map

Dec 9, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: City of Faulkton

Project Title:	Wastewater Improvements-Phases I & II
Funding Requested:	$2,000,000
Other Proposed Funding:	$515,000 - Community Development Block Grant $2,636,000 - USDA Rural Development
Total Project Cost:	$5,151,000
Project Description:	The project will reduce Faulkton's stormwater infiltration into the sanitary sewer by replacing the city's aging sanitary sewer collection system. This will consist of the replacement of 17,000 feet of pipe with PVC pipe using open trench methods and 7,400 feet of pipe with cast in place pipe (CIPP) lining.
Alternatives Evaluated:	"Do Nothing Alternative" was evaluated but not recommended as this alternative would do nothing to address the deficiencies of the collection system. "Televising, Mapping, and Storm Sewer" alternative would televise and map the entirety of the storm sewer system and would disconnect the storm sewer from the sewer system. This alternative was evaluated, selected, and has since been completed. "Replace Vitrified Clay Pipe (VCP) with PVC" alternative would replace all VCP (and PVC under the minimum recommended size) with PVC pipe. This alternative was evaluated but not selected as it was not the most cost effective alternative. "Replace VCP with CIPP" alternative would replace all the VCP with CIPP. This alternative alone would not be able to correct the issues of pipe sags or less than recommended size pipe and was not recommended. "Replace VCP using a combination of PVC and CIPP" alternative would replace the VCP and undersized pipe with a combination of PVC and CIPP where appropriate. This alternative was evaluated and selected as it was the most cost effective alternative.
Implementation Schedule:	The city of Faulkton anticipates bidding the project in December 2016 with a project completion date of July 2018.

Service Population: 736

Current Domestic Rate: $26.20 flat rate

Interest Rate: 3.25% Term: 30 years Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Faulkton would have to establish a surcharge of approximately $22.83. When added to current rate of $26.20 residents would be paying a flat rate of $49.03.

25% Funding Subsidy:	$500,000 subsidy with a loan of $1,500,000.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $1,500,000 Faulkton would have to establish a surcharge of approximately $17.12 thereby paying a flat rate of $43.32.

50% Funding Subsidy:	$1,000,000subsidy with a loan of $1,000,000.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $1,000,000 Faulkton would have to establish a surcharge of approximately $11.42 thereby paying a flat rate of $37.62.

75% Funding Subsidy:	$ 1,500,000 subsidy with a loan of $500,000.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $500,000 Faulkton would have to establish a surcharge of approximately $5.71 thereby paying a flat rate of $31.91.

ENGINEERING REVIEW COMPLETED BY: NICK NELSON

FINANCIAL REVIEW COMPLETED BY: DEREK LANKFORD

RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

CITY OF FAULKTON, SOUTH DAKOTA

Wastewater System Improvements

DEPARTMENT OF ENVIRONMENT AND NATURAL RESROUCES

SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION

PREPARED BY:
NORTHEAST COUNCIL OF GOVERNMENTS
DECEMBER 2015

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant:	Proposed Funding Package		
Faulkton			
Address: PO Box 21 Faulkton, SD 57438		Requested Funding	$2,000,000
		Local Cash	
	Other:	CDBG	$515,000
Subapplicant:	Other:	USDA-RD	$2,636,000
DUNS Number: 111630500	Other:		
		TOTAL	$5,151,000

Project Title: Faulkton Wastewater Improvements-Phase II

Description:

The City of Faulkton has experienced problems with their wastewater system. In order to address and fix those problems, the City is proposing to replace the sanitary sewer main. The city has cleaned and televised the sewer system, separating storm and sanitary sewer main and made improvements to the wastewater treatment facility. The results of the televising show severe deficiencies which need to be addressed.

The City of Faukton's residents currently pay a monthly flat fee of $26.20 for sewer services. A reserve fund has not been set up for this project at this point in the planning process.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Slade Roseland, Mayor		12/28/2015
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: Northeast Council of Governments

Contact Person: Jordan Hintz

Mailing Address: 416 Production St. N Ste #1

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: 605-626-2595 Fax:

Email address: jordan@necog.org

Consulting Engineering Firm: Helms and Associates

Contact Person: Terry Helms

Mailing Address: PO Box 111

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: 605-225-1212 Fax:

Email address: terryh@helmsengineering.com

Legal Counsel's Firm: Bormann Law Office

Contact Person: Tim Bormann

Mailing Address: 811 Main St

City, State, and Zip: Faulkton, SD 57438

Telephone Number: 605-598-4330 Fax:

Email address:

Bond Counsel's Firm: Meierhenry Sargent LLP

Contact Person: Todd Meierhenry

Mailing Address: 315 S Phillips Ave

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: 605-336-3075 Fax:

Email address:

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B CDBG	C USDA-RD	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services	$98,000	$15,000	$10,000			$123,000
B. Travel						
C. Legal & Bond Counsel			$26,360			$26,360
D. Other						
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$310,900					$310,900
B. Project Inspection Fees						
C. Other	$349,500					$349,500
4. Construction & Improvements	$843,600	$500,000	$2,599,640			$3,943,240
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$1,602,000	$515,000	$2,636,000			$4,753,000
10. Contingencies	$398,000					$398,000
11. Total (Lines 9 and 10)	$2,000,000	$515,000	$2,636,000			$5,151,000
12. Total %	38.83%	10.00%	51.17%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CDBG			December, 2015
Other (Explain) DENR			March, 2016
Other (Explain) USDA-RD			March, 2016
Total			

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other USDA-RD	$2,636,000	3.25%	40	$117,842	Wastewater Project Surcharge
Other DENR	$2,000,000	3.25%	30	$104,450	Wastewater Project Surcharge
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1st

Population Served Current: 736 2010 736 2000 785

Top three employers within 30 miles	Number of Employees	Type of Business
Faulkton Area Medical Center	85	Hospital
Faulkton School System	43	School
Meadows Assisted Living Center	71	Nursing Home/Assisted Living

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2015					
Purpose	Wastewater System					
Security Pledged	Project Surcharge Revenue Bon					
Amount	$790,879					
Maturity Date (mmm/yyyy)	07/2045					
Debt Holder	First National Bank					
Debt Coverage Requirement	110%					
Avg. Annual Required Payment	$41,369					
Outstanding Balance	$786,963					

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$128,576	$127,808	$120,550	$132,090	$136,053	$140,135
Surcharge Fees					$244,000	$244,000
Other (Explain) undesignated Funds			$106,000	$120,800		
Operating Expenses						
Personal Services	($36,903)	($48,676)	($51,554)	($104,308)	($107,437)	($110,660)
Chemical, Material & Supplies	($8,444)	($17,636)				
Electric & Other Utilities						
Other (Explain) Capital Improvements	($55,081)	($787,303)		($5,151,000)		
Operating Net Cash	$28,148	($725,807)	$174,996	($5,002,418)	$272,615	$273,474
Nonoperating Cash Flow						
Interest Revenue	$728	$422				
Transfers In (Explain)	$10,261	($10,261)	$100,000	$310,750		
Fixed Asset Purchases		$781,194	($100,000)	($310,750)		
SRF Loan Proceeds- Federal/State Portion						
Transfers Out (Explain)						
Principal Debt Payments					($66,550)	($74,894)
Interest Debt Payments					($137,218)	($147,398)
Other (Explain) Certificate of Depost Interest	($685)			$5,151,000		
Nonoperating Net Cash	$10,304	$771,355	0	$5,151,000	($203,768)	($222,292)
Increase (Decrease) Cash	$38,452	$45,548	$174,996	$148,582	$68,847	$51,182
Beginning Cash Balance	$186,139	$224,591	$270,139	$445,135	$593,717	$662,564
Ending Cash Balance	$224,591	$270,139	$445,135	$593,717	$662,564	$713,747
Restricted Balance Certificate of Deposit						
Unrestricted Balance	$224,591	$270,139	$445,135	$593,717	$662,564	$713,747

Additional Comments (Explanations)

$100,000 and $310,750 were budgeted items to transfer into cover costs.

$106,000 and 120,800 are undesignated funds for budgeted years 2015 & 16

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber
	N/A	

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [x] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$26.20	$74.45	365	
Business	$26.20	$74.45	55	
Other:				
Other:				

Are fees based on usage or flat rate? Flat Rate

When is proposed fee scheduled to take effect? July 2016

When did the current fee take effect? January 1st, 2016

What was the fee prior to the current rate? 25.46

Storm Sewer Projects Only: Does applicant have a separate storm water fee? _____

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Faulkton Area Medical Center	Hospital	3%
Faulkton High School	School	2%

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. ☒
- A public hearing held discussing the project and the use of an SRF loan to finance the project. ☒
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. ☐
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. ☐

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	City of Faulkton

Project Name:	Faulkton Wasewater Improvements

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: Slade Roseland

Printed Name: Slade Roseland

Title: Mayor

Date: 12/28/2015

Project Engineer

Signature: _____

Printed Name: Terry Helms

License #: _____

Date: 12/28/2015

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	$5,151,000

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$5,151,000

Slade Roseland, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/28/2015

Date

Certification of Nonpoint Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
VII A	NPS pollution - agricultural activities. Plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. Example BMPs include conservation tillage, nutrient management, and irrigation water management.	_____
VII B	NPS pollution - animal production. Confined animal facilities and grazing. Example BMPs include animal waste storage, animal waste nutrient management, composting, and planned grazing.	_____
VII C	NPS pollution - forestry. Removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for the planting of trees. Example BMPs include pre-harvest planting, streamside buffers, road management, and revegetation of disturbed areas.	_____
VII D	NPS pollution - new or existing development in urban or rural setting. Erosion, sedimentation, and discharge of pollutants (e.g. inadequately treated wastewater, oil grease, road salts, and toxic chemicals) into water resources from construction sites, roads, bridges, parking lots, and buildings. Example BMPs include wet ponds, construction site erosion and sedimentation controls, sand filters, and detention basin retrofit. This category includes only runoff projects in communities without Phase I or Phase II storm water permits.	_____
VII E	NPS pollution - ground water protection. Wellhead and recharge protection areas. Activities attributed to specific causes are included in a later, more specific category.	_____
VII F	NPS pollution - boating and marinas. Poorly flushed waterways, boat maintenance activities, discharge of sewage from boats, and physical alteration of shoreline, wetlands, and aquatic habitat during operation or construction of a marina. Example BMPs include pump out systems and oil containment booms.	_____

Category	Definition	Loan Amount
VII G	NPS pollution - mining and quarrying activities. Example BMPs detention berms and seeding or revegetation.	_____
VII H	NPS pollution - abandoned, idle, and under used industrial sites. All pollution control activities at these sites regardless of activity. Example BMPs include ground water monitoring wells, in situ treatment of contaminated soils and ground water, capping to prevent storm water infiltration, and storage tank activities at brownfields.	_____
VII I	NPS pollution - tanks designed to hold chemicals, gasoline, or petroleum products. Tanks may be located either above or below ground. Example BMPs include spill containment, in situ treatment of contaminated soils and ground water, and upgrade, rehabilitation, or removal of petroleum/chemical storage tanks.	_____
VII J	NPS pollution - sanitary landfills. Example BMPs include leachate collection or on-site treatment, gas collections and control, and capping and closure.	_____
VII K	NPS pollution - channel modification, dams, streambank and shoreline erosion, and wetland or riparian area protection or restoration. Example BMPs include conservation easements, swales or filter strips, shore erosion control, wetland development and restoration, and bank and channel stabilization.	_____
VII L	NPS pollution - rehabilitation or replacement of individual or community sewerage disposal system. Construction of collector sewers to transport wastes to a cluster septic tank or other decentralized facilities. Collection sewers and expansion of existing or construction of new centralized treatment facilities that replace individual or community sewerage disposal system are included on Point Source Category table.	
	TOTAL:	_____

Slade Roseland, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/28/2015

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Slade Roseland, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative

12/28/2015

Date

☐ I am unable to certify to the above statements. Attached is my explanation

USER NAME PASSWORD

LOG IN

Forgot Username? Forgot Password?

Create an Account

Entity Dashboard

Entity Overview

- Entity Record
  - Core Data
  - Assertions
  - Reps & Certs
  - POCs
- Reports
  - Service Contract Report
  - BioPreferred Report
- Exclusions
  - Active Exclusions
  - Inactive Exclusions
  - Excluded Family Members

RETURN TO SEARCH

Entity Overview

Entity Information

Name: FAULKTON, CITY OF
Doing Business As: FAULKTON CITY HALL
Business Type: US Local Government
POC Name: City of Faulkton Lisa Raethz
Registration Status: Active
Activation Date: 01/27/2015
Expiration Date: 01/27/2016

Exclusions

Active Exclusion Records? No

SAM | System for Award Management 1.0

IBM v1.P.40.20151201-1827

WWW3

Note to all Users: This is a Federal Government computer system. Use of this system constitutes consent to monitoring at all times.

Part 2 (SDCL 9-22-1, 9-21-19, 9-21-20)
The following designates the fund or funds that money derived from the following sources is applied to:

	GENERAL FUND	2ND PENNY SPECIAL REVENUE
Undesignated Fund Balance	$ 35, $ 55,052.00	$ 104,274.00
310 Taxes	$ 197,658.00	
310 City Sales Tax	$ 155,000.00	
310 Penalties & Interest	$ 200.00	
310 2nd Penny Sales Tax		$ 155,000.00
320 Licenses and Permits	$ 11,345.00	
330 Intergovernmental Revenue	$ 45,450.00	
331 Federal Grants	$ -	$ 126,000.00
334 State Grants	$ -	$ 7,000.00
340 Charges for Goods & Services	$ 9,500.00	
350 Fines&Forfeitures	$ 11,700.00	
360 Miscellaneous Revenue	$ 2,150.00	
TOTAL MEANS OF FINANCE	**$ 488,055.00**	**$ 392,274.00**

PROPRIETARY FUNDS	WATER	SEWER
Undesignated Funds Balance	$ 33,000.00	$ 120,800.00
Estimated Revenue	$ 214,853.00	$ 132,090.00
Transfer-In from Special Revenue	$ -	$ 310,750.00
Total Estimated Balance, Revenue, and Transfer-in	$ 247,853.00	$ 563,640.00
Less Appropriations	$ 209,229.00	$ 415,058.00
Estimated Surplus Retained	$ 38,624.00	$ 148,582.00

415,058
- 310,750
104,308

415,058
310750
104308

Part 3

The Finance Officer is directed to certify the following dollar amount of the tax levies made in this ordinance to the County Auditor of Faulk County, South Dakota.

For General Purposes: $197658.00 plus the growth percent not yet reported by Faulk County Auditor to the City of Faulkton.

Dated this 8th day of September, 2015.

Mayor

ATTEST:

Finance Officer

Placed upon its first reading August 3, 2015
Placed upon its second reading September 8, 2015
Approved and Adopted: September 8, 2015
Published: September 16, 2015
Effective: January 1, 2016

ORDINANCE NO. 34

An ordinance entitled "The Annual Appropriation for the City of Faulkton, Faulk County, South Dakota, for the fiscal year commencing January 1, 2016."

Be it ordained by the City Council of the City of Faulkton, South Dakota, that the following sums are appropriated to meet the obligations of the municipality.

Part I (SDCL 9-21-2)

	GENERAL FUND	2ND PENNY SPECIAL REVENUE
410 GENERAL GOVERNMENT		
411 Legislative	$ 17,907.00	
411.5 Contingency	$ 15,000.00	
412 Executive	$ 4,558.00	
413 Elections	$ 1,100.00	
414 Financial Administration	$ 74,775.00	
419 Other	$ 26,663.00	$ 5,000.00
TOTAL GENERAL GOVERNMENT	**$ 140,003.00**	**$ 5,000.00**
420 PUBLIC SAFETY		
421 Police	$ 44,575.00	
422 Fire	$ 12,370.00	
TOTAL PUBLIC SAFETY	**$ 56,945.00**	**$ -**
430 PUBLIC WORKS		
431 Streets and Roadways	$ 154,193.00	$ 175,000.00
432 Solid Waste/Rubble Site	$ 12,534.00	
435 Airport	$ 19,100.00	$ 133,000.00
437 Cemetery	$ 4,000.00	
485 Capital Outlay	$ 5,000.00	
TOTAL PUBLIC WORKS	**$ 194,827.00**	**$ 308,000.00**
440 WEST NILE		
441 West Nile	$ 10,400.00	$ 15,000.00
TOTAL WEST NILE	**$ 10,400.00**	**$ 15,000.00**
450 RECREATION		
451 Recreation	$ 54,455.00	
452 Parks	$ 9,075.00	
456 Auditorium	$ 17,350.00	
TOTAL RECREATION	**$ 80,880.00**	
460 DEVELOPMENT		
465.0 Economic Develop & Assist.		$ 64,274.00
465.3 Promoting the City	$ 5,000.00	
TOTAL ECONOMIC DEVELOP.	**$ 5,000.00**	**$ 64,274.00**
TOTAL APPROPRIATIONS	**$ 488,055.00**	**$ 392,274.00**

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Dated this 8th day of September, 2015.

Mayor

ATTEST:

Finance Officer

Placed upon its first reading August 3, 2015
Placed upon its second reading September 8, 2015
Approved and Adopted: September 8, 2015
Published: September 16, 2015
Effective: January 1, 2016

RESOLUTION

RESOLUTION NO. _____

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Faulkton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to collection system improvements, treatment system improvements, and inspecting and televising wastewater lines.(the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $5,151,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Faulkton, South Dakota, this 28th day of December 2015.

APPROVED:

Mayor
City of Faulkton

(Seal)

Attest: Sallie Traver
City Finance Officer

PRIOR YEARS FINANCIAL STATEMENTS

CITY OF FAULKTON

FAULKTON, SOUTH DAKOTA

FINANCIAL REPORT

FOR THE TWO YEARS ENDING DECEMBER 31, 2012

WITH INDEPENDENT AUDITOR'S REPORTS

INDEPENDENT AUDIT SERVICES, P.C.

Benjamin Elliott, CPA
P.O. Box 262
Madison, South Dakota 57042

CITY OF FAULKTON
FAULKTON, SOUTH DAKOTA

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FOR THE TWO YEARS ENDING DECEMBER 31, 2012

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NOTE: All figures shown in this financial report are in U.S. dollars.
For space considerations, the "$" symbol is not used.

INDEPENDENT AUDIT SERVICES, PC
Benjamin Elliott, CPA
P.O. Box 262
Madison, South Dakota 57042
605.483.3225

Governing Board
City of Faulkton
Faulkton, South Dakota

INDEPENDENT AUDITOR'S REPORT

I have audited the accompanying modified cash basis of accounting financial statements of governmental activities, business-type activities, and each major fund of the City of Faulkton (City), Faulk County, South Dakota, as of December 31, 2012 and for each of the years in the biennial period then ended, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

I did not audit the modified cash basis of accounting financial statements of the Faulkton Housing and Redevelopment Commission which represents 100% of the cash assets, net position, receipts and disbursements of the discretely presented component unit on the government-wide statement of net position and statement of activities.

Management's Responsibility for the Financial Statements

The City's management is responsible for the preparation and fair presentation of these financial statements in accordance with the modified cash basis of accounting described in note 1.c; this includes determining that the modified cash basis of accounting is an acceptable basis for the preparation of these financial statements in the circumstances. Management is responsible for the design, implementation, and maintenance of internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatements, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express opinions on these financial statements based on my audit. I conducted my audit in accordance with auditing standards generally accepted in the United States of America and the standard applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risk of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the City's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, I express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I obtained is sufficient and appropriate to provide a basis for my audit opinions.

Basis for Disclaimer of Opinion

The modified cash basis of accounting financial statements of the Faulkton Housing and Redevelopment Commission have not been audited. I was not engaged to audit these modified cash basis of accounting financial statements as part of my audit of the City of Faulkton's modified cash basis of accounting financial statements. These financial statements are included in the City's basic financial statement as a discretely presented component unit and represents 100% of the cash assets, net position, receipts and disbursements of the City's discretely presented component unit.

Disclaimer of Opinion

The financial statements, referred to above, of the financial position and changes in financial position of the discretely presented component unit of the City of Faulkton, South Dakota as of December 31, 2012 and for each of the years in the biennial period then ended were not audited by me and, accordingly, I do not express an opinion on them.

Unmodified Opinions

In my opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position on a modified cash basis of accounting of governmental activities, business-type activities, and each major fund of the City of Faulkton, South Dakota, as of December 31, 2012, and the respective changes in its financial position and, where applicable, cash flows thereof for each of the years in the biennial period then ended in accordance with the modified cash basis of accounting described in note 1.c to these financial statements.

Basis of Accounting

I draw attention to note 1.c of these financial statements, which describes the basis of accounting. These financial statements are prepared on the modified cash basis of accounting, which is a basis of accounting other than accounting principles generally accepted in the United States of America. My opinion is not modified with respect to this matter.

Other Matters - Other Supplementary Information (Opinion)

My audit was conducted for the purpose of forming opinions on the modified cash basis of accounting financial statements that collectively comprise the City of Faulkton's financial statements.

The schedule of changes in long-term debt (page 33) is presented for the purpose of additional analysis and is not a required part of the modified cash basis of accounting financial statements.

The accompanying Schedule of Expenditures of Federal Awards, (page 34) which is required by the U.S. Office of Management and Budget Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*, is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The schedule of changes in long-term debt and the schedule of expenditures of federal awards is the responsibility of management and is derived from and relates directly to the underlying accounting and other records used to prepare the modified cash basis of accounting financial statements. The information has been subject to the auditing procedures applied in the audit of the financial

statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements, or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America.

In my opinion, the schedule of changes in long-term debt and the schedule of expenditures of federal awards are fairly stated, in all material respects, in relation to the modified cash basis of accounting financial statements as a whole.

Other Matters - Other Supplementary Information (No Opinion)

My audit was conducted for the purpose of forming opinions on the modified cash basis of accounting financial statements that collectively comprise the City of Faulkton's financial statements.

> The management's discussion and analysis (page 4 to 9) and the budgetary comparison schedules (page 29 to 32) are presented for purposes of additional analysis and are not a required part of the modified cash basis of accounting financial statements.

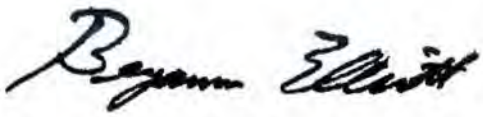
I have applied certain limited procedures to this supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the formation and comparing the information for consistency with management's responses to my inquiries, the basic financial statements, and other knowledge I obtained during my audit of the basic financial statements. I do not express an opinion or provide any assurance on this information because the limited procedures do not provide me with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, I have also issued my report (page 35) dated July 19, 2013 on my tests of City of Faulkton's compliance with certain provisions of laws, regulations, contracts and other matters and my consideration of its internal control over financial reporting. The purpose of that report is to describe the scope of my testing of compliance and internal control over financial reporting, and the results of that testing, and not to provide an opinion on compliance or internal control over financial reporting. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's compliance and internal control over financial reporting.

Independent Audit Services, PC
Benjamin Elliott, CPA
Madison, South Dakota

July 19, 2013



MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)

Our discussion and analysis of the City of Faulkton's (City) financial performance provides an overview of the City's financial activities for the two years ending December 31, 2012, within the limitations of the City's modified cash basis of accounting. Please read it in conjunction with the City's financial statements.

FINANCIAL HIGHLIGHTS	2012	2011
Receipts:		
Charges for goods and services	335,751	289,650
Operating grants	12,562	11,694
Capital grants	236,300	684,974
General receipts	555,660	975,702
Total	1,140,273	1,962,020
Disbursements:		
Governmental	781,363	1,700,962
Business-type	256,073	243,314
Total	1,037,436	1,944,276
Increase (Decrease) in Net Position	102,837	17,744
Net Position:		
December 31, 2010		929,357
December 31, 2011	947,101	947,101
December 31, 2012	1,049,938	
Governmental Funds:		
General	290,129	246,316
2nd Cent	431,238	436,902
Business-Type Funds:		
Water	143,117	101,933
Sewer	185,454	151,400
Airport	closed	10,550
Total	1,049,938	947,101

<u>During 2012, the City</u>:

Paid:

$ 266,314 for airport improvements
100,000 for street improvements
31,790 for water project costs
7,695 for a snow plow
3,000 for a security camera at the pool

Received:

172,286 from property taxes
286,270 from sales taxes

<u>During 2011, the City</u>:

Paid:

$ 1,082,455 for water tower and water line projects
122,011 for street improvements
77,828 for ball park lighting
29,127 for playground equipment and improvements
19,525 for a 2011 Chevrolet Colorado
4,125 for a pool pump

Received:

164,457 from property taxes
287,218 from sales taxes

BRIEF DISCUSSION OF THE BASIC FINANCIAL STATEMENTS

This financial report is presented in a format consistent with the presentation requirements of the Governmental Accounting Standards Board (GASB) Statement-34.

The financial report consists of three parts: (1) management's discussion and analysis (page 4 to 9), (2) the basic financial statements (page 10 to 28) and (3) other supplementary information (page 29 to 34). The basic financial statements include two types of statements that present the City from two different financial points of view.

Government-wide financial statements (View #1):

The first two statements are government-wide financial statements that provide both long-term and short-term information about the City's overall financial status.

Fund financial statements (View #2):

The remaining financial statements are fund financial statements that focus on significant operations of the governmental and enterprise activities of the City.

The governmental financial statements tell how general governmental services were financed in the short-term, as well as what remains for future spending. Governmental funds operated by the City at the two years ending of December 31, 2012 are the General and 2nd Cent Funds.

The enterprise fund financial statements offer short-term and long-term financial information about the activities of the City that operate like a business. Enterprise funds operated by the City include the Water, Sewer, and Airport Funds.

The fiduciary fund financial statements provide information about the financial status of activities in which the City acts solely as a trustee or agent for the benefit of those groups to whom these funds belong. In 2011 and 2012 the City had no fiduciary funds.

The financial statements include notes that explain in more detail some of the information found in the financial statements. The financial statements are also followed by a section of supplementary information that presents a budgetary analysis for the general fund and major special revenue funds.

Supplementary Information:

The Management's Discussion and Analysis (page 4 to 9) and the Budgetary Comparison Schedules (page 29 to 32) are supplementary information. Such information provides readers of this report with additional data that supplements the government-wide statements and fund financial statements. The Budgetary Comparison Schedule is presented on a budgetary basis of accounting, which reports capital expenditures within their respective expenditure function rather than as a separate capital outlay expenditure.

The schedule of changes in debt (page 33) is presented for purposes of additional analysis and is not a required part of the basic financial statements.

Here is an overview of the City's financial statements.

```
Management's                    Government-wide
Discussion and            |--->Financial
Analysis                  |    Statements
   |                      |
Basic Financial           |    Fund
Statements ----------->   |--->Financial
   |                      |    Statements
   |                      |
Supplementary             |    Notes to the
Information               |--->Financial
(other than MD&A)              Statements
```

Here is a summary of the major features of these financial statement.

	Government-wide Statements	Fund Statements	
		Governmental Funds	Enterprise Funds
Scope	Entire City (including component units if any)	City activities except enterprise (water and sewer)	Activities operated like a private business (water and sewer)
Required Financial Statements	Statement of Net Position	Balance Sheet	Statement of Net Position
Required Financial Statements	Statement of Activities	Statement of Receipts Disbursemrents and Changes in Fund Balances	Statement of Cash Receipts, Disbursements and Changes in Net Position
Basis of Accounting	Modified Cash	Modified Cash	Modified Cash
Measurement Focus	Modified Cash	Modified Cash	Modified Cash
Types of assets & Liabilities	Only cash No liabilities	Only cash No liabilities	Only cash No liabilities
Types of Revenue and Expenditures or Expense	Cash receipts Cash disbursements	Cash receipts Cash disbursements	Cash receipts Cash disbursements

BASIS OF ACCOUNTING

The City has elected to present its financial statements on a modified cash basis of accounting. This modified cash basis of accounting is a basis of accounting other than generally accepted accounting principles. Basis of accounting is a reference to *when* financial events are recorded, such as the timing for recognizing revenues, expenses, and their related assets and liabilities. Under the City's modified cash basis of accounting, revenues and expenses and related assets are recorded when they result from cash transactions, except for the recording of investments.

GOVERNMENT-WIDE STATEMENTS
(Reporting the City as a whole)

The government-wide statements (page 10 to 12) report information about the City as a whole using cash accounting methods similar to those used by private-sector companies. The statement of net position includes all of the City's cash. The statement of activities includes all of the year's receipts and disbursements.

The two government-wide statements report the City's net position and how it has changed. Net position is the City's petty cash, checking accounts, certificates of deposit and money market accounts. The change in these accounts is one way to measure the City's financial health. Increases or decreases in net position measures improvements or declines in the City's financial health. To assess the City's overall financial health you also need to consider other factors such as changes in the property tax base, and/or sales tax receipts generated from local businesses.

The government-wide financial statements have two broad categories of information: governmental activity and business-type activity.

The governmental activities include basic services such care of streets, police protection, community center, pool, and capital projects. Property taxes, sales taxes, interest earnings finance most of these activities. Bonds and federal and state grants help pay for capital improvements.

The business-type activities account for the City's water and sewer activities. These services are funded by user fees.

FUND FINANCIAL STATEMENTS
(Reporting the City's most significant funds)

The fund financial statements (page 13 to 17) provide more detailed information about the City's most significant funds - not the City as a whole. Funds are accounting tools used to keep track of the City's receipts and disbursements. State law requires the use of some funds and the City Council establishes other funds to manage money for a specific purpose, like a capital project.

The fund financial statements show information in two broad categories: governmental and enterprise (business-type).

Governmental funds: Most of the City's basic services are included in the governmental funds, which focus on (1) how cash flows in and out of that fund, and (2) cash balances left at year-end which are available for spending in the next year. The governmental funds financial statements provide detail that helps you determine whether there is more or fewer cash resources available for spending in the near future to finance the City's programs.

Enterprise fund: Services for which the City charges the customer a fee are generally reported in enterprise funds. These funds account for cash and the receipt and disbursement of cash, the same as the governmental funds. The water and sewer funds are the only enterprise funds maintained by the City.

MATERIAL CHANGES IN STATEMENT OF NET POSITION AND STATEMENT OF ACTIVITIES

For the Year Ending December 31, 2012
(Material changes for governmental activities = changes greater than $50,000)
(Material changes for business-type activities = changes greater than $30,000)

	Increase (Decrease)	Reason
Governmental Activities:		
Capital grants	(456,669)	Completed water project in 2011.
Public works	(826,258)	Completed water project in 2011.
Culture and rec.	(97,832)	Ball park lighting completed in 2011.
Loan proceeds	(437,255)	Completed water project in 2011.
Business-type Activities:		
Cash	64,688	Excess cash receipts over cash disbursements.
Charges for services	39,963	Increased water and sewer rates.

For the Year Ending December 31, 2011
(Material changes for governmental activities = changes greater than $50,000)
(Material changes for business-type activities = changes greater than $30,000)

	Increase (Decrease)	Reason
Governmental Activities:		
Capital grants	(1,479,747)	Completed water project in 2011.
Public works	(1,048,998)	Completed water project in 2011.
Culture and rec.	98,481	Ball park lighting completed in 2011.
Loan proceeds	468,220	Completed water project in 2011.
Business-type Activities:		
Cash	39,830	Excess cash receipts over cash disbursements.
Charges for services	32,723	Increased water and sewer rates.
Water cost	30,431	Additional debt service costs

SIGNIFICANT VARIATIONS BETWEEN ORIGINAL AND FINAL GENERAL FUND BUDGET

In 2012 the City adopted a general fund budget of $412,869 which is a decrease of $25,304 or 5.77% from 2011. The decrease was spread across several line items. There was one supplemental appropriation for $6,100 to the general fund budget. See page 29 for more information.

In 2011 the City adopted a general fund budget of $438,173 which is an increase of $19,310 or 4.61% from 2010. The increase was spread across several line items. There was one supplemental appropriation for $19,221 to the general fund budget. See page 30 for more information.

SIGNIFICANT CAPITAL ASSET ACTIVITY

Significant capital asset activity is reported above.

SIGNIFICANT LONG-TERM DEBT ACTIVITY

During 2012 the City made principal payments of $15,221 and $583 on two loans. At December 31, 2012 these loans had a balance of $1,094,852 and $112,233.

During 2011 the City made principal payments of $14,735 and $0 on two loans. At December 31, 2011 these loans had a balance of $1,110,073 and $105,818.

See also page 33 for more information.

The City has guaranteed 25% of two Faulkton Housing & Redevelopment Revenue Bonds which had balances of $196,518 and $271,896 at December 31, 2012.

CURRENTLY KNOWN FACTS

In 2013 the City will receive a 30 year 3.25% SRF loan of $902,000 for storm sewer improvements.

In 2013 the City added equipment and a storage facility to the airport for approximately $300,000.

In 2013 the City awarded an airport water line project for $46,306.

In 2013 the City agreed to contribute $2,500 a year for three years to the Faulkton Area Development Corporation as part of a NESDCAP Rural Community Development Initiative Grant.

CONTACTING THE CITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, investors and creditors with a general overview of the City's finances and to demonstrate the City's accountability for the money it receives. If you have questions about this report or need additional information, contact the City of Faulkton's business office at 105 8th Avenue North, Faulkton, SD 57438-0021. Phone 605.598.6515.

CITY OF FAULKTON

TABLE 1 - NET POSITION
MODIFIED CASH BASIS - BASED ON GOVERNMENT-WIDE STATEMENT OF POSITION
AS OF DECEMBER 31, 2012, 2011, and 2010

	Governmental Activities			Business-Type Activities			Total Government		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Cash assets:									
Cash	616,803	581,514	606,177	201,103	139,300	102,069	817,906	720,814	708,246
Certif. of deposit	104,564	101,704	99,127	127,468	124,583	121,984	232,032	226,287	221,111
Total	721,367	683,218	705,304	328,571	263,883	224,053	1,049,938	947,101	929,357
Net position:									
Restricted	431,238	436,902		12,768	7,661	2,554	444,006	444,563	2,554
Unrestricted	290,129	246,316	705,304	315,803	256,222	221,499	605,932	502,538	926,803
Total	721,367	683,218	705,304	328,571	263,883	224,053	1,049,938	947,101	929,357

TABLE 2 - CHANGES IN NET POSITION
MODIFIED CASH BASIS - BASED ON GOVERNMENT-WIDE STATEMENT OF ACTIVITIES
FOR THE THREE YEARS ENDING DECEMBER 31, 2012

	Governmental Activities			Business-Type Activities			Total Government		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Receipts:									
Program receipts:									
Charges for service:	28,579	22,441	25,564	307,172	267,209	234,486	335,751	289,650	260,050
Operating grants				12,562	11,694		12,562	11,694	0
Capital grants	228,300	684,969	2,164,716	8,000			236,300	684,969	2,164,716
General receipts:									
Property taxes	172,286	164,457	159,841				172,286	164,457	159,841
Sales taxes	286,270	287,218	274,064				286,270	287,218	274,064
Other taxes	156	168	180				156	168	180
State sources	42,456	31,269	32,874				42,456	31,269	32,874
County sources	2,422	2,422	2,422				2,422	2,422	2,422
Interest received	3,802	3,969	5,326	3,577	3,241	2,687	7,379	7,210	8,013
Donations	564	2,005	463				564	2,005	463
Miscellaneous	13,032	8,000	8,881				13,032	8,000	8,881
Total receipts	777,867	1,206,918	2,674,331	331,311	282,144	237,173	1,109,178	1,489,062	2,911,504
Disbursements:									
General government	89,269	90,270	89,044				89,269	90,270	89,044
Public safety	51,156	50,871	50,561				51,156	50,871	50,561
Public works	551,606	1,377,864	2,426,862				551,606	1,377,864	2,426,862
Health and welfare	7,275	7,063	4,425				7,275	7,063	4,425
Culture/recreation	72,057	169,889	71,408				72,057	169,889	71,408
Economic developmen	10,000	5,000	5,000				10,000	5,000	5,000
Water				187,821	183,093	152,662	187,821	183,093	152,662
Sewer				68,252	51,636	63,797	68,252	51,636	63,797
Airport					8,585	4,545	0	8,585	4,545
Total disbursements	781,363	1,700,957	2,647,300	256,073	243,314	221,004	1,037,436	1,944,271	2,868,304
Net position increase (decrease) before transfers	(3,496)	(494,039)	27,031	75,238	38,830	16,169	71,742	(455,209)	43,200
Other financing sources (uses):									
Transfers in (out)	10,550	(1,000)	(1,000)	(10,550)	1,000	1,000	0	0	0
Loan proceeds	30,965	468,220					30,965	468,220	0
Sale of surplus prope:	130	4,733					130	4,733	0
Change in net positio:	38,149	(22,086)	26,031	64,688	39,830	17,169	102,837	17,744	43,200
Net position:									
December 31, 2009			679,273			206,884			886,157
December 31, 2010		705,304	705,304		224,053	224,053		929,357	929,357
December 31, 2011	683,218	683,218		263,883	263,883		947,101	947,101	
December 31, 2012	721,367			328,571			1,049,938		

CITY OF FAULKTON

STATEMENT OF NET POSITION
MODIFIED CASH BASIS
AS OF DECEMBER 31, 2012

	Primary Government			
	Governmental Activities	Business-Type Activities	Total	Unaudited Component Unit
ASSETS:				
Cash and cash equivalents	185,565	188,335	373,900	19,859
Certificates of deposit	104,564	127,468	232,032	38,344
Restricted assets:				
Cash and cash equivalents	431,238	12,768	444,006	
Total assets	721,367	328,571	1,049,938	58,203
NET POSITION:				
Restricted for:				
Capital project purposes	431,238		431,238	
Debt service purposes		12,768	12,768	
Unrestricted	290,129	315,803	605,932	58,203
Total net position	721,367	328,571	1,049,938	58,203

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF ACTIVITIES
MODIFIED CASH BASIS
FOR THE YEAR ENDING DECEMBER 31, 2012

Functions/Programs:	Disbursements	Program Receipts: Charges for Services and Reimbursements	Program Receipts: Operating Grants and Contributions	Program Receipts: Capital Grants and Contributions	Net Receipts (Disbursements) and Changes in Net Position: Governmental Activities	Net Receipts (Disbursements) and Changes in Net Position: Business-type Activities	Net Receipts (Disbursements) and Changes in Net Position: Totals	Unaudited Component Unit
Primary government:								
Governmental activities:								
General government	89,269	12,824			(76,445)		(76,445)	
Public safety	51,156				(51,156)		(51,156)	
Public works	551,606	6,579		228,300	(316,727)		(316,727)	
Health and welfare	7,275				(7,275)		(7,275)	
Culture and recreation	72,057	9,176			(62,881)		(62,881)	
Economic development	10,000				(10,000)		(10,000)	
Total governmental activities	781,363	28,579	0	228,300	(524,484)	0	(524,484)	0
Business-type activities:								
Water	187,821	215,779	12,562			40,520	40,520	
Sewer	68,252	91,393		8,000		31,141	31,141	
Total business-type activities	256,073	307,172	12,562	8,000	0	71,661	71,661	0
Total primary government	1,037,436	335,751	12,562	236,300	(524,484)	71,661	(452,823)	0
Component unit activity:								
Faulkton Housing & Redev Commission	88,887	67,198						(21,689)
General receipts:								
Taxes:								
Property taxes					172,286		172,286	
Sales taxes					286,270		286,270	
Amusement taxes					156		156	
State shared receipts					42,456		42,456	
County shared receipts					2,422		2,422	
Interest received					3,802	3,577	7,379	1,324
Rents					11,056		11,056	
Donations					564		564	
Miscellaneous receipts					1,976		1,976	
Sale of surplus property					130		130	
Compensation for damages							0	22,261
Drinking water #2 loan proceeds					30,965		30,965	
Transfers					10,550	(10,550)	0	
Total general receipts, special items and transfers					562,633	(6,973)	555,660	23,585
Change in net position					38,149	64,688	102,837	1,896
Net position:								
January 1, 2012					683,218	263,883	947,101	56,307
December 31, 2012					721,367	328,571	1,049,938	58,203

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF ACTIVITIES
MODIFIED CASH BASIS
FOR THE YEAR ENDING DECEMBER 31, 2011

Functions/Programs:	Disbursements	Program Receipts: Charges for Services and Reimbursements	Program Receipts: Operating Grants and Contributions	Program Receipts: Capital Grants and Contributions	Net Receipts (Disbursements) and Changes in Net Position: Governmental Activities	Net Receipts (Disbursements) and Changes in Net Position: Business-type Activities	Net Receipts (Disbursements) and Changes in Net Position: Totals	Unaudited Component Unit
Primary government:								
Governmental activities:								
General government	90,270	12,337			(77,933)		(77,933)	
Public safety	50,871				(50,871)		(50,871)	
Public works	1,377,864	1,438		684,969	(691,457)		(691,457)	
Health and welfare	7,063				(7,063)		(7,063)	
Culture and recreation	169,889	8,666			(161,223)		(161,223)	
Economic development	5,000				(5,000)		(5,000)	
Total governmental activities	1,700,957	22,441	0	684,969	(993,547)	0	(993,547)	0
Business-type activities:								
Water	183,093	200,938	11,694			29,539	29,539	
Sewer	51,636	59,964				8,328	8,328	
Airport	8,585	6,307				(2,278)	(2,278)	
Total business-type activities	243,314	267,209	11,694	0	0	35,589	35,589	0
Total primary government	1,944,271	289,650	11,694	684,969	(993,547)	35,589	(957,958)	0
Component unit activity:								
Faulkton Housing & Redev Commission	75,599	60,510						(15,089)
General receipts:								
Taxes:								
Property taxes					164,457		164,457	
Sales taxes					287,218		287,218	
Amusement taxes					168		168	
State shared receipts					31,269		31,269	
County shared receipts					2,422		2,422	
Interest received					3,969	3,241	7,210	2,465
Rents					5,895		5,895	
Donations					2,005		2,005	
Sale of surplus property					4,733		4,733	
Miscellaneous receipts					2,105		2,105	
SRF loan proceeds					468,220		468,220	
Compensation for damaged property							0	12,847
Transfers					(1,000)	1,000	0	
Total general receipts and transfers					971,461	4,241	975,702	15,312
Change in net position					(22,086)	39,830	17,744	223
Net position:								
January 1, 2011					705,304	224,053	929,357	56,084
December 31, 2011					683,218	263,883	947,101	56,307

See accompanying notes.

CITY OF FAULKTON

BALANCE SHEET -- MODIFIED CASH BASIS
ALL GOVERNMENTAL FUNDS
AS OF DECEMBER 31, 2012

	General Fund	2nd cent Fund	Total
ASSETS:			
Cash and cash equivalents	185,565		185,565
Interest bearing accounts		431,238	431,238
Certificates of deposit	104,564		104,564
Total assets	290,129	431,238	721,367
FUND BALANCES:			
Nonspendable			0
Restricted			0
Committed		431,238	431,238
Assigned - Key deposit	750		750
Assigned - Capital projects	25,000		25,000
Unassigned	264,379		264,379
Total fund balances	290,129	431,238	721,367 *

* Equals net position on
statement of net position

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND BALANCES -- MODIFIED CASH BASIS -- ALL GOVERNMENTAL FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2012
FOR THE YEAR ENDING DECEMBER 31, 2011

	2012			2011		
	General Fund	2nd Cent Fund	Total	General Fund	2nd Cent Fund	Total
Receipts:						
Local sources:						
Taxes:						
Ad valorem taxes	172,286		172,286	164,457		164,457
General sales and use taxes	143,135	143,135	286,270	143,609	143,609	287,218
Amusement taxes	156		156	168		168
Licenses and permits:	11,604		11,604	10,513		10,513
Intergovernmental:						
Federal shared receipts:						
Grant - Airport		217,802	217,802			
Grant - Rural Development - 2010					61,198	61,198
Grant - Rural Development - 2011		825	825	6,500	617,271	623,771
State shared revenue:						
State grants - airport	4,669	5,004	9,673			
Bank franchise tax	736		736	283		283
Liquor tax revision	5,223		5,223	4,908		4,908
Motor vehicle licenses (5%)	10,411		10,411	5,556		5,556
Highway and bridge	26,086		26,086	20,522		20,522
County shared revenue: road tax	2,422		2,422	2,422		2,422
Charges for goods and services:						
Solid waste	330		330	120		120
Sale of white goods	6,249		6,249	1,318		1,318
Recreation - pool	7,983		7,983	7,712		7,712
Recreation - camping	1,193		1,193	954		954
Fines and forfeits:	1,220		1,220	1,824		1,824
Miscellaneous:						
Interest earned	2,930	855	3,785	2,631	1,302	3,933
Dividends	17		17	36		36
Rents and cable franchise	11,056		11,056	5,895		5,895
Donations	564		564	2,005		2,005
Other	1,976		1,976	2,105		2,105
Total receipts	410,246	367,621	777,867	383,538	823,380	1,206,918
Disbursements:						
Current:						
General government:						
Mayor and Council	14,422		14,422	14,517		14,517
Elections	48		48	45		45
Financial administration	51,824		51,824	49,995		49,995
Other	19,829		19,829	25,713		25,713
Public safety:						
Police	41,500		41,500	41,500		41,500
Fire	9,656		9,656	9,371		9,371
Public works:						
Highways and streets	124,054		124,054	135,861		135,861
Solid waste	9,514		9,514	8,514		8,514
Cemetery	3,000		3,000	3,000		3,000
Airport	9,239		9,239			
Health and welfare:						
West Nile	7,275		7,275	7,063		7,063
Culture and recreation:						
Recreation	10,377		10,377	5,681		5,681
Parks	6,369		6,369	5,976		5,976
Pool	36,220		36,220	29,740		29,740
Community Center	16,091		16,091	15,956		15,956
Conservation and development:						
Economic development	10,000		10,000	5,000		5,000
Debt service - Bond issue costs			0		5,117	5,117
Capital outlay	7,695	404,250	411,945	26,487	1,311,421	1,337,908
Total disbursements	377,113	404,250	781,363	384,419	1,316,538	1,700,957
Excess of receipts over (under) disbursements	33,133	(36,629)	(3,496)	(881)	(493,158)	(494,039)
Other financing sources (uses):						
Transfers in (out)	10,550		10,550	(1,000)		(1,000)
Sale of surplus property	130		130	4,733		4,733
SRF loan - federal, forgiven		23,967	23,967		334,053	334,053
SRF loan - state, forgiven			0		28,349	28,349
SRF loan - state		6,998	6,998		105,818	105,818
Net change in fund balance (**)	43,813	(5,664)	38,149	2,852	(24,938)	(22,086)
Fund balance:						
January 1, 2011				243,464	461,840	705,304
December 31, 2011	246,316	436,902	683,218	246,316	436,902	683,218
December 31, 2012	290,129	431,238	721,367			

** Equals change in net position on Statement of Activities

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF NET POSITION
MODIFIED CASH BASIS
ENTERPRISE FUNDS
AS OF DECEMBER 31, 2012

	Water Fund	Sewer Fund	Airport Fund	Total Enterprise Funds
ASSETS				
Current assets:				
Cash and cash equivalent	108,349	79,986		188,335
Certificates of deposit	22,000	105,468		127,468
Total current assets	130,349	185,454	0	315,803
Noncurrent assets:				
Restricted cash and cash equivalent	12,768			12,768
Total assets	143,117	185,454	0	328,571
NET POSITION				
Restricted - debt service	12,768			12,768
Unrestricted	130,349	185,454		315,803
Total net position	143,117	185,454	0	328,571
			CLOSED	

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF RECEIPTS, DISBURSEMENTS, AND CHANGES
IN NET POSITION -- MODIFIED CASH BASIS
ENTERPRISE FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2012
FOR THE YEAR ENDING DECEMBER 31, 2011

	2012				2011			
	Water Fund	Sewer Fund	Airport Fund	Total	Water Fund	Sewer Fund	Airport Fund	Total
Operating receipts:								
Charges for goods and services	215,779	91,393		307,172	200,938	59,964	6,307	267,209
Total operating receipts	215,779	91,393	0	307,172	200,938	59,964	6,307	267,209
Operating disbursements:								
Personal services	35,524	34,173		69,697	34,146	33,423		67,569
Other current services	23,456	34,079		57,535	26,567	18,213	8,585	53,365
Cost of goods sold	73,980			73,980	71,308			71,308
Total operating disbursements	132,960	68,252	0	201,212	132,021	51,636	8,585	192,242
Excess operating receipts (disbursements)	82,819	23,141	0	105,960	68,917	8,328	(2,278)	74,967
Nonoperating receipts (disbursements):								
Interest received	664	2,913		3,577	609	2,624	8	3,241
State grant		8,000		8,000				0
BB refundable credit	12,562			12,562	11,694			11,694
Loan pymts - principal	(15,804)			(15,804)	(14,734)			(14,734)
- interest	(39,057)			(39,057)	(36,338)			(36,338)
Total nonoperating receipts (disbu	(41,635)	10,913	0	(30,722)	(38,769)	2,624	8	(36,137)
Excess receipts (disbursements) before transfers	41,184	34,054	0	75,238	30,148	10,952	(2,270)	38,830
Transfers in (out) - general			(10,550)	(10,550)			1,000	1,000
Change in net position	41,184	34,054	(10,550)	64,688	30,148	10,952	(1,270)	39,830
Net position:								
January 1, 2011					71,785	140,448	11,820	224,053
December 31, 2011	101,933	151,400	10,550	263,883	101,933	151,400	10,550	263,883
December 31, 2012	143,117	185,454	0	328,571				
			CLOSED					

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF CASH FLOWS-- MODIFIED CASH BASIS
ENTERPRISE FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2012
FOR THE YEAR ENDING DECEMBER 31, 2011

	2012				2011			
	Water Fund	Sewer Fund	Airport Fund	Total	Water Fund	Sewer Fund	Airport Fund	Total
Cash flows from:								
Operating activities:								
Receipts from customers	215,779	91,393		307,172	200,938	59,964	6,307	267,209
Payments to employees	(35,524)	(34,173)		(69,697)	(34,146)	(33,423)		(67,569)
Payments to suppliers	(97,436)	(34,079)		(131,515)	(97,875)	(18,213)	(8,585)	(124,673)
Net cash provided (used) by operating activities	82,819	23,141	0	105,960	68,917	8,328	(2,278)	74,967
Noncapital financing activities:								
Transfers in (out)			(10,550)	(10,550)			1,000	1,000
State grant		8,000		8,000				
BB refundable credit	12,562			12,562	11,694			11,694
Capital financing activities:								
RD loan pymts - principal	(15,804)			(15,804)	(14,734)			(14,734)
- interest	(39,057)			(39,057)	(36,338)			(36,338)
Investing activities:								
Interest received	664	2,913		3,577	609	2,624	8	3,241
Purchase cert. of deposit		(2,885)		(2,885)		(2,599)		(2,599)
Net increase (decrease) in cash and cash equivalents	41,184	31,169	(10,550)	61,803	30,148	8,353	(1,270)	37,231
Cash and cash equivalents:								
January 1, 2011					49,785	40,464	11,820	102,069
December 31, 2011	79,933	48,817	10,550	139,300	79,933	48,817	10,550	139,300
December 31, 20012	121,117	79,986	0	201,103				
			CLOSED					
Reconciliation of operating income (loss) to net cash provided (used) by operating activities:								
Operating income (loss)	82,819	23,141	0	105,960	68,917	8,328	(2,278)	74,967
Net cash provided (used) by operating activities	82,819	23,141	0	105,960	68,917	8,328	(2,278)	74,967

Noncash investing, capital and financing activities: None

See accompanying notes.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As discussed further in note 1.c, these financial statements are presented on a modified cash basis of accounting. The modified cash basis of accounting differs from accounting principles generally accepted in the United States of America (GAAP). Generally accepted accounting principles include all relevant Governmental Accounting Standards Board (GASB) pronouncements.

a. Reporting Entity:

The funds and account groups included in this report are controlled by or dependent upon the City of Faulkton's (City) Governing Board.

The City's officials at December 31, 2012 are:

Mayor:
Tim Bormann

Finance Officer:
Lisa Raethz

Governing Board:
Kathy Biedenfeld, President
David Hadrick
William Kalkman
Slade Roseland
Gene Traver
Steve Wanner

Attorney:
Emily Sovell

The City's financial reporting entity is composed of the following:

Financial Reporting Entity:
Primary Government: - The City of Faulkton
Component Unit: - Faulkton Housing and Redevelopment Commission

To determine the financial reporting entity, the City complies with the provisions of GASB Statement No. 14, *The Financial Reporting Entity*.

The reporting entity of the City of Faulkton consists of (1) the primary government, which includes all of the funds, organizations, institutions, agencies, departments, and offices that make up the legal entity, plus those funds for which the primary government has a fiduciary responsibility, even though those fiduciary funds may represent organizations that do not meet the criteria for inclusion in the financial reporting entity; (2) those organizations for which the primary government is financially accountable; and (3) other organizations for which the nature and significance of their relationship with the primary government are such that their exclusion would cause the financial reporting entity's financial statements to be misleading or incomplete.

Component units are legally separate organizations for which the elected officials of the primary government are financially accountable. The City is financially accountable if its governing board appoints a voting majority of another organization's governing body and it has the ability to impose its will on that organization, or there is a potential for that organization to provide specific financial benefits to, or impose specific financial burdens on the City (the primary government). The City may also be financially accountable for another organization if that organization is fiscally dependent on the City unless that organization can, without the approval of the City: (1) set its own budget; (2) determine its own rates or charges; and (3) borrow money.

Based upon the application of these criteria, the Faulkton Housing and Redevelopment Commission (Commission) is a component unit of the City of Faulkton and represents 100% of the balances and activity of the discretely presented component unit column of these financial statements.

The Commission is organized to provide housing by building and renting out two 4-plex housing units. The City has guaranteed two 25% of Essential Function Housing Development Bonds issued by the Commission. At December 31, 2012 the balances of the two bonds were $196,975 and $272,209. The books of the Commission are available at the Faulkton City Hall. The Commission is established under SDCL 11-7-7.

b. Basis of Presentation:

Government-wide Financial Statements:

The government-wide financial statements include the Statement of Net Position and the Statement of Cash Activities. These statements display information about the reporting entity as a whole. They include all funds of the reporting entity except for fiduciary funds (if any). The statements distinguish between governmental and business-type activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange revenues. Business-type activities are financed in whole or in part by fees charged to external parties for good and services.

The Statement of Net Position reports all cash assets. Net position is displayed in two components: restricted (distinguishing between major categories of restrictions) and unrestricted.

The Statement of Activities presents a comparison between direct disbursements and program receipts for each function of the City's governmental activities and for each segment of City's business-type activities. Direct disbursements are associated with a specific program or function and are clearly identifiable to a particular function. Program receipts include (a) charges paid by recipients of goods and services offered by the program and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Receipts that are not classified as program receipts, including all taxes and interest, are presented as general receipts.

Fund Financial Statements:

The fund financial statements include specific information about individual funds used by the reporting entity. Each fund is considered a separate accounting entity with a separate set of self-balancing accounts that constitutes its cash, net position, receipts and disbursements. Funds are organized into three major categories: governmental, enterprise, and fiduciary (if any). An emphasis is placed on major funds within the governmental and enterprise categories. A fund is considered major if it is the primary operating fund of the City or if it meets the following criteria:

a. Total cash, receipts or disbursements of the individual governmental or enterprise fund are at least 10 percent of the corresponding element total (cash, receipts or disbursements) for all funds of that category (that is, total governmental or total enterprise), and

b. The same element that meets the 10 percent criterion in (a) is at least 5 percent of the corresponding element total for all governmental and enterprise funds combined.

c. In addition to funds that meet the major fund criteria, any other governmental or enterprise fund that the government's official believe is particularly important to financial statement users (for example, because of public interest or consistency) may be reported as a major fund.

The City has elected to classify all of its funds as major funds.

Funds of the City are described below within their respective fund type:

Governmental Funds

General Fund - a fund established by South Dakota Codified Law (SDCL) 4-11-6 to met all the general operational costs of the City except those required to be accounted for in another fund. The general fund is always a major fund.

Special Revenue Funds - special revenue funds are used to account for the proceeds of specific revenue sources (other than trusts for individuals, private organizations, or other governments or for major capital projects) that are legally restricted to expenditures for specified purposes. The City has the following special revenue funds:

Special Revenue Fund Type - 2nd Cent Sales Tax Fund - A fund established by City of Faulkton's Ordinance No. 6 to collect an additional 1% sales tax to be used for capital improvements, including water, sewer and airport improvements.

Enterprise Funds
(Business-Type)

Enterprise Funds - Enterprise funds are used to account for activity for which a fee is charged to external users for goods or services. The City has the following enterprise funds:

Water Fund - A fund established by SDCL 9-47-1 to provide water to customers within the City of Faulkton. The water fund is a major fund.

Sewer Fund - A fund established by SDCL 9-48-2 to provide sewer services to customers within the own of Faulkton. The sewer fund is a major fund.

Fiduciary Funds

Fiduciary funds are never considered to be major funds.

The City of Faulkton has no fiduciary funds.

c. Measurement Focus and Basis of Accounting:

Measurement focus is a term used to describe "how" transactions are recorded within the various financial statements. Basis of accounting refers to "when" revenues and expenditures or expenses (disbursements) are recognized in the accounts and reported in the financial statements, regardless of the measurement focus. The City's basis of accounting is the modified cash basis of accounting, which is a basis of accounting other than US-GAAP. Under US-GAAP, transactions are recorded in the accounts when revenues are earned and liabilities are incurred. Under the modified cash basis of accounting, transactions are recorded when cash is received or disbursed.

Measurement Focus:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities, both governmental and business-type activities are presented using the economic resources measurement focus, applied within the limitations of the modified cash basis of accounting as described below.

Fund Financial Statements:

In the fund financial statements, the "current financial resources" measurement focus or the "economic resources" measurement focus is used, applied within the limitations of the modified cash basis of accounting.

Basis of Accounting:

In the government-wide Statement of Net Position and Statement of Activities and the fund financial statements, governmental, business-type, and major fund activities are presented using a modified cash basis of accounting.

The modified cash basis of accounting involves the measurement of cash and cash equivalents and changes in cash and cash equivalents resulting from cash receipts and disbursement transactions. Under the modified cash basis of accounting, the statement of net position reports only cash and cash equivalents. Under the modified cash basis of accounting, transactions are recorded in the accounts when cash and/or cash equivalents are received or disbursed and assets and liabilities are recognized to the extent cash has been received or disbursed. Acceptable modifications to the cash basis of accounting implemented by the City in these financial statements are certificates of deposit (if any) whose maturity when purchased is more than 90 days.

As a result of the use of this modified cash basis of accounting, certain assets and their related revenues (such as accounts receivable and revenue for billed or provided services not yet collected) and certain liabilities and their related expenses (such as accounts payable and expenses for goods and services received but not yet paid, and accrued expenses and liabilities) are not recorded in these financial statements.

If the City applied US-GAAP, the fund financial statements for governmental funds would use the modified accrual basis of accounting and the fund financial statements for enterprise funds and fiduciary funds (if any) would use the accrual basis of accounting. All government-wide financials would be presented on the accrual basis of accounting.

d. Cash and Cash Equivalents:

For purposes of financial reporting, "cash and cash equivalents" includes all demand and savings accounts and certificates of deposit or short-term investments with a term to maturity at date of acquisition of three months or less. Investments (if any) in open-end mutual funds shares or similar investments in external investment pools, are also considered to be cash equivalents.

The City's certificate of deposit has a maturity of more than three months when purchased and are not considered a cash equivalent for the statement of cash flows.

Under the modified cash basis of accounting, investments are carried at cost.

e. Interfund Transactions:

Transactions that constitute reimbursements to a fund for disbursements made from it, and that are properly applicable to another fund, are recorded as a disbursement in the reimbursing fund and as reductions of disbursements in the fund that is reimbursed. All other interfund transactions are reported as transfers.

f. Program Receipts and General Receipts:

Program Receipts:
In the government-wide Statement of Activities, reported program receipts derive directly from the program itself or from parties other than the City's taxpayers or citizenry, as a whole. Program receipts are classified in three categories, as follows:

1. Charges for services - These arise from charges to customers, applicants, or others who purchase, use, or directly benefit from the goods, services, or privileges provided, or are otherwise directly affected by the services.

2. Program-specific operating grants and contribution - These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for use in a particular program.

3. Program-specific capital grants and contribution - These arise from mandatory and voluntary non-exchange transactions with other government, organization, or individuals that are restricted for the acquisition of capital assets for use in a particular program.

General Receipts:
General receipts include all receipts not specifically earmarked for a specific program. General receipts include all taxes, interest received, unrestricted receipts from federal, state, or county governments, and miscellaneous receipts not related to a program. These receipts are not restricted and can be used or the regular operation of the City.

g. Enterprise Fund Receipt Classifications:

In both the government-wide statements and fund financial statements, enterprise fund *operating* receipts, such as charges for water and sewer services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. *Nonoperating* revenues, if any, such as grants, operating subsidies, interest received, and transfers in, result from nonexchange transactions.

h. Equity Classifications:

Government-wide financial Statements:

Equity is classified as net position and is displayed in two components:

1. Restricted Net Position - Consists of net position with constraints placed on their use either by (a) external groups such as creditor, grantor, contributors, or laws and regulations of other governments; or (b) law through constitutional provisions or enabling legislation.

2. Unrestricted Net Position - All other net position that does not meet the definition of "restricted net position".

Fund Financial Statements:

Governmental fund equity is classified as "Fund Balance", and may distinguish between "Nonspendable", "Restricted", "Committed, "Assigned", and "Unassigned" components. Enterprise fund equity is classified as "Net Position", the same as in the government-wide financial statements. Fiduciary fund equity (if any) (except for agency funds, which have no fund equity) is reported as "Net Position Held in Agency Capacity."

i. Application of Net Position:

It is the City's policy to first use restricted net position, prior to the use of unrestricted net position, when an expense is incurred which can be charged to either restricted or unrestricted net position.

j. Fund Cash Balance Classification Policies and Procedures:

In accordance with Government Accounting Standards Board (GASB) No. 54, Fund Balance Reporting and Governmental Fund Type Definitions, the City classifies governmental fund balances as follows:

* Nonspendable - includes fund cash balance amounts that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

* Restricted - includes fund cash balance amounts that are constrained for specific purposes which are externally imposed by providers, such as creditors, or amounts constrained due to constitutional provisions or enabling legislation.

* Committed - includes fund cash balance amounts that are constrained for specific purposes that are internally imposed by the government through formal action at the highest level of decision making authority and does not lapse at year-end.

* Assigned - includes fund cash balance amounts that are intended to be used for specific purposes that are neither considered restricted or committed. Fund cash balance may be assigned by the Board of Trustees or Finance Officer.

* Unassigned - includes positive fund cash balance within the general fund which has not been classified within the above categories and negative fund balance amounts in other governmental funds.

The City of Faulkton fund cash balance classifications are made up of:

Fund Balance Classifications	Account or Fund	Authority or Action	Amount
Nonspendable	None		0
Restricted	None		0
Committed	2nd Cent Fund	Ordinance	431,238
Assigned	Key deposit	Resolution	750
Assigned	Capital projects	Resolution	25,000
Unassigned	General		264,379
			721,367

The City uses "restricted" and "committed" amounts first when restricted and unrestricted fund balance is available unless there are legal documents/ contracts that prohibit doing this, such as a grant agreement requiring dollar for dollar spending. Additionally, the City would first use "committed", then "assigned", and lastly "unassigned" amounts of unrestricted fund balance when expenditures are made.

The City does not have a formal minimum fund cash balance policy.

The purpose of each special revenue fund and revenue source is:

Special Revenue Fund:	Revenue Source: (see page 14)
* 2nd Cent	Sales tax

2. VIOLATIONS OF FINANCE-RELATED LEGAL AND CONTRACTUAL PROVISIONS

The City is prohibited by statute from spending in excess of appropriated amounts by department within a fund. In 2012 the City went over its general fund airport budget line item by $4,379. In the future, the City expects to make contingency transfers or adopt supplemental appropriations to cover expenditures that will exceed their original appropriation. This budget overdraft is not considered a material or significant finding with respect to these financial statements.

3. DEPOSITS, INVESTMENTS AND RELATED RISKS

Except for restricted cash held by 3rd parties and bank certificates of deposit purchased for an individual fund, the City follows the practice of aggregating deposits of its various funds to maximize cash management efficiency and returns. Various restrictions on deposits and investments are imposed by statutes. These restrictions are summarized below:

Deposits - The City deposits are made in qualified public depositories as defined by SDCL 4-6A-1, 9-22-6, 9-22-6.1 and 9-22-6.2. Qualified depositories are required by SDCL 4-6A-3 to maintain, at all times, segregated from their other assets, eligible collateral having a value equal to at least 100 percent of the public deposit accounts which exceed deposit insurance such as FDIC and NCUA. In lieu of pledging eligible securities, a qualified public depository may furnish irrevocable standby letters of credit issued by federal home loan banks accompanied by written evidence of that bank's public debt rating which may not be less than "AA" or a qualified public depository may furnish a corporate surety bond of a corporation authorized to do business in South Dakota.

Deposits are reported at cost, plus interest, if the account is the add-on type.

Actual bank balances at December 31, 2012 were as follows: Insured $500,000, Collateralized ** $412,381, for a total of $912,381.

** Uninsured, collateral jointly held by state's/municipality's agent in the name of the state and the pledging financial institution.

The carrying amount of these deposits at December 31, 2012 was $1,049,938 held as follows.

Dakota Bank Faulkton (Faulkton, SD):	
Checking	$ 386,518
Savings	251,550
Savings: deposit-in-transit	179,688
Certificates of deposit	232,032
	$ 1,049,788
Petty cash	150
	$ 1,049,938

Certificates of deposit (if any), with a term to maturity of greater than 3 months when purchased, were insured or collateralized and are considered deposits.

4. INVESTMENTS AND RELATED RISKS

In general, SDCL 4-5-6 permits City money to be invested only in (a) securities of the United States and securities guaranteed by the United States government either directly or indirectly or (b) repurchase agreements fully collateralized by securities described in (a) or (c) in shares of an open-end, no-load fund administered by an investment company whose investments are in securities described in (a) and repurchase agreements described in (b). Also, SDCL 4-5-9 requires investments to be in the physical custody of the political subdivision or may be deposited in a safekeeping account with any bank or trust company designated by the political subdivision as its fiscal agent.

During the two years ending December 31, 2012 the City had no investments.

Investment Risk - State law limits eligible investments for the City as discussed above. The City has no investment policy that would further limit its investment choices.

Custodial Risk (Investments) - The risk that, in the event of a default by the counterparty to a transaction, the City will not be able to recover the value of an investment or collateral securities held by the counterparty.

Custodial Risk (Deposits) - The risk that, in the event of a depository failure, the City's deposits may not be returned to it. At December 31, 2012, the City's deposits in financial institutions were not exposed to custodial deposit risks.

Concentration of Credit Risk - the City places no limit on the amount that may be invested in any one institution. The amount of investment in an institution is shown above.

Interest Rate Risk - The City does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Assignment of Investment Income - State law allows income from deposits and investments to be credited to either the general fund or the fund making the deposit or investment. The City's policy is to credit all income from deposits and investments to the fund making the investment.

5. LONG-TERM DEBT

A summary of changes in long-term liabilities is presented as supplementary information on page 33. The City did not have any short-term or conduit debt in 2011 or 2012.

6. FUTURE REVENUES PLEDGED TO SECURE DEBT

All water fund net revenue (after normal operating, repair and maintenance expenses) is pledged to secure the Water Project Revenue Bond, Series 2009 which has a remaining balance of $1,094,852 and a SRF Drinking Water loan which has a remaining balance of $112,233 at December 31, 2012. These debts were incurred to cover the cost of water improvements as described on page 33. The bonds will mature in 2050 and the SRF loan will mature in 2042. In 2012 the debt had pledged revenue of $82,819 and total payments of $54,861.

7. WATER PURCHASE AGREEMENT

The City of Faulkton entered into an agreement with WEB Water Development Association, Inc. to provide water to the City for $1.45 per 1,000 gallons plus an indefinite minimum monthly charge of $1,833.00 for WEB's debt service, capital improvements and water line maintenance.

8. RESTRICTED NET POSITION

The following table shows the December 31, 2012 net position restricted for specific purposes as shown on the statement of net position

Purpose:	Restricted By:	Governmental	Business-Type
Capital projects	Ordinance	431,238	
Debt	Contract		12,768
Total Restricted Net Position		431,238	12,768

9. INTERFUND TRANSFERS

Transfers "in" and "(out)" between funds were:

2012	Governmental	Enterprise	Purpose
General	10,550		Operations
Airport		(10,550)	Transfer to close fund
	10,550	(10,550)	

2011	Governmental	Enterprise	Purpose
General	(1,000)		Operations
Airport		1,000	Operations
	(1,000)	1,000	

10. RETIREMENT PLAN

All employees, except for part-time employees, participate in the South Dakota Retirement System (SDRS), a cost-sharing, multiple employer public employee retirement system established to provide retirement benefits for employees of the State of South Dakota and its political subdivisions. SDRS provides retirement, disability and survivors benefits. The right to receive retirement benefits vests after three years of credited service. Authority for establishing, administering and amending plan provisions are found in South Dakota Codified Law 3-12. SDRS issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to SDRS, PO Box 1098, Pierre, SD 57501-1098 or calling (605) 773-3731.

General employees are required by statute to contribute 6% of their salary to the plan, while public safety and judicial employees contribute at 8% and 9% respectively. State statute also requires the employer to contribute an amount equal to the employee's contribution. State statute also requires the employer to make an additional contribution in the amount of 6.2% for any compensation exceeding the maximum taxable amount for social security for general employees only. The City's share of contributions to the SDRS for the years ending December 31, 2012, 2011, and 2010 were $6,727, $6,766 and $6,558 (employer's share) respectively, equal to the required contributions each year.

There are no deferred contributions.

11. PROPERTY TAX

Property taxes are levied on or before October 1, of the year preceding the start of the fiscal year. They attach as an enforceable lien on property, and become due and payable as of January 1, the first day of the fiscal year. Taxes are payable in two installments on or before April 30 and October 31 of the fiscal year.

The City is permitted by several state statutes to levy varying amounts of taxes per $1,000 of taxable valuation on taxable real property in the City.

12. INSURANCE

The City is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions, injuries to employees; and natural disasters. During the two years ending December 31, 2012 the City managed its risks as follows:

Employee Health Insurance:
The City joined the South Dakota Municipal League Health Pool of South Dakota. This is a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays a monthly premium to the pool to provide health insurance coverage for its employees. The pool purchases reinsurance coverage with the premiums it receives from the members. The coverage also includes a $2,000,000 lifetime maximum payment per person.

The City does not carry additional health insurance coverage to pay claims in excess of this upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Liability Insurance:

The City joined the South Dakota Public Assurance Alliance (SDPAA), a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays an annual premium to the pool to provide coverage for property, boiler and machinery, general liability, officials liability, and automobile insurance.

The agreement with the SDPAA provides that the above coverage's will be provided to a $1,000,000 limit. Member premiums are used by the pool for payment of claims and to pay for reinsurance for claims in excess of $250,000 for property coverage and $500,000 for liability coverage to the upper limit. The City carries a $500 deductible for officials liability.

The objective of the SDPAA is to administer and provide risk management services and risk sharing facilities to the members and to defend and protect the members against liability, to advise members on loss control guidelines and procedures, and provide them with risk management services, loss control and risk reduction information and to obtain lower cost for that coverage. The City's responsibility is to promptly report to and cooperate with the SDPAA to resolve any incident which could result in a claim being made by or against the City. The City pays an annual premium, to provide liability coverage detailed above, under a claims-made policy and the premiums are accrued on the ultimate cost of the experience to date of the SDPAA member, based on their exposure or type of coverage.

A portion of the member premiums are also allocated to a cumulative reserve fund. The City would be eligible to receive a refund for a percentage of the amount allocated to the cumulative reserve on the following formula:

End of the City's:
First Full Year (50%), Second Full Year (60%), Third Full Year (70%)
Fourth Full Year (80%), Fifth Full Year (90%), Sixth Full Year (100%)

As of December 31, 2012, the City has a vested balance in the cumulative reserve fund of $17,224.

The City does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Airport Liability Coverage:
The City has purchased airport liability coverage through a commercial insurance carrier.

Worker's Compensation:
The City joined the South Dakota Municipal League Workers' Compensation Fund, a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays an annual premium to the pool to provide worker's compensation coverage for its employees. Coverage limits are set by state statute. The pool pays the first $650,000 of any claim per individual. The pool has reinsurance which covers up to statutory limits in addition to a separate combined employer liability limit of $2,000,000 per incident.

The objective of the Fund is to formulate, develop, and administer, on behalf of the member organizations, a program of worker's compensation coverage, to obtain lower costs for that coverage, and to develop a comprehensive loss control program.

The City's responsibility is to initiate and maintain a safety program to give its employees safe and sanitary working conditions and to promptly report to and cooperate with the Fund to resolve any worker's compensation claims. The City pays an annual premium, to provide worker's compensation coverage for its employees, under a self-funded program and the premiums are accrued based on the ultimate cost of the experience to date of the Fund members. The City may also be responsible for additional assessments in the event the pool is determined by its board of trustees to have inadequate reserves to satisfy current obligations or judgments. Additional assessments, if any, are to be determined on a prorated basis based upon each participant's percentage of contribution in relation to the total contributions to the pool of all participants for the year in which the shortfall occurs.

The City does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Unemployment Benefits:
The City provides coverage for unemployment benefits by paying into the Unemployment Compensation Fund established by state law and managed by the State of South Dakota. No unemployment payments were made during the two years ending December 31, 2012 and none are expected in 2013.

13. LITIGATION

At December 31, 2012, the City was not a party to litigation or pending legal action. However, as discussed in the risk management note above, the City has liability coverage for itself and its employees through South Dakota Public Assurance Alliance. Therefore, should there be legal action, it is not expected to have a material effect on the City's financial statements.

14. OTHER DISCLOSURES AND SUBSEQUENT EVENTS

The City has no material unallowed related party activity.

The City does not offer any Other Post Employment Benefits.

The city has a rubble site. It does not have a landfill with any associated closure costs or liabilities.

The City pays the Development Corporation $15,000 a year to maintain the Community Center.

In 2013 the City will receive a 30 year 3.25% SRF loan of $902,000 for storm sewer improvements.

In 2013 the City added equipment and a storage facility to the airport for approximately $300,000.

In 2013 the City awarded an airport water line project for $46,306.

In 2013 the City agreed to contribute $2,500 a year for three years to the Faulkton Area Development Corporation as part of a NESDCAP Rural Community Development Initiative Grant.

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2012

GENERAL FUND	Budgeted Amounts				Actual	Variance
Receipts:	Original	Contingency Transfers	Supplemental	Final	(Modified Cash Basis)	Positive (Negative)
Receipts from local sources:						
Taxes:						
Ad valorem taxes	180,078			180,078	172,286	(7,792)
Sales and use tax	130,000			130,000	143,135	13,135
Amusement tax				0	156	156
Licenses and permits:	9,230			9,230	11,604	2,374
Intergovernmental receipts:	32,350			32,350	49,547	17,197
Charges for goods and services	8,300			8,300	15,755	7,455
Fines and forfeits				0	1,220	1,220
Miscellaneous receipts:	12,700			12,700	16,543	3,843
Total receipts	372,658	0	0	372,658	410,246	37,588
Disbursements:						
General government:						
Mayor and Council	15,655			15,655	14,422	1,233
Contingency	10,000			10,000		10,000
Amount transferred		(770)		(770)		(770)
Elections	600			600	48	552
Financial administration	55,352			55,352	51,824	3,528
Other	26,666			26,666	19,829	6,837
Public safety:						
Police	41,500			41,500	41,500	0
Fire	9,500	156		9,656	9,656	0
Public works:						
Highways and streets	146,393			146,393	131,749	14,644
Solid waste	7,167		3,200	10,367	9,514	853
Cemetery	3,000			3,000	3,000	0
Airport	4,860			4,860	9,239	(4,379)
Health and welfare:						
West Nile	7,275			7,275	7,275	0
Culture and recreation:						
Recreation	45,651	614	2,700	48,965	46,597	2,368
Parks	6,875		200	7,075	6,369	706
Community center	16,275			16,275	16,091	184
Conservation and development:						
Economic devel. - assistance	10,000			10,000	10,000	0
Total disbursements	406,769	0	6,100	412,869	377,113	35,756
Excess of receipts over (under) disbursements	(34,111)	0	(6,100)	(40,211)	33,133	73,344
Other financing sources (uses):						
Transfer in				0	10,550	10,550
Sale of surplus property				0	130	130
Change in fund balance	(34,111)	0	(6,100)	(40,211)	43,813	84,024
Fund balance:						
January 1, 2012	246,316			246,316	246,316	0
December 31, 2012	212,205	0	(6,100)	206,105	290,129	84,024

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2011

GENERAL FUND	Budgeted Amounts				Actual	Variance
Receipts:	Original	Contingency Transfers	Supplemental	Final	(Modified Cash Basis)	Positive (Negative)
Receipts from local sources:						
Taxes:						
Ad valorem taxes	165,171			165,171	164,457	(714)
Sales and use tax	130,000			130,000	143,609	13,609
Amusement tax				0	168	168
Licenses and permits:	8,615			8,615	10,513	1,898
Intergovernmental receipts:	31,580			31,580	40,191	8,611
Charges for goods and services	8,260			8,260	10,104	1,844
Fines and forfeits				0	1,824	1,824
Miscellaneous receipts:	9,700			9,700	12,672	2,972
Total receipts	353,326	0	0	353,326	383,538	30,212
Disbursements:						
General government:						
Mayor and Council	15,355		200	15,555	14,517	1,038
Contingency	10,000			10,000		10,000
Amount transferred		(94)		(94)		(94)
Elections	600			600	45	555
Financial administration	51,381		1,600	52,981	49,995	2,986
Other	22,831		5,000	27,831	25,713	2,118
Public safety:						
Police	41,500			41,500	41,500	0
Fire	9,150		221	9,371	9,371	0
Public works:						
Highways and streets	174,860		7,500	182,360	156,768	25,592
Solid waste	10,072			10,072	8,514	1,558
Cemetery	3,000			3,000	3,000	0
Health and welfare:						
West Nile	7,300			7,300	7,063	237
Culture and recreation:						
Recreation	43,287	94	4,700	48,081	41,001	7,080
Parks	8,366			8,366	5,976	2,390
Community center	16,250			16,250	15,956	294
Conservation and development:						
Economic dev. - assistance	5,000			5,000	5,000	0
Total disbursements	418,952	0	19,221	438,173	384,419	53,754
Excess of receipts over (under) disbursements	(65,626)	0	(19,221)	(84,847)	(881)	83,966
Other financing sources (uses):						
Transfer (out)	0			0	(1,000)	(1,000)
Sale of surplus property	0			0	4,733	4,733
Net change in fund balance	(65,626)	0	(19,221)	(84,847)	2,852	87,699
Fund balance:						
January 1, 2011	243,464			243,464	243,464	0
December 31, 2011	177,838	0	(19,221)	158,617	246,316	87,699

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2012

2ND CENT SALES TAX FUND (Reserved for capital improvements)	Budgeted Amounts			Actual (Modified Cash Basis)	Variance Positive (Negative)
	Original	Supplementals	Final		
Receipts:					
Receipts from local sources:					
Taxes:					
Sales and use tax	448,000		448,000	143,135	(304,865)
Intergovernmental receipts:					
Federal grant - airport			0	217,802	217,802
State grant - airport			0	5,004	5,004
Rural Development grant			0	825	825
Miscellaneous receipts:					
Interest received			0	855	855
Total receipts	448,000	0	448,000	367,621	(80,379)
Disbursements:					
General government:					
City Hall	5,000		5,000	3,146	1,854
Public works:					
Streets			0	100,000	(100,000)
Airport	440,000		440,000	266,314	173,686
Water		31,790	31,790	31,790	0
Culture and recreation:					
Pool	3,000		3,000	3,000	0
Total disbursements	448,000	31,790	479,790	404,250	75,540
Excess of receipts over (under) disbursements	0	(31,790)	(31,790)	(36,629)	(4,839)
Other financing sources (uses):					
SRF loan, forgiven			0	23,967	23,967
SRF loan			0	6,998	6,998
Change in fund balance	0	(31,790)	(31,790)	(5,664)	26,126
Fund balance:					
January 1, 2012	436,902		436,902	436,902	0
December 31, 2012	436,902	(31,790)	405,112	431,238	26,126

FOR THE YEAR ENDING DECEMBER 31, 2011

2ND CENT SALES TAX FUND (Reserved for capital improvements)	Budgeted Amounts			Actual (Modified Cash Basis)	Variance Positive (Negative)
	Original	Supplementals	Final		
Receipts:					
Receipts from local sources:					
Taxes:					
Sales and use tax	730,000		730,000	143,609	(586,391)
Intergovernmental receipts:					
Rural Development grant			0	678,469	678,469
Miscellaneous receipts:					
Interest received			0	1,302	1,302
Total receipts	730,000	0	730,000	823,380	93,380
Disbursements:					
General government:					
City Hall	20,000		20,000		20,000
Public works:					
Highways and streets	200,000		200,000	122,010	77,990
Water and debt servic	200,000	940,000	1,140,000	1,087,572	52,428
Airport	220,000		220,000		220,000
Recreation	60,000	17,828	77,828	77,828	0
Park	30,000		30,000	29,128	872
Total disbursements	730,000	957,828	1,687,828	1,316,538	371,290
Excess of receipts over (under) disbursements	0	(957,828)	(957,828)	(493,158)	464,670
Other financing sources (uses):					
SRF loan, forgiven			0	362,402	362,402
SRF loan			0	105,818	105,818
Change in fund balance	0	(957,828)	(957,828)	(24,938)	932,890
Fund balance:					
January 1, 2011	461,840		461,840	461,840	0
December 31, 2011	461,840	(957,828)	(495,988)	436,902	932,890

CITY OF FAULKTON

BUDGETARY SUPPLEMENTARY INFORMATION

NOTES TO THE BUDGETARY COMPARISON SCHEDULES FOR THE GENERAL FUND AND 2ND CENT FUND FOR THE TWO YEARS ENDING DECEMBER 31, 2012

1. BUDGETS AND BUDGETARY ACCOUNTING

The City of Faulkton (City) follows these procedures in establishing the budgetary data reflected in the budgetary supplementary information:

a. At the first regular board meeting in September of each year or within ten days thereafter, the governing board introduces the annual appropriation ordinance for the ensuing fiscal year.

b. After adoption by the governing board, the operating budget is legally binding and actual expenditures for each purpose cannot exceed the amounts budgeted, except as indicated in d.

c. A line item for contingencies may be included in the annual budget. Such a line item may not exceed 5 percent of the total municipal budget and may be transferred by resolution of the governing board to any other budget category that is deemed insufficient during the year.

d. If it is determined during the year that sufficient amounts have not been budgeted, state statute allows the adoption of supplemental budgets. During 2012 there was one supplemental budget to the general fund and the 2nd cent fund. See page and 29 and 31. During 2011 there was one supplemental budget to the general fund and the 2nd cent fund. See page and 30 and 31.

e. Formal budgetary integration is employed as a management control device for the general fund and 2nd cent fund.

f. Budgets for the general fund and 2nd cent fund are not adopted on a basis consistent with generally accepted accounting principles (GAAP) because all accounting, and the adoption of the all budgets, is on a modified cash basis of accounting.

2. GAAP AND BUDGETARY ACCOUNTING BASIS DIFFERENCE:

The financial statements prepared in conformity with US-GAAP (within the context of the modified cash basis of accounting) present capital outlay disbursement information as a separate category of disbursements. Under the budgetary basis of accounting, capital outlay disbursements are reported within the function to which they relate. For example, the purchase of a road grader would be reported as a capital outlay disbursement in the governmental funds statement of receipts, disbursements and changes in fund cash balance. However, in the budgetary supplemental information schedule, the purchase of a road grader would be reported as a disbursement in the public works function of general fund, along with all other current public works disbursements.

CITY OF FAULKTON

SCHEDULE OF CHANGES IN LONG-TERM DEBT
FOR THE TWO YEARS ENDING DECEMBER 31, 2012

	Beginning 12-31-10	2011 Additions (Deletions)	2012 Additions (Deletions)	Governmental Funds Ending 12-31-12	Enterprise Funds Ending 12-31-12	Principal Payments Due in 2013
BUSINESS-TYPE						
2010 Water Project Bond, Series 2009:						
Original amount of $1,141,000						
Maturing in 2050						
Interest at 3.25%						
Monthly payments of $4,256						
Paid by the water fund	1,124,808	(14,735)	(15,221)		1,094,852	15,680
2011 SRF Drinking Water #2:						
Original amount of $112,816						
Maturing 7-15-2042						
Interest at 3.00%						
Quarterly payments of $1,429		105,818	6,998			
Paid by the water fund	0	0	(583)		112,233	2,376
Totals	1,124,808	91,083	(8,806)		1,207,085	18,056

SCHEDULE OF PAYMENTS FOR LONG-TERM DEBT
AT DECEMBER 31, 2012

	Total Payment	Principal	Interest	Balance
2010 Water Project Bond, Series 2009:				
2013	51,072	15,680	35,392	1,079,172
2014	51,072	16,197	34,875	1,062,975
2015	51,072	16,731	34,341	1,046,244
2016	51,072	17,283	33,789	1,028,961
2017	51,072	17,853	33,219	1,011,108
2018-2022	255,360	98,499	156,861	912,609
2023-2027	255,360	115,853	139,507	796,756
2028-2032	255,360	136,266	119,094	660,490
2033-2037	255,360	160,274	95,086	500,216
2038-2042	255,360	188,513	66,847	311,703
2043-2047	255,360	220,437	34,923	91,266
2048-2050	94,151	91,266	2,885	0
Totals	1,881,671	1,094,852	786,819	
2011 SRF Drinking Water #2:				
2013	5,716	2,376	3,340	109,857
2014	5,717	2,448	3,269	107,409
2015	5,716	2,522	3,194	104,887
2016	5,717	2,599	3,118	102,288
2017	5,716	2,678	3,038	99,610
2018-2022	28,582	14,658	13,924	84,952
2023-2027	28,582	17,020	11,562	67,932
2028-2032	28,582	19,764	8,818	48,168
2033-2037	28,582	22,949	5,633	25,219
2038-2042	28,582	25,219	3,363	0
Totals	171,492	112,233	59,259	

CITY OF FAULKTON

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS
FOR THE TWO YEARS ENDING DECEMBER 31, 2012

Grantor Program Name		CFDA Number	2012 Expenditures	2011 Expenditures
Direct Federal Funding:				
Department of Agriculture:				
Rural Development:				
Water and Waste Disposal Systems for Rural Communities:				
Water project (note 2)				
DWSRF No. C462217-01 - Grant	ARRA	10.781	825	623,771
Total Department of Agriculture			825	623,771
Indirect Federal Funding:				
Department of Transportation:				
Pass-through State of South Dakota Department of Transportation:				
Airport Aid Program #AIP 3-46-0016-006-2012		20.106	217,802	
Total Department of Transportation			217,802	0
Environmental Protection Agency:				
Passed through South Dakota Department of Environment and Natural Resources				
Drinking Water State Revolving Fund (note 2)				
DWSRF Project No. C462217-02 - 77.4% loan forgiveness		66.468	23,967	334,053
Total Environmental Protection Agency			23,967	334,053
Grand Total of Expenditures of Federal Awards			242,594	957,824

Federal loans outstanding at December 31, 2012:
USDA - Rural Development:
2010 Water Project Revenue Bond, Series 2009 1,094,852

Note 1:
This schedule of expenditures of federal awards includes federal grant activity for the City of Faulkton. It is presented on a modified cash basis of accounting, the same as the City's financial statements.
The information in this schedule is presented in accordance with the requirements of OMB Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations".

Note 2:
This represents a major federal financial assistance program.

REPORT ON
COMPLIANCE AND OTHER MATTERS AND ON
INTERNAL CONTROL OVER FINANCIAL REPORTING
BASED ON AN AUDIT OF FINANCIAL STATEMENTS
PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Governing Board
City of Faulkton
Faulkton, South Dakota

INDEPENDENT AUDITOR'S REPORT

I have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the modified cash basis of accounting financial statements of governmental activities, business-type activities, and each major fund, of the City of Faulkton (City), Faulk County, South Dakota, as of December 31, 2012 and for each of the years in the biennial period then ended, and the related notes to the financial statements, which collectively comprise the City's basic financial statements and have issued my report thereon dated July 19, 2013 which was unmodified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City of Faulkton's financial statements are free of material misstatement, I performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of my audit and, accordingly, I do not express such an opinion.

The results of my tests disclosed an instance of noncompliance or other matters that is required to be reported under *Government Auditing Standards* and which is described in the accompanying schedule of current audit findings and questioned costs as item 2012-01.

Internal Control Over Financial Reporting

In planning and performing my audit of the financial statements, I considered the City of Faulkton's internal control over financial reporting (internal control) to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing my opinions on the financial statement, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, I do not express an opinion on the effectiveness of the City of Faulkton's internal control.

A *deficiency in internal control* exist when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis.

A *material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of City of Faulkton's financial statements will not be prevented, or detected and corrected on a timely basis.

A *significant deficiency*, is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

My consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. Given these limitations, during my audit I did not identify any deficiencies in internal control that I consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

I did identify certain deficiencies in internal control, described in the accompanying schedule of current audit findings and questioned costs that I consider to be significant deficiencies. I consider the deficiencies described in the accompanying schedule of current audit findings and questioned costs as items 2012-01 and 2012-02 to be significant deficiencies.

I did note other matters involving internal control that I reported to the governing body and management of the City of Faulkton in a separate Letter of Comments dated July 19, 2013.

Management's Response to Findings

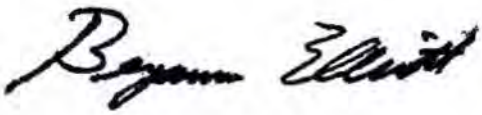
Management's responses to the findings identified in my audit are described in the accompanying schedule of current audit findings and questioned costs. Management's responses were not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, I express no opinion on them.

Purpose of this Report

The purpose of this report is solely to describe the scope of my testing of compliance and internal control over financial reporting, and the results of that testing, and not to provide an opinion on the effectiveness of the City's compliance or internal control over financial reporting. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's compliance and internal control over financial reporting. Accordingly this communication is not suitable for any other purpose.

As required by South Dakota Codified Law 4-11-11, this report is a mater of public record and its distribution is not limited.

Independent Audit Services, PC
Benjamin Elliott, CPA
Madison, South Dakota



July 19, 2013

REPORT ON
COMPLIANCE WITH REQUIREMENTS
THAT COULD HAVE A DIRECT AND MATERIAL
EFFECT ON EACH MAJOR PROGRAM
AND ON INTERNAL CONTROL OVER COMPLIANCE
IN ACCORDANCE WITH OMB CIRCULAR A-133

Governing Board
City of Faulkton
Faulkton, South Dakota

INDEPENDENT AUDITOR'S REPORT

Report on Compliance for Each Major Federal Program

I have audited City of Faulkton, Faulk County, South Dakota, (City) compliance with the types of compliance requirements described in the *U.S. Office of Management and Budget (OMB) Circular A-133 Compliance Supplement* that could have a direct and material effect on each of the City's major federal programs for the biennial period ended December 31, 2012. The City's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of current audit findings and questioned costs (page 40).

Management's Responsibility

Management is responsible for compliance with the requirements of laws, regulations, contracts and grants applicable to its federal programs.

Auditor's Responsibility

My responsibility is to express an opinion for each of the City's major federal programs based on my audit of the types of compliance requirements referred to above.

I conducted my audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Controller General of the United States; and OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 require that I plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above, that could have a direct and material effect on a major federal program, occurred. An audit includes examining, on a test basis, evidence about the City's compliance with those requirements and performing such other procedures as I considered necessary in the circumstances.

I believe that my audit provides a reasonable basis for my opinion on each major federal program. However, my audit does not provide a legal determination on the City's compliance.

Opinion on Each Major Federal Program

In my opinion, the City of Faulkton complied, in all material respects, with the types of requirements referred to above that could have a direct and material effect on each of its major federal programs for the biennial period ended December 31, 2012.

Other Maters

The results of my auditing procedures disclosed an instance of noncompliance, which is required to be reported in accordance with OMB Circular A-133 and which is described in the accompanying schedule of current audit findings and questioned costs as item 2012-03. My opinion on each major federal program is not modified with respect to this matter.

Management's response to noncompliance finding 2012-03 identified in my audit is described in the accompanying schedule of current audit findings and questioned costs. Management's response was not subject to the auditing procedures applied in the audit of compliance and, accordingly, I express no opinion on the response.

Internal Control Over Compliance:

Management of the City of Faulkton is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing my audit of compliance, I considered the City's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with OMB Circular A-133, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, I do not express an opinion on the effectiveness of the City's internal control over compliance.

A *deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis.

A *material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis.

A *significant deficiency in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

My consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. I did not identify any deficiencies in internal control over compliance that I consider to be material weaknesses.

However, I identified a deficiency in internal control over compliance, described in the accompanying schedule of current audit findings and questioned costs as item 2012-03 that I consider to be a significant deficiency.

Management's response to noncompliance finding 2012-03 identified in my audit is described in the accompanying schedule of current audit findings and questioned cost. Management's response was not subject to the auditing procedures applied in the audit of compliance and, accordingly, I express no opinion on it.

Purpose of this Report

The purpose of this report on internal control over compliance is solely to describe the scope of my testing of internal control over compliance and the results of that testing based on the requirements of OMB Circular A-133. Accordingly this report is not suitable for any other purpose.

However, as required by South Dakota Codified Law 4-11-11, this report and my report on compliance for each major federal program are matters of public record and their distribution is not limited.

Independent Audit Services, PC
Benjamin Elliott, CPA
Madison, South Dakota

July 19, 2013

CITY OF FAULKTON
SCHEDULES OF FINDINGS
DECEMBER 31, 2012

SCHEDULE OF PRIOR AUDIT FINDINGS

Prior Federal Compliance Audit finding:
2010-02: [Late Filing] -- Corrected

Prior Other Audit Findings:
2010-01: [Budget Overdraft] -- Corrected.
2006-02: [Financial Statement Preparation] -- Repeated below as item 2012-02.

SCHEDULE OF CURRENT AUDIT FINDINGS AND QUESTIONED COSTS

Part I - Summary of the Audit:

Financial Statements

Type of auditor's report issued:

Disclaimer on:
Faulkton Housing and Redevelopment Commission
Unqualified on:
Governmental Activities
Business-Type Activities
All Funds

Noncompliance noted:	Item: 2012-01
Internal control over financial reporting:	
* Significant deficiency(ies) identified that are not considered to be material weaknesses?	Items: 2012-01 and 2012-02
* Material weakness(es) identified?	None Reported

Federal Awards

Noncompliance material to major federal program identified?	None Reported
Internal control over major programs:	
* Material weakness(es) identified?	None Reported
* Significant deficiency(ies) identified that are not considered to be material weaknesses?	Item: 2012-03
Type of auditor's report issued on compliance for major programs:	Unqualified
Any audit findings disclosed that are required to be reported in accordance with section 510(a) of OMB Circular A-133?	Item: 2012-03

Identification of major programs:

CFDA 10.781 Water and Waste Disposal Systems for Rural Communities (ARRA)
CFDA 66.468 Capitalization Grants for Drinking Water State Revolving Funds

Dollar threshold used to distinguish between type A and type B programs:	$300,000
Auditee qualified as low-risk auditee:	No

Part II - Findings Relating to the Financial Statements

Finding 2012-01: Water Project Accounting
(compliance and internal control)

Criteria:
Government Accounting and Financial Reporting Standards Codification Section 1600.130 says that all enterprise funds are to use the economic resources measurement focus. This means that all activity pertaining to an enterprise fund needs to be accounted for within that enterprise fund.

Condition:
The 2011 and 2012 water projects were accounted for in the 2nd cent fund and not the water fund.

Effect:
Activity accounted for in an incorrect fund can result in misleading financial statements.

Recommendations:
I recommend water projects be accounted for in the water fund and not the 2nd cent fund. This also applies to sewer projects. If needed, money can be transferred from the 2nd cent to the water or sewer funds to help finance a project.

Management Response:
In the future the City will account for water and sewer projects within those funds.

Finding 2012-02: Financial Statement Preparation
(internal control)

Criteria:
A good system of internal control contemplates an adequate system for recording and processing entries material to the financial statements.

Condition:
The City has elected not to have an internal control system designed to provide for the preparation of the financial statement being audited. As the auditor, I was requested to draft these financial statements and accompanying notes to the financial statements.

Possible Effect:
This control deficiency could result in a misstatement of the financial statements that would not be prevented or detected.

Recommendations:
This situation is not unusual for an entity of the City's size. It is the responsibility of management, and those charged with governance, to make the decision whether to accept the degree of risk associated with this condition because of cost or other considerations.

Management Response:
Due to cost constraints, the City will continue to have the auditor draft the financial statements and accompanying notes to the financial statements.

Part III - Findings Relating to the Federal Awards

Finding 2012-03: Water Line Capital Asset Records
(compliance and internal control)

Criteria:
The Office of Management and Budget's Circular A-102 (Common Rule), requires a record be kept of equipment purchased with federal funds, costing more than $5,000 and having a useful life of more than one year.

Condition:
The City purchased and installed water lines with federal funds costing more than $5,000 and with a useful life of more than one year. However, the City has not added these water lines to its capital asset records.

Questioned Costs:
None

Possible Effect:
If these water lines are not added to the City's capital asset records, in time the City will lose track of the value of these water lines.

Recommendations:
The these water lines should be added to the City's capital asset records.

Corrective Action Plan:
The City of Faulkton's finance officer, Lisa Raethz, is the contact person responsible for this corrective action plan. She will add these water lines to the City's capital asset records.

CITY OF FAULKTON

FAULKTON, SOUTH DAKOTA

FINANCIAL REPORT

FOR THE TWO YEARS ENDING DECEMBER 31, 2014

WITH INDEPENDENT AUDITOR'S REPORTS

D. L. A.

DRAFT

9-4-2015

INDEPENDENT AUDIT SERVICES, P.C.

Benjamin Elliott, CPA
P.O. Box 262
Madison, South Dakota 57042

CITY OF FAULKTON
FAULKTON, SOUTH DAKOTA

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FOR THE TWO YEARS ENDING DECEMBER 31, 2014

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NOTE: All figures shown in this financial report are in U.S. dollars.
For space considerations, the "$" symbol is not used.

INDEPENDENT AUDIT SERVICES, PC
Benjamin Elliott, CPA
P.O. Box 262
Madison, South Dakota 57042
605.483.3225

Governing Board
City of Faulkton
Faulkton, South Dakota

INDEPENDENT AUDITOR'S REPORT

I have audited the accompanying modified cash basis of accounting financial statements of governmental activities, business-type activities, and each major fund of the City of Faulkton (City), Faulk County, South Dakota, as of December 31, 2014 and for each of the years in the biennial period then ended, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

I did not audit the modified cash basis of accounting financial statements of the Faulkton Housing and Redevelopment Commission which represents 100% of the cash assets, net position, receipts and disbursements of the discretely presented component unit on the government-wide statement of net position and statement of activities.

Management's Responsibility for the Financial Statements

The City's management is responsible for the preparation and fair presentation of these financial statements in accordance with the modified cash basis of accounting described in note 1.c; this includes determining that the modified cash basis of accounting is an acceptable basis for the preparation of these financial statements in the circumstances. Management is responsible for the design, implementation, and maintenance of internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatements, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express opinions on these financial statements based on my audit. I conducted my audit in accordance with auditing standards generally accepted in the United States of America and the standard applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risk of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the City's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, I express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I obtained is sufficient and appropriate to provide a basis for my audit opinions.

Basis for Disclaimer of Opinion

The modified cash basis of accounting financial statements of the Faulkton Housing and Redevelopment Commission have not been audited. I was not engaged to audit these modified cash basis of accounting financial statements as part of my audit of the City of Faulkton's modified cash basis of accounting financial statements. These financial statements are included in the City's basic financial statement as a discretely presented component unit and represents 100% of the cash assets, net position, receipts and disbursements of the City's discretely presented component unit.

Disclaimer of Opinion

The financial statements, referred to above, of the financial position and changes in financial position of the discretely presented component unit of the City of Faulkton, South Dakota as of December 31, 2014 and for each of the years in the biennial period then ended were not audited by me and, accordingly, I do not express an opinion on them.

Unmodified Opinions

In my opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position on a modified cash basis of accounting of governmental activities, business-type activities, and each major fund of the City of Faulkton, South Dakota, as of December 31, 2014, and the respective changes in its financial position and, where applicable, cash flows thereof for each of the years in the biennial period then ended in accordance with the modified cash basis of accounting described in note 1.c to these financial statements.

Basis of Accounting

I draw attention to note 1.c of these financial statements, which describes the basis of accounting. These financial statements are prepared on the modified cash basis of accounting, which is a basis of accounting other than accounting principles generally accepted in the United States of America. My opinion is not modified with respect to this matter.

Other Matters - Other Supplementary Information (Opinion)

My audit was conducted for the purpose of forming opinions on the modified cash basis of accounting financial statements that collectively comprise the City of Faulkton's financial statements.

> The schedule of changes in long-term debt (page 33) is presented for the purpose of additional analysis and is not a required part of the modified cash basis of accounting financial statements.

The schedule of changes in long-term debt is the responsibility of management and is derived from and relates directly to the underlying accounting and other records used to prepare the modified cash basis of accounting financial statements. The information has been subject to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements, or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America.

In my opinion, the schedule of changes in long-term debt is fairly stated, in all material respects, in relation to the modified cash basis of accounting financial statements as a whole.

Other Matters - Other Supplementary Information (No Opinion)

My audit was conducted for the purpose of forming opinions on the modified cash basis of accounting financial statements that collectively comprise the City of Faulkton's financial statements.

The management's discussion and analysis (page 4 to 9) and the budgetary comparison schedules (page 29 to 32) are presented for purposes of additional analysis and are not a required part of the modified cash basis of accounting financial statements.

I have applied certain limited procedures to this supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the formation and comparing the information for consistency with management's responses to my inquiries, the basic financial statements, and other knowledge I obtained during my audit of the basic financial statements. I do not express an opinion or provide any assurance on this information because the limited procedures do not provide me with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, I have also issued my report (page 34) dated September 2, 2015 on my tests of City of Faulkton's compliance with certain provisions of laws, regulations, contracts and other matters and my consideration of its internal control over financial reporting. The purpose of that report is to describe the scope of my testing of compliance and internal control over financial reporting, and the results of that testing, and not to provide an opinion on compliance or internal control over financial reporting. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's compliance and internal control over financial reporting.

Independent Audit Services, PC
Benjamin Elliott, CPA
Madison, South Dakota

September 2, 2015

MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)

Our discussion and analysis of the City of Faulkton's (City) financial performance provides an overview of the City's financial activities for the two years ending December 31, 2014, within the limitations of the City's modified cash basis of accounting. Please read it in conjunction with the City's financial statements.

FINANCIAL HIGHLIGHTS	2014	2013
Receipts:		
Charges for goods and services	358,637	363,783
Operating grants	11,315	11,627
Capital grants	60,013	54,400
General receipts	625,951	576,828
SRF loan proceeds	781,194	
Total	1,837,110	1,006,638
Disbursements:		
Governmental	562,278	505,644
Business-type	1,120,736	338,683
Total	1,683,014	844,327
Increase in Net Position	154,096	162,311
Net Position:		
December 31, 2012		1,049,938
December 31, 2013	1,212,249	1,212,249
December 31, 2014	1,366,345	
Governmental Funds:		
General	305,656	336,569
2nd Cent	658,064	471,599
Business-Type Funds:		
Water	132,486	179,490
Sewer	270,139	224,591
Total	1,366,345	1,212,249

<u>During 2014, the City</u>:

Received:

218,386 from property taxes
334,152 from sales taxes
60,013 from an airport grant
781,194 from an SRF loan for sewer improvements

Paid:

123,563 for airport improvements
68,281 for street improvements
53,094 for water improvements
787,303 for sewer improvements
18,690 down on two water loans

During 2013, the City:

Received:

180,011 from property taxes
326,084 from sales taxes
54,400 from airport grants

Paid:

38,073 for airport improvements
71,002 for street improvements
48,390 for water improvements
55,081 for sewer improvements
18,099 down on two water loans

BRIEF DISCUSSION OF THE BASIC FINANCIAL STATEMENTS

The financial report consists of three parts: (1) management's discussion and analysis (page 4 to 9), (2) the basic financial statements (page 10 to 28) and (3) other supplementary information (page 29 to 32). The basic financial statements include two types of statements that present the City from two different financial points of view.

Government-wide financial statements (View #1):

The first two statements are government-wide financial statements that provide both long-term and short-term information about the City's overall financial status.

Fund financial statements (View #2):

The remaining financial statements are fund financial statements that focus on significant operations of the governmental and enterprise activities of the City.

The governmental financial statements tell how general governmental services were financed in the short-term, as well as what remains for future spending. Governmental funds operated by the City at the two years ending of December 31, 2014 are the General and 2nd Cent Funds.

The enterprise fund financial statements offer short-term and long-term financial information about the activities of the City that operate like a business. Enterprise funds operated by the City include the Water and Sewer Funds.

The fiduciary fund financial statements provide information about the financial status of activities in which the City acts solely as a trustee or agent for the benefit of those groups to whom these funds belong. In 2013 and 2014 the City had no fiduciary funds.

The financial statements include notes that explain in more detail some of the information found in the financial statements. The financial statements are also followed by a section of supplementary information that presents a budgetary analysis for the general fund and major special revenue funds.

Supplementary Information:

The Management's Discussion and Analysis (page 4 to 9) and the Budgetary Comparison Schedules (page 29 to 32) are supplementary information. Such information provides readers of this report with additional data that supplements the government-wide statements and fund financial statements. The Budgetary Comparison Schedule is presented on a budgetary basis of accounting, which reports capital expenditures within their respective expenditure function rather than as a separate capital outlay expenditure.

The schedule of changes in debt (page 33) is presented for purposes of additional analysis and is not a required part of the basic financial statements.

Here is an overview of the City's financial statements.

```
Management's                    Government-wide
Discussion and            |--->Financial
Analysis                  |    Statements
   |                      |
Basic Financial           |    Fund
Statements ----------->   |--->Financial
   |                      |    Statements
   |                      |
Supplementary             |    Notes to the
Information               |--->Financial
(other than MD&A)              Statements
```

Here is a summary of the major features of these financial statement.

	Government-wide Statements	Fund Statements: Governmental Funds	Fund Statements: Enterprise Funds
Scope	Entire City (including component units if any)	City activities except enterprise (water and sewer)	Activities operated like a private business (water and sewer)
Required Financial Statements	Statement of Net Position	Balance Sheet	Statement of Net Position
Required Financial Statements	Statement of Activities	Statement of Receipts Disbursemrents and Changes in Fund Balances	Statement of Cash Receipts, Disbursements and Changes in Net Position
Basis of Accounting	Modified Cash	Modified Cash	Modified Cash
Measurement Focus	Modified Cash	Modified Cash	Modified Cash
Types of assets & Liabilities	Only cash No liabilities	Only cash No liabilities	Only cash No liabilities
Types of Revenue and Expenditures or Expense	Cash receipts Cash disbursements	Cash receipts Cash disbursements	Cash receipts Cash disbursements

BASIS OF ACCOUNTING

The City has elected to present its financial statements on a modified cash basis of accounting. This modified cash basis of accounting is a basis of accounting other than generally accepted accounting principles. Basis of accounting is a reference to *when* financial events are recorded, such as the timing for recognizing revenues, expenses, and their related assets and liabilities. Under the City's modified cash basis of accounting, revenues and expenses and related assets are recorded when they result from cash transactions, except for the recording of investments.

GOVERNMENT-WIDE STATEMENTS
(Reporting the City as a whole)

The government-wide statements (page 10 to 12) report information about the City as a whole using cash accounting methods similar to those used by private-sector companies. The statement of net position includes all of the City's cash. The statement of activities includes all of the year's receipts and disbursements.

The two government-wide statements report the City's net position and how it has changed. Net position is the City's petty cash, checking accounts, certificates of deposit and money market accounts. The change in these accounts is one way to measure the City's financial health. Increases or decreases in net position measures improvements or declines in the City's financial health. To assess the City's overall financial health you also need to consider other factors such as changes in the property tax base, and/or sales tax receipts generated from local businesses.

The government-wide financial statements have two broad categories of information: governmental activity and business-type activity.

The governmental activities include basic services such care of streets, police protection, community center, pool, and capital projects. Property taxes, sales taxes, interest earnings finance most of these activities. Bonds and federal and state grants help pay for capital improvements.

The business-type activities account for the City's water and sewer activities. These services are funded by user fees.

FUND FINANCIAL STATEMENTS
(Reporting the City's most significant funds)

The fund financial statements (page 13 to 17) provide more detailed information about the City's most significant funds - not the City as a whole. Funds are accounting tools used to keep track of the City's receipts and disbursements. State law requires the use of some funds and the City Council establishes other funds to manage money for a specific purpose, like a capital project.

The fund financial statements show information in two broad categories: governmental and enterprise (business-type).

Governmental funds: Most of the City's basic services are included in the governmental funds, which focus on (1) how cash flows in and out of that fund, and (2) cash balances left at year-end which are available for spending in the next year. The governmental funds financial statements provide detail that helps you determine whether there is more or fewer cash resources available for spending in the near future to finance the City's programs.

Enterprise fund: Services for which the City charges the customer a fee are generally reported in enterprise funds. These funds account for cash and the receipt and disbursement of cash, the same as the governmental funds. The water and sewer funds are the only enterprise funds maintained by the City.

MATERIAL CHANGES IN STATEMENT OF NET POSITION AND STATEMENT OF ACTIVITIES

For the Year Ending December 31, 2014
(Material changes for governmental activities = changes greater than $50,000)
(Material changes for business-type activities = changes greater than $30,000)

	Increase (Decrease)	Reason
Governmental Activities:		
Cash	155,552	Excess cash receipts over cash disbursements.
Public works	72,664	Additional airport improvements.
Business-type Activities:		
Sewer costs	753,187	Sewer improvement project.
Loan proceeds	781,194	New sewer SRF loan.

For the Year Ending December 31, 2013
(Material changes for governmental activities = changes greater than $50,000)
(Material changes for business-type activities = changes greater than $30,000)

	Increase (Decrease)	Reason
Governmental Activities:		
Cash	86,801	Excess cash receipts over cash disbursements.
Capital grants	(173,900)	Reduced airport improvement grants.
Public works	(299,038)	Reduced airport improvements.
Business-type Activities:		
Cash	75,510	Excess cash receipts over cash disbursements.
Charges for services	35,835	Increased water and sewer rates.
Water costs	50,434	Water line improvements.
Sewer costs	32,176	Sewer improvement project.

SIGNIFICANT VARIATIONS BETWEEN ORIGINAL AND FINAL GENERAL FUND BUDGET

In 2014 the City adopted a general fund budget of $766,633 which is a decrease of $9,082 or 1.17% from 2013. The decrease was spread across several line items. There were no supplemental appropriations to the general fund budget. See page 29 for more information.

In 2013 the City adopted a general fund budget of $775,715 which is an increase of $362,846 or 87.88% from 2012. The increase was mainly for airport activities. There was one supplemental appropriation for $17,000 to the general fund budget. See page 30 for more information.

SIGNIFICANT CAPITAL ASSET ACTIVITY

Significant capital asset activity is reported above.

SIGNIFICANT LONG-TERM DEBT ACTIVITY

During 2014 the City made principal payments of $18,690 on two wter loans. At December 31, 2014 these loans had a balance of $1,062,887 and $107,409. Also in 2014 the City received new SRF sewer loan proceeds of $781,194 and made no payments on this loan. During 2013 the City made principal payments of $18,099 on two water loans. At December 31, 2013 these loans had a balance of $1,079,129 and $109,857. See also page 33 for more information.

The City has guaranteed 25% of three Faulkton Housing & Redevelopment Rev Bonds which had balances of $174,783; $256,341; and $1,100,000 at December 31, 2014.

CURRENTLY KNOWN FACTS

In 2015 the City:

* Purchased a 924K loader for $153,390.
* Completed the GA terminal building for approximately $169,000.
* Conducted a public meeting regarding sewer line replacement and relining for an estimated cost of $5,151,000 which would increase sewer rates to about $40 a month.
* Considered applying for a 60/40 split Community Access Grant to improve 15th Avenue from Pearl Street to the hospital.
* Received a base bid of $344,430 for hanger and taxilane improvements using some $286,530 of available federal entitlements.
* Approved re-organization of the Housing & Redevelopment Commission Board to include 2 member of the City Council.

CONTACTING THE CITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide our citizens, taxpayers, customers, investors and creditors with a general overview of the City's finances and to demonstrate the City's accountability for the money it receives. If you have questions about this report or need additional information, contact the City of Faulkton's business office at 105 8th Avenue North, Faulkton, SD 57438-0021. Phone 605.598.6515.

CITY OF FAULKTON

118,438

TABLE 1 - NET POSITION
MODIFIED CASH BASIS - BASED ON GOVERNMENT-WIDE STATEMENT OF POSITION
AS OF DECEMBER 31, 2014, 2013, and 2012

	Governmental Activities			Business-Type Activities			Total Government		
	2014	2013	2012	2014	2013	2012	2014	2013	2012
Cash assets:									
Cash	858,108	702,924	616,803	274,100	275,928	201,103	1,132,208	978,852	817,906
Certif. of deposit	105,612	105,244	104,564	128,525	128,153	127,468	234,137	233,397	232,032
Total	963,720	808,168	721,367	402,625	404,081	328,571	1,366,345	1,212,249	1,049,938
Net position:									
Restricted				60,336	53,132	46,994	60,336	53,132	46,994
Unrestricted	963,720	808,168	721,367	342,289	350,949	281,577	1,306,009	1,159,117	1,002,944
Total	963,720	808,168	721,367	402,625	404,081	328,571	1,366,345	1,212,249	1,049,938

TABLE 2 - CHANGES IN NET POSITION
MODIFIED CASH BASIS - BASED ON GOVERNMENT-WIDE STATEMENT OF ACTIVITIES
FOR THE THREE YEARS ENDING DECEMBER 31, 2014

	Governmental Activities			Business-Type Activities			Total Government		
	2014	2013	2012	2014	2013	2012	2014	2013	2012
Receipts:									
Program receipts:									
Charges for service:	22,116	20,776	23,787	336,521	343,007	307,172	358,637	363,783	330,959
Operating grants				11,315	11,627	12,562	11,315	11,627	12,562
Capital grants	60,013	54,400	228,300			8,000	60,013	54,400	236,300
General receipts:									
Property taxes	218,386	180,011	172,286				218,386	180,011	172,286
Sales taxes	334,152	326,084	286,270				334,152	326,084	286,270
Other taxes	132	108	156				132	108	156
State sources	48,064	43,383	42,456				48,064	43,383	42,456
County sources	2,422	4,844	2,422				2,422	4,844	2,422
Interest received	1,365	1,290	3,802	511	946	3,577	1,876	2,236	7,379
Rent and franchise :	18,814	17,804	15,848				18,814	17,804	15,848
Donations	150	388	564				150	388	564
Miscellaneous	1,555		1,976				1,555	0	1,976
Total receipts	707,169	649,088	777,867	348,347	355,580	331,311	1,055,516	1,004,668	1,109,178
Disbursements:									
General government	92,529	108,826	89,269				92,529	108,826	89,269
Public safety	51,648	51,488	51,156				51,648	51,488	51,156
Public works	325,232	252,568	551,606				325,232	252,568	551,606
Health and welfare	6,783	66	7,275				6,783	66	7,275
Culture/recreation	66,911	71,517	72,057				66,911	71,517	72,057
Economic developmen	19,175	21,179	10,000				19,175	21,179	10,000
Water				267,121	238,255	187,821	267,121	238,255	187,821
Sewer				853,615	100,428	68,252	853,615	100,428	68,252
Total disbursements	562,278	505,644	781,363	1,120,736	338,683	256,073	1,683,014	844,327	1,037,436
Net position increase (decrease) before transfers	144,891	143,444	(3,496)	(772,389)	16,897	75,238	(627,498)	160,341	71,742
Other financing sources (uses):									
Transfers in (out)	10,261	(58,613)	10,550	(10,261)	58,613	(10,550)	0	0	0
Loan proceeds			30,965	781,194			781,194	0	30,965
Sale of surplus prope:	400	1,970	130				400	1,970	130
Change in net positio:	155,552	86,801	38,149	(1,456)	75,510	64,688	154,096	162,311	102,837
Net position:									
December 31, 2011			683,218			263,883			947,101
December 31, 2012		721,367	721,367		328,571	328,571		1,049,938	1,049,938
December 31, 2013	808,168	808,168		404,081	404,081		1,212,249	1,212,249	
December 31, 2014	963,720			402,625			1,366,345		

CITY OF FAULKTON

STATEMENT OF NET POSITION
MODIFIED CASH BASIS
AS OF DECEMBER 31, 2014

	Primary Government			
	Governmental Activities	Business-Type Activities	Total	Unaudited Component Unit
ASSETS:				
Cash and cash equivalents	200,044	274,100	474,144	3,113
Money market	658,064		658,064	94,601
Certificates of deposit	105,612	128,525	234,137	39,686
Total assets	963,720	402,625	1,366,345	137,400
NET POSITION:				
Restricted for:				
Construction			0	79,021
Debt service		22,982	22,982	
Deposits		37,354	37,354	675
Unrestricted	963,720	342,289	1,306,009	57,704
Total net position	963,720	402,625	1,366,345	137,400

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF ACTIVITIES
MODIFIED CASH BASIS
FOR THE YEAR ENDING DECEMBER 31, 2014

Functions/Programs:	Disbursements	Program Receipts: Charges for Services and Reimbursements	Program Receipts: Operating Grants and Contributions	Program Receipts: Capital Grants and Contributions	Net Receipts (Disbursements) and Changes in Net Position: Governmental Activities	Net Receipts (Disbursements) and Changes in Net Position: Business-type Activities	Net Receipts (Disbursements) and Changes in Net Position: Totals	Unaudited Component Unit
Primary government:								
Governmental activities:								
General government	92,529	6,174			(86,355)		(86,355)	
Public safety	51,648				(51,648)		(51,648)	
Public works	325,232	2,527		60,013	(262,692)		(262,692)	
Health and welfare	6,783				(6,783)		(6,783)	
Culture and recreation	66,911	13,415			(53,496)		(53,496)	
Economic development	19,175				(19,175)		(19,175)	
Total governmental activities	562,278	22,116	0	60,013	(480,149)	0	(480,149)	0
Business-type activities:								
Water	267,121	208,713	11,315			(47,093)	(47,093)	
Sewer	Expenses 853,615	127,808	Base Fee			(725,807)	(725,807)	
Total business-type activities	1,120,736	336,521	11,315	0	0	(772,900)	(772,900)	0
Total primary government	1,683,014	358,637	11,315	60,013	(480,149)	(772,900)	(1,253,049)	0
Component unit activity:								
Faulkton Housing & Redev Commission	1,085,725	67,574						(1,018,151)

	Governmental Activities	Business-type Activities	Totals	Unaudited Component Unit
General receipts:				
Taxes:				
Property taxes	218,386		218,386	
Sales taxes	334,152		334,152	
Amusement taxes	132		132	
State shared receipts	48,064		48,064	
County shared receipts	2,422		2,422	
Interest received	1,365	511	1,876	268
Rents and franchise fees	18,814		18,814	
Donations	150		150	
Miscellaneous receipts	1,555		1,555	
Sale of surplus property	400		400	
SRF loan proceeds	0	781,194	781,194	
Bank loan proceeds	0		0	1,100,000
Transfers	10,261	(10,261)	0	
Total general receipts, special items and transfers	635,701	771,444	1,407,145	1,100,268
Change in net position	155,552	(1,456)	154,096	82,117
Net position:				
January 1, 2014	808,168	404,081	1,212,249	55,283
December 31, 2014	963,720	402,625	1,366,345	137,400

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF ACTIVITIES
MODIFIED CASH BASIS
FOR THE YEAR ENDING DECEMBER 31, 2013

Functions/Programs:	Disbursements	Program Receipts: Charges for Services and Reimbursements	Program Receipts: Operating Grants and Contributions	Program Receipts: Capital Grants and Contributions	Net Receipts (Disbursements) and Changes in Net Position: Governmental Activities	Net Receipts (Disbursements) and Changes in Net Position: Business-type Activities	Net Receipts (Disbursements) and Changes in Net Position: Totals	Unaudited Component Unit
Primary government:								
Governmental activities:								
General government	108,826	7,521			(101,305)		(101,305)	
Public safety	51,488				(51,488)		(51,488)	
Public works	252,568	4,001		54,400	(194,167)		(194,167)	
Health and welfare	66				(66)		(66)	
Culture and recreation	71,517	9,254			(62,263)		(62,263)	
Economic development	21,179				(21,179)		(21,179)	
Total governmental activities	505,644	20,776	0	54,400	(430,468)	0	(430,468)	0
Business-type activities:								
Water	238,255	214,431	11,627			(12,197)	(12,197)	
Sewer	100,428	128,576				28,148	28,148	
Total business-type activities	338,683	343,007	11,627	0	0	15,951	15,951	0
Total primary government	844,327	363,783	11,627	54,400	(430,468)	15,951	(414,517)	0
Component unit activity:								
Faulkton Housing & Redev Commission	69,551	65,945						(3,606)

	Governmental Activities	Business-type Activities	Totals	Unaudited Component Unit
General receipts:				
Taxes:				
Property taxes	180,011		180,011	
Sales taxes	326,084		326,084	
Amusement taxes	108		108	
State shared receipts	43,383		43,383	
County shared receipts	4,844		4,844	
Interest received	1,290	946	2,236	686
Rents and franchise fees	17,804		17,804	
Donations	388		388	
Sale of surplus property	1,970		1,970	
Transfers	(58,613)	58,613	0	
Total general receipts, special items and transfers	517,269	59,559	576,828	686
Change in net position	86,801	75,510	162,311	(2,920)
Net position:				
January 1, 2013	721,367	328,571	1,049,938	58,203
December 31, 2013	808,168	404,081	1,212,249	55,283

See accompanying notes.

CITY OF FAULKTON

BALANCE SHEET -- MODIFIED CASH BASIS
ALL GOVERNMENTAL FUNDS
AS OF DECEMBER 31, 2014

	General Fund	2nd cent Fund	Total
ASSETS:			
Cash and cash equivalents	200,044		200,044
Interest bearing accounts		658,064	658,064
Certificates of deposit	105,612		105,612
Total assets	305,656	658,064	963,720
FUND BALANCES:			
Nonspendable			0
Restricted			0
Committed		658,064	658,064
Assigned - Key deposit	750		750
Assigned - Capital projects	35,000		35,000
Unassigned	269,906		269,906
Total fund balances	305,656	658,064	963,720 *

* Equals net position on
statement of net position

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND BALANCES -- MODIFIED CASH BASIS -- ALL GOVERNMENTAL FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2014
FOR THE YEAR ENDING DECEMBER 31, 2013

	2014			2013		
	General Fund	2nd Cent Fund	Total	General Fund	2nd Cent Fund	Total
Receipts:						
Local sources:						
Taxes:						
Ad valorem taxes	218,386		218,386	180,011		180,011
General sales and use taxes	167,076	167,076	334,152	163,042	163,042	326,084
Amusement taxes	132		132	108		108
Licenses and permits:	6,057		6,057	7,144		7,144
Intergovernmental:						
Federal shared receipts:						
Grant - Airport	60,013		60,013	33,097		33,097
State shared revenue:						
State grants - airport			0	21,303		21,303
Bank franchise tax	682		682	640		640
Liquor tax revision	5,426		5,426	5,052		5,052
Motor vehicle licenses (5%)	11,703		11,703	10,491		10,491
Highway and bridge	30,253		30,253	26,600		26,600
Other			0	600		600
County shared revenue: road tax	2,422		2,422	4,844		4,844
Charges for goods and services:						
Highway and streets	2,347		2,347			0
Solid waste	180		180	200		200
Sale of white goods			0	3,351		3,351
Mowing			0	450		450
Recreation - pool	8,576		8,576	7,948		7,948
Recreation - ball park	2,350		2,350			0
Recreation - camping	1,900		1,900	1,062		1,062
Recreation - carousel	589		589	244		244
Fines and forfeits:	117		117	377		377
Miscellaneous:						
Interest earned	561	728	1,289	778	418	1,196
Dividends	76		76	94		94
Rents and cable franchise	18,814		18,814	17,804		17,804
Donations	150		150	388		388
Other	1,555		1,555			0
Total receipts	539,365	167,804	707,169	485,628	163,460	649,088
Disbursements:						
Current:						
General government:						
Mayor and Council	15,498		15,498	13,753		13,753
Elections	612		612	25		25
Financial administration	59,585		59,585	58,837		58,837
Other	16,834		16,834	36,211		36,211
Public safety:						
Police	41,500		41,500	41,500		41,500
Fire	10,148		10,148	9,988		9,988
Public works:						
Highways and streets	118,517		118,517	129,112		129,112
Solid waste	7,920		7,920	7,248		7,248
Airport	3,951		3,951	4,133		4,133
Cemetery	3,000		3,000	3,000		3,000
Health and welfare:						
West Nile	6,783		6,783	66		66
Culture and recreation:						
Recreation	8,226		8,226	6,275		6,275
Parks	6,071		6,071	6,168		6,168
Pool	34,778		34,778	34,502		34,502
Community Center	17,836		17,836	17,857		17,857
Conservation and development:						
Economic development	12,664		12,664	11,179		11,179
Capital outlay	198,355		198,355	125,790		125,790
Total disbursements	562,278	0	562,278	505,644	0	505,644
Excess of receipts over (under) disbursements	(22,913)	167,804	144,891	(20,016)	163,460	143,444
Other financing sources (uses):						
Transfers in (out)	(8,400)	18,661	10,261	64,486	(123,099)	(58,613)
Sale of surplus property	400		400	1,970		1,970
Net change in fund balance (**)	(30,913)	186,465	155,552	46,440	40,361	86,801
Fund balance:						
January 1, 2013				290,129	431,238	721,367
December 31, 2013	336,569	471,599	808,168	336,569	471,599	808,168
December 31, 2014	305,656	658,064	963,720			

** Equals change in net position on Statement of Activities
See accompanying notes.

CITY OF FAULKTON

STATEMENT OF NET POSITION
MODIFIED CASH BASIS
ENTERPRISE FUNDS
AS OF DECEMBER 31, 2014

	Water Fund	Sewer Fund	Total Enterprise Funds
ASSETS			
Cash and cash equivalent	110,486	163,614	274,100
Certificates of deposit	22,000	106,525	128,525
Total assets	132,486	270,139	402,625
NET POSITION			
Restricted - debt service	22,982		22,982
Restricted - meter deposits	37,354		37,354
Unrestricted	72,150	270,139	342,289
Total net position	132,486	270,139	402,625

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF RECEIPTS, DISBURSEMENTS, AND CHANGES
IN NET POSITION -- MODIFIED CASH BASIS
ENTERPRISE FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2014
FOR THE YEAR ENDING DECEMBER 31, 2013

	2014			2013		
	Water Fund	Sewer Fund	Total	Water Fund	Sewer Fund	Total
Operating receipts:						
Charges for goods and services	208,713	127,808	336,521	214,431	128,576	343,007
Total operating receipts	208,713	127,808	336,521	214,431	128,576	343,007
Operating disbursements:						
Personal services	50,071	48,676	98,747	38,173	36,903	75,076
Other current services	38,883	17,636	56,519	23,638	8,444	32,082
Cost of goods sold	68,285		68,285	71,266		71,266
Capital improvements	53,094	787,303	840,397	48,390	55,081	103,471
Total operating disbursements	210,333	853,615	1,063,948	181,467	100,428	281,895
Excess operating receipts (disbursements)	(1,620)	(725,807)	(727,427)	32,964	28,148	61,112
Nonoperating receipts (disbursements):						
Interest received	89	422	511	218	728	946
BB refundable credit	11,315		11,315	11,627		11,627
SRF loan proceeds - federal portion		54,280	54,280			0
SRF loan proceeds - state portion		726,914	726,914			0
Loan pymts - principal	(18,690)		(18,690)	(18,099)		(18,099)
- interest	(38,098)		(38,098)	(38,689)		(38,689)
Total nonoperating receipts (disbursements)	(45,384)	781,616	736,232	(44,943)	728	(44,215)
Excess receipts (disbursements) before transfers	(47,004)	55,809	8,805	(11,979)	28,876	16,897
Transfers in (out) - 2nd cent		(10,261)	(10,261)	48,352	10,261	58,613
Change in net position	(47,004)	45,548	(1,456)	36,373	39,137	75,510
Net position:						
January 1, 2013				143,117	185,454	328,571
December 31, 2013	179,490	224,591	404,081	179,490	224,591	404,081
December 31, 2014	132,486	270,139	402,625			

See accompanying notes.

CITY OF FAULKTON

STATEMENT OF CASH FLOWS-- MODIFIED CASH BASIS
ENTERPRISE FUNDS
FOR THE YEAR ENDING DECEMBER 31, 2014
FOR THE YEAR ENDING DECEMBER 31, 2013

	2014			2013		
	Water Fund	Sewer Fund	Total	Water Fund	Sewer Fund	Total
Cash flows from:						
Operating activities:						
Receipts from customers	208,713	127,808	336,521	214,431	128,576	343,007
Payments to employees	(50,071)	(48,676)	(98,747)	(38,173)	(36,903)	(75,076)
Payments to suppliers	(107,168)	(17,636)	(124,804)	(94,904)	(8,444)	(103,348)
Net cash provided (used) by operating activities	51,474	61,496	112,970	81,354	83,229	164,583
Noncapital financing activities:						
Transfers in (out)		(10,261)	(10,261)	48,352	10,261	58,613
BB refundable credit	11,315		11,315	11,627		11,627
Capital financing activities:						
Capital improvements	(53,094)	(787,303)	(840,397)	(48,390)	(55,081)	(103,471)
SRF loan proceeds - federal portion		54,280	54,280			
SRF loan proceeds - state portion		726,914	726,914			
RD loan pymts - principal	(18,690)		(18,690)	(18,099)		(18,099)
- interest	(38,098)		(38,098)	(38,689)		(38,689)
Investing activities:						
Interest received	89	422	511	218	728	946
Less certificate of deposit interest		(372)	(372)		(685)	(685)
Net increase (decrease) in cash and cash equivalents	(47,004)	45,176	(1,828)	36,373	38,452	74,825
Cash and cash equivalents:						
January 1, 2013				121,117	79,986	201,103
December 31, 2013	157,490	118,438	275,928	157,490	118,438	275,928
December 31, 20014	110,486	163,614	274,100			
Reconciliation of operating income (loss) to net cash provided (used) by operating activities:						
Operating income (loss)	(1,620)	(725,807)	(727,427)	32,964	28,148	61,112
Add back capital improvements	53,094	787,303	840,397	48,390	55,081	103,471
Net cash provided (used) by operating activities	51,474	61,496	112,970	81,354	83,229	164,583

Noncash investing, capital and financing activities: None

See accompanying notes.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

As discussed further in note 1.c, these financial statements are presented on a modified cash basis of accounting. The modified cash basis of accounting differs from accounting principles generally accepted in the United States of America (GAAP). Generally accepted accounting principles include all relevant Governmental Accounting Standards Board (GASB) pronouncements.

a. Reporting Entity:

The funds and account groups included in this report are controlled by or dependent upon the City of Faulkton's (City) Governing Board.

The City's officials at December 31, 2014 are:

Mayor:
Slade Roseland

Finance Officer:
Sallie Traver

Governing Board:
Steve Wanner, President
Linda Bartholomew
Sheilah Fischer
David Hadrick
Danny Ramsdell
Mark Toennies

Attorney:
Emily Sovell

The City's financial reporting entity is composed of the following:

Financial Reporting Entity:
Primary Government: - The City of Faulkton
Component Unit: - Faulkton Housing and Redevelopment Commission

To determine the financial reporting entity, the City complies with the provisions of GASB Statement No. 14, *The Financial Reporting Entity*.

The reporting entity of the City of Faulkton consists of (1) the primary government, which includes all of the funds, organizations, institutions, agencies, departments, and offices that make up the legal entity, plus those funds for which the primary government has a fiduciary responsibility, even though those fiduciary funds may represent organizations that do not meet the criteria for inclusion in the financial reporting entity; (2) those organizations for which the primary government is financially accountable; and (3) other organizations for which the nature and significance of their relationship with the primary government are such that their exclusion would cause the financial reporting entity's financial statements to be misleading or incomplete.

Component units are legally separate organizations for which the elected officials of the primary government are financially accountable. The City is financially accountable if its governing board appoints a voting majority of another organization's governing body and it has the ability to impose its will on that organization, or there is a potential for that organization to provide specific financial benefits to, or impose specific financial burdens on the City (the primary government). The City may also be financially accountable for another organization if that organization is fiscally dependent on the City unless that organization can, without the approval of the City: (1) set its own budget; (2) determine its own rates or charges; and (3) borrow money.

Based upon the application of these criteria, the Faulkton Housing and Redevelopment Commission (Commission) is a component unit of the City of Faulkton and represents 100% of the balances and activity of the discretely presented component unit column of these financial statements.

The Commission is organized to provide housing by building and renting out two 4-plex housing units and one 8-plex unit. The City has guaranteed 25% of three Essential Function Housing Development Bonds issued by the Commission for these units. At December 31, 2014 the balances of the three bonds were $175,288; $256,685; and $1,100,000. The books of the Commission are available at the Faulkton City Hall. The Commission is established under SDCL 11-7-7.

b. Basis of Presentation:

Government-wide Financial Statements:

The government-wide financial statements include the Statement of Net Position and the Statement of Cash Activities. These statements display information about the reporting entity as a whole. They include all funds of the reporting entity except for fiduciary funds (if any). The statements distinguish between governmental and business-type activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange revenues. Business-type activities are financed in whole or in part by fees charged to external parties for good and services.

The Statement of Net Position reports all cash assets. Net position is displayed in two components: restricted (distinguishing between major categories of restrictions) and unrestricted.

The Statement of Activities presents a comparison between direct disbursements and program receipts for each function of the City's governmental activities and for each segment of City's business-type activities. Direct disbursements are associated with a specific program or function and are clearly identifiable to a particular function. Program receipts include (a) charges paid by recipients of goods and services offered by the program and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Receipts that are not classified as program receipts, including all taxes and interest, are presented as general receipts.

Fund Financial Statements:

The fund financial statements include specific information about individual funds used by the reporting entity. Each fund is considered a separate accounting entity with a separate set of self-balancing accounts that constitutes its cash, net position, receipts and disbursements. Funds are organized into three major categories: governmental, enterprise, and fiduciary (if any). An emphasis is placed on major funds within the governmental and enterprise categories. A fund is considered major if it is the primary operating fund of the City or if it meets the following criteria:

a. Total cash, receipts or disbursements of the individual governmental or enterprise fund are at least 10 percent of the corresponding element total (cash, receipts or disbursements) for all funds of that category (that is, total governmental or total enterprise), and

b. The same element that meets the 10 percent criterion in (a) is at least 5 percent of the corresponding element total for all governmental and enterprise funds combined.

c. In addition to funds that meet the major fund criteria, any other governmental or enterprise fund that the government's official believe is particularly important to financial statement users (for example, because of public interest or consistency) may be reported as a major fund.

The City has elected to classify all of its funds as major funds.

City funds are described below within their respective fund type:

Governmental Funds

General Fund - a fund established by South Dakota Codified Law (SDCL) 4-11-6 to met all the general operational costs of the City except those required to be accounted for in another fund. The general fund is always a major fund.

Special Revenue Funds - special revenue funds are used to account for the proceeds of specific revenue sources (other than trusts for individuals, private organizations, or other governments or for major capital projects) that are legally restricted to expenditures for specified purposes. The City has the following special revenue funds:

Special Revenue Fund Type - 2nd Cent Sales Tax Fund - A fund established by City of Faulkton's Ordinance No. 6 to collect an additional 1% sales tax to be used for capital improvements, including water, sewer and airport improvements. The 2nd cent sales tax fund is a major fund.

Enterprise Funds
(Business-Type)

Enterprise Funds - Enterprise funds are used to account for activity for which a fee is charged to external users for goods or services. The City has the following enterprise funds:

Water Fund - A fund established by SDCL 9-47-1 to provide water to customers within the City of Faulkton. The water fund is a major fund.

Sewer Fund - A fund established by SDCL 9-48-2 to provide sewer services to customers within the own of Faulkton. The sewer fund is a major fund.

Fiduciary Funds

Fiduciary funds are never considered to be major funds.

The City of Faulkton has no fiduciary funds.

c. Measurement Focus and Basis of Accounting:

Measurement focus is a term used to describe "how" transactions are recorded within the various financial statements. Basis of accounting refers to "when" revenues and expenditures or expenses (disbursements) are recognized in the accounts and reported in the financial statements, regardless of the measurement focus. The City's basis of accounting is the modified cash basis of accounting, which is a basis of accounting other than US-GAAP. Under US-GAAP, transactions are recorded in the accounts when revenues are earned and liabilities are incurred. Under the modified cash basis of accounting, transactions are recorded when cash is received or disbursed.

Measurement Focus:

Government-wide Financial Statements:

In the government-wide Statement of Net Position and Statement of Activities, both governmental and business-type activities are presented using the economic resources measurement focus, applied within the limitations of the modified cash basis of accounting as described below.

Fund Financial Statements:

In the fund financial statements, the "current financial resources" measurement focus or the "economic resources" measurement focus is used, applied within the limitations of the modified cash basis of accounting.

Basis of Accounting:

In the government-wide Statement of Net Position and Statement of Activities and the fund financial statements, governmental, business-type, and major fund activities are presented using a modified cash basis of accounting.

The modified cash basis of accounting involves the measurement of cash and cash equivalents and changes in cash and cash equivalents resulting from cash receipts and disbursement transactions. Under the modified cash basis of accounting, the statement of net position reports only cash and cash equivalents. Under the modified cash basis of accounting, transactions are recorded in the accounts when cash and/or cash equivalents are received or disbursed and assets and liabilities are recognized to the extent cash has been received or disbursed. Acceptable modifications to the cash basis of accounting implemented by the City in these financial statements are certificates of deposit (if any) whose maturity when purchased is more than 90 days.

As a result of the use of this modified cash basis of accounting, certain assets and their related revenues (such as accounts receivable and revenue for billed or provided services not yet collected) and certain liabilities and their related expenses (such as accounts payable and expenses for goods and services received but not yet paid, and accrued expenses and liabilities) <u>are not recorded</u> in these financial statements.

If the City applied US-GAAP, the fund financial statements for governmental funds would use the modified accrual basis of accounting and the fund financial statements for enterprise funds and fiduciary funds (if any) would use the accrual basis of accounting. All government-wide financials would be presented on the accrual basis of accounting.

d. <u>Cash and Cash Equivalents</u>:

For purposes of financial reporting, "cash and cash equivalents" includes all demand and savings accounts and certificates of deposit or short-term investments with a term to maturity at date of acquisition of three months or less. Investments (if any) in open-end mutual funds shares or similar investments in external investment pools, are also considered to be cash equivalents.

The City's certificate of deposit has a maturity of more than three months when purchased and are not considered a cash equivalent for the statement of cash flows.

Under the modified cash basis of accounting, investments are carried at cost.

e. <u>Interfund Transactions</u>:

Transactions that constitute reimbursements to a fund for disbursements made from it, and that are properly applicable to another fund, are recorded as a disbursement in the reimbursing fund and as reductions of disbursements in the fund that is reimbursed. All other interfund transactions are reported as transfers.

f. <u>Program Receipts and General Receipts</u>:

<u>Program Receipts</u>:
In the government-wide Statement of Activities, reported program receipts derive directly from the program itself or from parties other than the City's taxpayers or citizenry, as a whole. Program receipts are classified in three categories, as follows:

1. Charges for services - These arise from charges to customers, applicants, or others who purchase, use, or directly benefit from the goods, services, or privileges provided, or are otherwise directly affected by the services.

2. Program-specific operating grants and contribution - These arise from mandatory and voluntary non-exchange transactions with other governments, organizations, or individuals that are restricted for use in a particular program.

3. Program-specific capital grants and contribution - These arise from mandatory and voluntary non-exchange transactions with other government, organization, or individuals that are restricted for the acquisition of capital assets for use in a particular program.

General Receipts:
General receipts include all receipts not specifically earmarked for a specific program. General receipts include all taxes, interest received, unrestricted receipts from federal, state, or county governments, and miscellaneous receipts not related to a program. These receipts are not restricted and can be used or the regular operation of the City.

g. Enterprise Fund Receipt Classifications:

In both the government-wide statements and fund financial statements, enterprise fund *operating* receipts, such as charges for water and sewer services, result from exchange transactions associated with the principal activity of the fund. Exchange transactions are those in which each party receives and gives up essentially equal values. *Nonoperating* revenues, if any, such as grants, operating subsidies, interest received, and transfers in, result from nonexchange transactions.

h. Equity Classifications:

Government-wide financial Statements:

Equity is classified as net position and is displayed in two components:

1. Restricted Net Position - Consists of net position with constraints placed on their use either by (a) external groups such as creditor, grantor, contributors, or laws and regulations of other governments; or (b) law through constitutional provisions or enabling legislation.

2. Unrestricted Net Position - All other net position that does not meet the definition of "restricted net position".

Fund Financial Statements:

Governmental fund equity is classified as "Fund Balance", and may distinguish between "Nonspendable", "Restricted", "Committed, "Assigned", and "Unassigned" components. Enterprise fund equity is classified as "Net Position", the same as in the government-wide financial statements. Fiduciary fund equity (if any) (except for agency funds, which have no fund equity) is reported as "Net Position Held in Agency Capacity."

i. Application of Net Position:

It is the City's policy to first use restricted net position, prior to the use of unrestricted net position, when an expense is incurred which can be charged to either restricted or unrestricted net position.

j. Fund Cash Balance Classification Policies and Procedures:

In accordance with Government Accounting Standards Board (GASB) No. 54, Fund Balance Reporting and Governmental Fund Type Definitions, the City classifies governmental fund balances as follows:

* Nonspendable - includes fund cash balance amounts that cannot be spent either because it is not in spendable form or because of legal or contractual constraints.

* Restricted - includes fund cash balance amounts that are constrained for specific purposes which are externally imposed by providers, such as creditors, or amounts constrained due to constitutional provisions or enabling legislation.

* Committed - includes fund cash balance amounts that are constrained for specific purposes that are internally imposed (or modified or rescinded) by the government through formal action at the highest level of decision making authority and does not lapse at year-end.

* Assigned - includes fund cash balance amounts that are intended to be used for specific purposes that are neither considered restricted or committed. Fund cash balance may be assigned by the Board of Trustees or Finance Officer.

* Unassigned - includes positive fund cash balance within the general fund which has not been classified within the above categories and negative fund balance amounts in other governmental funds.

The City of Faulkton fund cash balance classifications are made up of:

Fund Balance Classifications	Account or Fund	Authority or Action	Amount
Nonspendable	None		0
Restricted	None		0
Committed	2nd Cent Fund	Ordinance	658,064
Assigned	Key deposit	Resolution	750
Assigned	Capital projects	Resolution	35,000
Unassigned	General		269,906
			963,720

The City uses "restricted" and "committed" amounts first when restricted and unrestricted fund balance is available unless there are legal documents/ contracts that prohibit doing this, such as a grant agreement requiring dollar for dollar spending. Additionally, the City would first use "committed", then "assigned", and lastly "unassigned" amounts of unrestricted fund balance when expenditures are made.

The City does not have a formal minimum fund cash balance policy.

The purpose of each special revenue fund and revenue source is:

Special Revenue Fund:	Revenue Source: (see page 14)
* 2nd Cent	Sales tax

2. VIOLATIONS OF FINANCE-RELATED LEGAL AND CONTRACTUAL PROVISIONS

Budget Overdrafts:
The City is prohibited by statute from spending in excess of appropriated amounts by department within a fund. The following represents overdrafts of departmental expenditures compared to appropriations:

2014:	General fund	- Public Works/Highways and Streets	$ 44,196
		- Conservation and Dev/Economic Development	11,675
2013:	General fund	- General Government/Other	$ 45
		- Public Works/Highways and Streets	54,815
		/Solid Waste	323
		- Conservation and Dev/Economic Development	7,679

Constitutional Debt Limit:
At December 31, 2014 the City's total debt, including the 25% Essential Function Bond guarantee, is $2,334,271. This exceeds 10% of the 2014 taxable valuation of $17,283,053 by $605,966. However, the City's total debt is under 10% of the 2015 taxable valuation of $26,273,783 by $293,107.

3. DEPOSITS, INVESTMENTS AND RELATED RISKS

Except for restricted cash held by 3rd parties and bank certificates of deposit purchased for an individual fund, the City follows the practice of aggregating deposits of its various funds to maximize cash management efficiency and returns. Various restrictions on deposits and investments are imposed by statutes. These restrictions are summarized below:

Deposits - The City deposits are made in qualified public depositories as defined by SDCL 4-6A-1, 9-22-6, 9-22-6.1 and 9-22-6.2. Qualified depositories are required by SDCL 4-6A-3 to maintain, at all times, segregated from their other assets, eligible collateral having a value equal to at least 100 percent of the public deposit accounts which exceed deposit insurance such as FDIC and NCUA. In lieu of pledging eligible securities, a qualified public depository may furnish irrevocable standby letters of credit issued by federal home loan banks accompanied by written evidence of that bank's public debt rating which may not be less than "AA" or a qualified public depository may furnish a corporate surety bond of a corporation authorized to do business in South Dakota.

Deposits are reported at cost, plus interest, if the account is the add-on type.

Actual bank balances at December 31, 2014 were as follows: Insured $500,000, Collateralized ** $876,288, for a total of $1,376,288.

** Uninsured, collateral jointly held by state's/municipality's agent in the name of the state and the pledging financial institution.

The carrying amount of these deposits at December 31, 2014 was $1,366,345 held as follows.

Dakota Bank Faulkton (Faulkton, SD):	
Checking	$ 473,994
Savings	658,064
Certificates of deposit	234,137
	$ 1,366,195
Petty cash	150
	$ 1,366,345

Certificates of deposit (if any), with a term to maturity of greater than 3 months when purchased, were insured or collateralized and are considered deposits.

4. INVESTMENTS AND RELATED RISKS

In general, SDCL 4-5-6 permits City money to be invested only in (a) securities of the United States and securities guaranteed by the United States government either directly or indirectly or (b) repurchase agreements fully collateralized by securities described in (a) or (c) in shares of an open-end, no-load fund administered by an investment company whose investments are in securities described in (a) and repurchase agreements described in (b). Also, SDCL 4-5-9 requires investments to be in the physical custody of the political subdivision or may be deposited in a safekeeping account with any bank or trust company designated by the political subdivision as its fiscal agent.

During the two years ending December 31, 2014 the City had no investments.

Investment Risk - State law limits eligible investments for the City as discussed above. The City has no investment policy that would further limit its investment choices.

Custodial Risk (Investments) - The risk that, in the event of a default by the counterparty to a transaction, the City will not be able to recover the value of an investment or collateral securities held by the counterparty.

Custodial Risk (Deposits) - The risk that, in the event of a depository failure, the City's deposits may not be returned to it. At December 31, 2014, the City's deposits in financial institutions were not exposed to custodial deposit risks.

Concentration of Credit Risk - the City places no limit on the amount that may be invested in any one institution. The amount of investment in an institution is shown above.

Interest Rate Risk - The City does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Assignment of Investment Income - State law allows income from deposits and investments to be credited to either the general fund or the fund making the deposit or investment. The City's policy is to credit all income from deposits and investments to the fund making the investment.

5. LONG-TERM DEBT

A summary of changes in long-term liabilities is presented as supplementary information on page 33. The City did not have any short-term or conduit debt in 2013 or 2014.

6. FUTURE REVENUES PLEDGED TO SECURE DEBT

All water fund net revenue (after normal operating, repair and maintenance expenses) is pledged to secure the Water Project Revenue Bond, Series 2009 which has a remaining balance of $1,062,887 and a SRF Drinking Water loan which has a remaining balance of $107,409 at December 31, 2014. These debts were incurred to cover the cost of water improvements as described on page 33. The bonds will mature in 2050 and the SRF loan will mature in 2042. In 2014 the debt had pledged revenue of $51,474 and total payments of $56,788.

All sewer fund net revenue (after normal operating, repair and maintenance expenses) is pledged to secure a SRF Clean Water loan which has a balance of $781,194 at December 31, 2014. This debt is incurred to cover the cost of sewer improvements as described on page 33. The bonds will mature in 2045. In 2014 the debt had pledged revenue of $61,496 and total payments of $0.

7. WATER PURCHASE AGREEMENT

The City of Faulkton entered into an agreement with WEB Water Development Association, Inc. to provide water to the City for $1.45 per 1,000 gallons plus an indefinite minimum monthly charge of $1,833.00 for WEB's debt service, capital improvements and water line maintenance.

8. RESTRICTED NET POSITION

The following table shows the December 31, 2014 net position restricted for specific purposes as shown on the statement of net position

Purpose:	Restricted By:	Governmental	Business-Type
Debt service	Covenants		22,892
Meter deposits	Contract		37,354
		---	---
Total Restricted Net Position		0	60,336

9. INTERFUND TRANSFERS

Transfers "in" and "(out)" between funds were:

2014	Governmental	Enterprise	Purpose
General	(8,400)		Operations
2nd Cent	18,994		Operations
Sewer		(10,261)	Return prior year transfer
	---	---	
	10,261	(10,261)	

2013	Governmental	Enterprise	Purpose
General	64,486		Operations
2nd Cent	(123,099)		Operations
Water		48,352	Capital project
Sewer		10,261	Capital project
	---	---	
	(58,613)	58,613	

10. RETIREMENT PLAN

All employees, except for part-time employees, participate in the South Dakota Retirement System (SDRS), a cost-sharing, multiple employer public employee retirement system established to provide retirement benefits for employees of the State of South Dakota and its political subdivisions. SDRS provides retirement, disability and survivors benefits. The right to receive retirement benefits vests after three years of credited service. Authority for establishing, administering and amending plan provisions are found in South Dakota Codified Law 3-12. SDRS issues a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to SDRS, PO Box 1098, Pierre, SD 57501-1098 or calling (605) 773-3731.

General employees are required by statute to contribute 6% of their salary to the plan, while public safety and judicial employees contribute at 8% and 9% respectively. State statute also requires the employer to contribute an amount equal to the employee's contribution. State statute also requires the employer to make an additional contribution in the amount of 6.2% for any compensation exceeding the maximum taxable amount for social security for general employees only. The City's share of contributions to the SDRS for the years ending December 31, 2014, 2013, and 2012 were $8,679, $7,598 and $6,727 (employer's share) respectively, equal to the required contributions each year.

There are no deferred contributions.

11. PROPERTY TAX

Property taxes are levied on or before October 1, of the year preceding the start of the fiscal year. They attach as an enforceable lien on property, and become due and payable as of January 1, the first day of the fiscal year. Taxes are payable in two installments on or before April 30 and October 31 of the fiscal year.

The City is permitted by several state statutes to levy varying amounts of taxes per $1,000 of taxable valuation on taxable real property in the City.

12. INSURANCE

The City is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions, injuries to employees; and natural disasters. During the two years ending December 31, 2014 the City managed its risks as follows:

Employee Health Insurance:
The City joined the South Dakota Municipal League Health Pool of South Dakota. This is a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays a monthly premium to the pool to provide health insurance coverage for its employees. The pool purchases reinsurance coverage with the premiums it receives from the members.

The City does not carry additional health insurance coverage to pay claims in excess of this upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Liability Insurance:

The City joined the South Dakota Public Assurance Alliance (SDPAA), a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays an annual premium to the pool to provide coverage for property, boiler and machinery, general liability, officials liability, and automobile insurance.

The agreement with the SDPAA provides that the above coverage's will be provided to a $1,000,000 limit. Member premiums are used by the pool for payment of claims and to pay for reinsurance for claims in excess of $250,000 for property coverage and $500,000 for liability coverage to the upper limit. The City carries a $500 deductible for officials liability.

The objective of the SDPAA is to administer and provide risk management services and risk sharing facilities to the members and to defend and protect the members against liability, to advise members on loss control guidelines and procedures, and provide them with risk management services, loss control and risk reduction information and to obtain lower cost for that coverage. The City's responsibility is to promptly report to and cooperate with the SDPAA to resolve any incident which could result in a claim being made by or against the City. The City pays an annual premium, to provide liability coverage detailed above, under a claims-made policy and the premiums are accrued on the ultimate cost of the experience to date of the SDPAA member, based on their exposure or type of coverage.

A portion of the member premiums are also allocated to a cumulative reserve fund. The City would be eligible to receive a refund for a percentage of the amount allocated to the cumulative reserve on the following formula:

End of the City's:
First Full Year (50%), Second Full Year (60%), Third Full Year (70%)
Fourth Full Year (80%), Fifth Full Year (90%), Sixth Full Year (100%)

As of December 31, 2014, the City has a vested balance in the cumulative reserve fund of $17,224.

The City does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Airport Liability Coverage:
The City has purchased airport liability coverage through a commercial insurance carrier.

Worker's Compensation:
The City joined the South Dakota Municipal League Workers' Compensation Fund, a public entity risk pool currently operating as a common risk management and insurance program for South Dakota local government entities. The City pays an annual premium to the pool to provide worker's compensation coverage for its employees. Coverage limits are set by state statute. The pool pays the first $650,000 of any claim per individual. The pool has reinsurance which covers up to statutory limits in addition to a separate combined employer liability limit of $2,000,000 per incident.

The objective of the Fund is to formulate, develop, and administer, on behalf of the member organizations, a program of worker's compensation coverage, to obtain lower costs for that coverage, and to develop a comprehensive loss control program.

The City's responsibility is to initiate and maintain a safety program to give its employees safe and sanitary working conditions and to promptly report to and cooperate with the Fund to resolve any worker's compensation claims. The City pays an annual premium, to provide worker's compensation coverage for its employees, under a self-funded program and the premiums are accrued based on the ultimate cost of the experience to date of the Fund members. The City may also be responsible for additional assessments in the event the pool is determined by its board of trustees to have inadequate reserves to satisfy current obligations or judgments. Additional assessments, if any, are to be determined on a prorated basis based upon each participant's percentage of contribution in relation to the total contributions to the pool of all participants for the year in which the shortfall occurs.

The City does not carry additional insurance to cover claims in excess of the upper limit. Settled claims resulting from these risks have not exceeded the liability coverage during the past three years.

Unemployment Benefits:
The City provides coverage for unemployment benefits by paying into the Unemployment Compensation Fund established by state law and managed by the State of South Dakota. No unemployment payments were made during the two years ending December 31, 2014 and none are expected in 2015.

13. LITIGATION

At December 31, 2014, the City was not a party to litigation or pending legal action. However, as discussed in the risk management note above, the City has liability coverage for itself and its employees through South Dakota Public Assurance Alliance. Therefore, should there be legal action, it is not expected to have a material effect on the City's financial statements.

14. OTHER DISCLOSURES AND SUBSEQUENT EVENTS

The City has no material unallowed related party activity.

The City does not offer any Other Post Employment Benefits.

The city has a rubble site. It does not have a landfill with any associated closure costs or liabilities.

In 2014 the City paid the Development Corporation $15,000 to maintain the Community Center, $5,000 for support and $2,500 towards the director's salary.

In 2015 the City:

* Purchased a 924K loader for $153,390.
* Completed the GA terminal building for approximately $169,000.
* Conducted a public meeting regarding sewer line replacement and relining for an estimated cost of $5,151,000 which would increase sewer rates to about $40 a month.
* Considered applying for a 60/40 split Community Access Grant to improve 15th Avenue from Pearl Street to the hospital.
* Received a base bid of $344,430 for hanger and taxilane improvements using some $286,530 of available federal entitlements.
* Approved re-organization of the Housing & Redevelopment Commission Board to include 2 member of the City Council.

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2014

GENERAL FUND	Budgeted Amounts				Actual	Variance
	Original	Contingency Transfers	Supplemental	Final	(Modified Cash Basis)	Positive (Negative)
Receipts:						
Receipts from local sources:						
Taxes:						
Ad valorem taxes	192,343			192,343	218,386	26,043
Sales and use tax	140,000			140,000	167,076	27,076
Amusement tax				0	132	132
Licenses and permits:	10,995			10,995	6,057	(4,938)
Federal grants	337,500			337,500	60,013	(277,487)
State grants	18,750			18,750		(18,750)
Intergovernmental receipts:	40,690			40,690	50,486	9,796
Charges for goods and services	8,700			8,700	15,942	7,242
Fines and forfeits				0	117	117
Miscellaneous receipts:	14,500			14,500	21,156	6,656
Total receipts	763,478	0	0	763,478	539,365	(224,113)
Disbursements:						
General government:						
Mayor and Council	15,630	131		15,761	15,498	263
Contingency	10,000			10,000		10,000
Amount transferred		(2,158)		(2,158)		(2,158)
Elections	620			620	612	8
Financial administration	62,359	1,629		63,988	59,585	4,403
Other	22,991			22,991	16,834	6,157
Public safety:						
Police	41,500			41,500	41,500	0
Fire	10,000	148		10,148	10,148	0
Public works:						
Highways and streets	142,352	250		142,602	186,798	(44,196)
Solid waste	10,693			10,693	7,920	2,773
Airport	361,665			361,665	127,514	234,151
Cemetery	3,000			3,000	3,000	0
Health and welfare:						
West Nile	7,425			7,425	6,783	642
Culture and recreation:						
Recreation	46,260			46,260	43,004	3,256
Parks	6,613			6,613	6,071	542
Community center	18,025			18,025	17,836	189
Conservation and development:						
Economic deval. - assistance	7,500			7,500	19,175	(11,675)
Total disbursements	766,633	0	0	766,633	562,278	204,355
Excess of receipts over (under) disbursements	(3,155)	0	0	(3,155)	(22,913)	(19,758)
Other financing sources (uses):						
Transfer (out)				0	(8,400)	(8,400)
Sale of surplus property				0	400	400
Change in fund balance	(3,155)	0	0	(3,155)	(30,913)	(27,758)
Fund balance:						
January 1, 2014	336,569			336,569	336,569	0
December 31, 2014	333,414	0	0	333,414	305,656	(27,758)

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2013

GENERAL FUND	Budgeted Amounts				Actual (Modified Cash Basis)	Variance Positive (Negative)
	Original	Contingency Transfers	Supplemental	Final		
Receipts:						
Receipts from local sources:						
Taxes:						
Ad valorem taxes	181,035			181,035	180,011	(1,024)
Sales and use tax	140,000			140,000	163,042	23,042
Amusement tax				0	108	108
Licenses and permits:	9,705			9,705	7,144	(2,561)
Federal grants	315,000			315,000	33,097	(281,903)
State grants	17,500			17,500	21,303	3,803
Intergovernmental receipts:	38,850			38,850	48,227	9,377
Charges for goods and services	8,300			8,300	13,255	4,955
Fines and forfeits				0	377	377
Miscellaneous receipts:	13,100			13,100	19,064	5,964
Total receipts	723,490	0	0	723,490	485,628	(237,862)
Disbursements:						
General government:						
Mayor and Council	15,555			15,555	13,753	1,802
Contingency	10,000			10,000		10,000
Amount transferred				0		0
Elections	600			600	25	575
Financial administration	55,527		4,300	59,827	58,837	990
Other	23,466		12,700	36,166	36,211	(45)
Public safety:						
Police	41,500			41,500	41,500	0
Fire	10,000			10,000	9,988	12
Public works:						
Highways and streets	145,299			145,299	200,114	(54,815)
Solid waste	6,925			6,925	7,248	(323)
Airport	346,860			346,860	42,206	304,654
Cemetery	3,000			3,000	3,000	0
Health and welfare:						
West Nile	1,725			1,725	66	1,659
Culture and recreation:						
Recreation	55,210			55,210	44,942	10,268
Parks	11,663			11,663	8,718	2,945
Community center	17,885			17,885	17,857	28
Conservation and development:						
Economic devel. - assistance	13,500			13,500	21,179	(7,679)
Total disbursements	758,715	0	17,000	775,715	505,644	270,071
Excess of receipts over (under) disbursements	(35,225)	0	(17,000)	(52,225)	(20,016)	32,209
Other financing sources (uses):						
Transfer in				0	64,486	64,486
Sale of surplus property				0	1,970	1,970
Change in fund balance	(35,225)	0	(17,000)	(52,225)	46,440	98,665
Fund balance:						
January 1, 2013	290,129			290,129	290,129	0
December 31, 2013	254,904	0	(17,000)	237,904	336,569	98,665

CITY OF FAULKTON

SUPPLEMENTARY INFORMATION
BUDGETARY COMPARISON SCHEDULE - BUDGETARY BASIS
FOR THE YEAR ENDING DECEMBER 31, 2014

2ND CENT SALES TAX FUND (Reserved for capital improvements)	Budgeted Amounts			Actual (Modified Cash Basis)	Variance Positive (Negative)
	Original	Supplementals	Final		
Receipts:					
Receipts from local sources:					
Taxes:					
Sales and use tax	141,000		141,000	167,076	26,076
Miscellaneous receipts:					
Interest received			0	728	728
Total receipts	141,000	0	141,000	167,804	26,804
Disbursements:					
General government:					
City Hall	20,000		20,000		20,000
Public works:					
Streets	115,000		115,000		115,000
Airport	18,750		18,750		18,750
Promoting the City	20,000		20,000		20,000
Total disbursements	173,750	0	173,750	0	173,750
Excess of receipts over (under) disbursements	(32,750)	0	(32,750)	167,804	200,554
Other financing sources (uses):					
Transfers in			0	18,661	18,661
Change in fund balance	(32,750)	0	(32,750)	186,465	219,215
Fund balance:					
January 1, 2014	471,599		471,599	471,599	0
December 31, 2014	438,849	0	438,849	658,064	219,215

FOR THE YEAR ENDING DECEMBER 31, 2013

2ND CENT SALES TAX FUND (Reserved for capital improvements)	Budgeted Amounts			Actual (Modified Cash Basis)	Variance Positive (Negative)
	Original	Supplementals	Final		
Receipts:					
Receipts from local sources:					
Taxes:					
Sales and use tax	110,000		110,000	163,042	53,042
Miscellaneous receipts:					
Interest received			0	418	418
Total receipts	110,000	0	110,000	163,460	53,460
Disbursements:					
Public works:					
Highways and streets	77,500		77,500		77,500
Airport	17,500		17,500		17,500
Promoting the City	15,000		15,000		15,000
Total disbursements	110,000	0	110,000	0	110,000
Excess of receipts over (under) disbursements	0	0	0	163,460	163,460
Other financing sources (uses):					
Transfers (out)			0	(123,099)	(123,099)
Change in fund balance	0	0	0	40,361	40,361
Fund balance:					
January 1, 2013	431,238		431,238	431,238	0
December 31, 2013	431,238	0	431,238	471,599	40,361

CITY OF FAULKTON

BUDGETARY SUPPLEMENTARY INFORMATION

NOTES TO THE BUDGETARY COMPARISON SCHEDULES FOR THE GENERAL FUND AND 2ND CENT FUND FOR THE TWO YEARS ENDING DECEMBER 31, 2014

1. BUDGETS AND BUDGETARY ACCOUNTING

The City of Faulkton (City) follows these procedures in establishing the budgetary data reflected in the budgetary supplementary information:

a. At the first regular board meeting in September of each year or within ten days thereafter, the governing board introduces the annual appropriation ordinance for the ensuing fiscal year.

b. After adoption by the governing board, the operating budget is legally binding and actual expenditures for each purpose cannot exceed the amounts budgeted, except as indicated in d.

c. A line item for contingencies may be included in the annual budget. Such a line item may not exceed 5 percent of the total municipal budget and may be transferred by resolution of the governing board to any other budget category that is deemed insufficient during the year.

d. If it is determined during the year that sufficient amounts have not been budgeted, state statute allows the adoption of supplemental budgets. During 2014 there were no supplemental budgets to the general fund or the 2nd cent fund. See page and 29 and 31. During 2013 there was one supplemental budget to the general fund. See page 30.

e. Formal budgetary integration is employed as a management control device for the general fund and 2nd cent fund.

f. Budgets for the general fund and 2nd cent fund are not adopted on a basis consistent with generally accepted accounting principles (GAAP) because all accounting, and the adoption of the all budgets, is on a modified cash basis of accounting.

2. GAAP AND BUDGETARY ACCOUNTING BASIS DIFFERENCE:

The financial statements prepared in conformity with US-GAAP (within the context of the modified cash basis of accounting) present capital outlay disbursement information as a separate category of disbursements. Under the budgetary basis of accounting, capital outlay disbursements are reported within the function to which they relate. For example, the purchase of a road grader would be reported as a capital outlay disbursement in the governmental funds statement of receipts, disbursements and changes in fund cash balance. However, in the budgetary supplemental information schedule, the purchase of a road grader would be reported as a disbursement in the public works function of general fund, along with all other current public works disbursements.

CITY OF FAULKTON

SCHEDULE OF CHANGES IN LONG-TERM DEBT
FOR THE TWO YEARS ENDING DECEMBER 31, 2014

BUSINESS-TYPE	Beginning 12-31-12	2013 Additions (Deletions)	2014 Additions (Deletions)	Governmental Funds Ending 12-31-14	Enterprise Funds Ending 12-31-14	Principal Payments Due in 2015
2010 Water Project Bond, Series 2009:						
Original amount of $1,141,000						
Maturing in 2050						
Interest at 3.25%						
Monthly payments of $4,256						
Paid by the water fund	1,094,852	(15,723)	(16,242)		1,062,887	16,528
2011 SRF Drinking Water #2:						
Original amount of $112,816						
Maturing 7-15-2042						
Interest at 3.00%						
Quarterly payments of $1,429						
Paid by the water fund	112,233	(2,376)	(2,448)		107,409	2,522
2014 SRF Clean Water #1:						
Original amount of $790,879						
Maturing 7-15-2045						
Interest at 3.25%						
Quarterly payments of $10,342						
Paid by the sewer fund	0		781,194		781,194	3,916
Totals	1,207,085	(18,099)	762,504		1,951,490	22,966

NOTE
The City guarantees 25% of three Essential Function Housing Bonds for the Faulkton Housing & Redevelopment Commission. At December 31, 2014 the bonds have a remaining balance of $174,783; $256,341; and $1,100,000. The City's guarantee on these bonds is $382,781.

SCHEDULE OF PAYMENTS FOR LONG-TERM DEBT
AT DECEMBER 31, 2014

	Total Payment	Principal	Interest	Balance
2010 Water Project Bond, Series 2009:				
2015	51,072	16,528	34,544	1,046,359
2016	51,072	17,065	34,007	1,029,294
2017	51,072	17,620	33,452	1,011,674
2018	51,072	18,193	32,879	993,481
2019	51,072	18,784	32,288	974,697
2020-2024	255,360	103,483	151,877	871,214
2025-2029	255,360	121,428	133,932	749,786
2030-2034	255,360	142,485	112,875	607,301
2035-2039	255,360	167,194	88,166	440,107
2040-2044	255,360	196,187	59,173	243,920
2045-2049	255,360	230,209	25,151	13,711
2050	14,156	13,711	445	0
Totals	1,801,676	1,062,887	738,789	
2011 SRF Drinking Water #2:				
2015	5,716	2,522	3,194	104,887
2016	5,717	2,599	3,118	102,288
2017	5,716	2,678	3,038	99,610
2018	5,717	2,759	2,958	96,851
2019	5,716	2,843	2,873	94,008
2020-2024	28,582	15,561	13,021	78,447
2025-2029	28,582	18,069	10,513	60,378
2030-2034	28,582	20,981	7,601	39,397
2035-2039	28,582	24,363	4,219	15,034
2040-2042	17,150	15,034	2,116	0
Totals	160,060	107,409	52,651	
2014 SRF Clean Water #1:				
2015		(9,685)		790,879
2015	30,274	3,916	26,358	786,963
2016	41,369	15,987	25,382	770,976
2017	41,370	16,512	24,858	754,464
2018	41,369	17,056	24,313	737,408
2019	41,370	17,617	23,753	719,791
2020-2024	208,847	97,169	111,678	622,622
2025-2029	208,847	114,239	94,608	508,383
2030-2034	208,847	134,308	74,539	374,075
2035-2039	208,847	157,903	50,944	216,172
2040-2044	208,847	185,642	23,205	30,530
2045	31,027	30,530	497	0
Totals	1,271,014	781,194	480,135	

REPORT ON
COMPLIANCE AND OTHER MATTERS AND ON
INTERNAL CONTROL OVER FINANCIAL REPORTING
BASED ON AN AUDIT OF FINANCIAL STATEMENTS
PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Governing Board
City of Faulkton
Faulkton, South Dakota

INDEPENDENT AUDITOR'S REPORT

I have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the modified cash basis of accounting financial statements of governmental activities, business-type activities, and each major fund, of the City of Faulkton (City), Faulk County, South Dakota, as of December 31, 2014 and for each of the years in the biennial period then ended, and the related notes to the financial statements, which collectively comprise the City's basic financial statements and have issued my report thereon dated September 2, 2015 which was unmodified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the City of Faulkton's financial statements are free of material misstatement, I performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of my audit and, accordingly, I do not express such an opinion.

The results of my tests disclosed an instance of noncompliance or other matters that is required to be reported under *Government Auditing Standards* and which is described in the accompanying schedule of current audit findings and responses as item 2014-01.

I did note other matters involving compliance that I reported to the governing body and management of the City of Faulkton in a separate Letter of Comments dated September 2, 2015.

Internal Control Over Financial Reporting

In planning and performing my audit of the financial statements, I considered the City of Faulkton's internal control over financial reporting (internal control) to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing my opinions on the financial statement, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, I do not express an opinion on the effectiveness of the City of Faulkton's internal control.

A *deficiency in internal control* exist when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis.

A *material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of City of Faulkton's financial statements will not be prevented, or detected and corrected on a timely basis.

A *significant deficiency*, is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

My consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. Given these limitations, during my audit I did not identify any deficiencies in internal control that I consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

I did identify certain deficiencies in internal control, described in the accompanying schedule of current audit findings and questioned costs that I consider to be significant deficiencies. I consider the deficiencies described in the accompanying schedule of current audit findings and questioned costs as items 2014-01 and 2014-02 to be significant deficiencies.

I did note other matters involving internal control that I reported to the governing body and management of the City of Faulkton in a separate Letter of Comments dated September 2, 2015.

Management's Response to Findings

Management's responses to the findings identified in my audit are described in the accompanying schedule of current audit findings and responses. Management's responses were not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, I express no opinion on them.

Purpose of this Report

The purpose of this report is solely to describe the scope of my testing of compliance and internal control over financial reporting, and the results of that testing, and not to provide an opinion on the effectiveness of the City's compliance or internal control over financial reporting. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's compliance and internal control over financial reporting. Accordingly this communication is not suitable for any other purpose.

As required by South Dakota Codified Law 4-11-11, this report is a mater of public record and its distribution is not limited.

Independent Audit Services, PC
Benjamin Elliott, CPA
Madison, South Dakota

September 2, 2015

SCHEDULE OF PRIOR AUDIT FINDINGS

Prior Federal Compliance Audit finding:
Not applicable to this audit.

Prior Other Audit Findings:
2012-01: [Enterprise Accounting] -- Corrected
2006-02: [Financial Statement Preparation] -- Repeated below as item 2014-02.

SCHEDULE OF CURRENT AUDIT FINDINGS AND RESPONSES

Part I - Summary of the Audit:

Financial Statements

Type of auditor's report issued:

Disclaimer on:
Faulkton Housing and Redevelopment Commission
Unqualified on:
Governmental Activities
Business-Type Activities
All Funds

Noncompliance noted: Item: 2014-01

Internal control over financial reporting:
* Material weakness(es) identified? None Reported

* Significant deficiency(ies) identified that are not considered to be material weaknesses? Items: 2014-01 and 2014-02

Part II - Findings Relating to the Financial Statements

Finding 2012-01: Budget Overdrafts
(compliance and internal control)

Criteria:
SDCL 9-21 requires governmental expenditures to be authorized in an annual appropriation ordinance, or by a supplemental appropriation ordinance, by the governing body before the end of year. The City is prohibited from spending in excess of appropriated amounts at the sub-function level.

Condition:
In 2014 and 2013 these City departments exceeded their budget by the following amounts.

2014:	General fund	- Public Works/Highways and Streets	$ 44,196
		- Conservation and Dev/Economic Development	11,675
2013:	General fund	- General Government/Other	$ 45
		- Public Works/Highways and Streets	54,815
		/Solid Waste	323
		- Conservation and Dev/Economic Development	7,679

Effect:
Expenditures in excess of a budget can lead to unnecessary expenditures.

Also, joint and several liability may attach to any official who approves an expenditure in excess of the amount budgeted for any purpose or department. SDCL 9-21-9 and 9-21-10

Recommendation:
I recommend the City stay within its budget, using contingency transfers and supplemental appropriations to adjust particular budget line items when necessary.

Management Response:
Management agrees with this recommendation. In the future, the City expects to make contingency transfers or adopt supplemental appropriations to cover expenditures that will exceed their original appropriation.

Finding 2014-02: Financial Statement Preparation
(internal control)

Criteria:
A good system of internal control contemplates an adequate system for recording and processing entries material to the financial statements.

Condition:
The City has elected not to have an internal control system designed to provide for the preparation of the financial statement being audited. As the auditor, I was requested to draft these financial statements and accompanying notes to the financial statements.

Possible Effect:
This control deficiency could result in a misstatement of the financial statements that would not be prevented or detected.

Recommendations:
This situation is not unusual for an entity of the City's size. It is the responsibility of management, and those charged with governance, to make the decision whether to accept the degree of risk associated with this condition because of cost or other considerations.

Management Response:
Due to cost constraints, the City will continue to have the auditor draft the financial statements and accompanying notes to the financial statements.

CURRENT YEAR BUDGET

Ordinance NO. 30

An ordinance entitled "The Annual Appropriation for the City of Faulkton, Faulk County, South Dakota for the fiscal year commencing January, 1, 2015"

Be it ordained by the City Council of The City of Faulkton, South Dakota, that the following sums are appropriated to meet the obligations of the municipality.

Part I (SDCL 9-21-2)

	General Fund Breakdown	General Fund	Special Revenue
410 GENERAL GOVERNMENT			
411 Legislative		$13,070	
4111 Board Council or Commission	$11,070		
4113 Ordinances, Resolutions, Proceedings	$2,000		
411.5 Contingency		$15,000	
412 Executive			
4121 Mayor		$3,160	
413 Elections		$875	
414 Financial Administration		$71,791	
4141 Legal (Attorney)	$5,027		
4142 Finance Officer	$62,539		
4147 General Financial Administration	$4,225		
419 Other		$32,663	
4191 Misc. General Expenses	$23,350		
4192 City Hall	$9,313		$25,000
Total General Government		**$136,559**	**$25,000**
420 PUBLIC SAFETY			
421 Law Enforcement		$41,500	
422 Fire Department		$10,800	
Total Public Safety		**$52,300**	
430 PUBLIC WORKS			
431 Highway & Streets		$143,385	
4310 Shop	$7,500		
4311 Street Administration	$73,335		
4312 Streets, Roads, School Signals	$36,400		$220,000
4316 Street Lights	$19,000		
4317 Snow Removal	$7,150		
432 Sanitation - Rubble Site		$10,791	
435 Airport		$333,265	$17,250
437 Cemetery		$4,000	
485 Capital Outlay		$5,000	
Total Public Works		**$496,441**	**$237,250**
440 WEST NILE			
4413 West Nile		$7,425	
Total West Nile		**$7,425**	
450 RECREATION			
451-452 Parks, Recreation & Auditorium		$70,360	
45124 Pool	$38,182		
45127 Ball Parks	$8,186		
4514 Senior Citizens Center	$750		
4522 Parks	$3,874		
45221 Carousel	$2,418		
4526 Park Lights & Camper Pads	$600		

456 Community Center	$16,350	$0	
Total Recreation		**$70,360**	
460 DEVELOPMENT			
465 Economic Development & Assistance			
4650 Economic Development			**$12,500**
4653 Promoting the City		$5,000	$0
Total Development		**$5,000**	**$12,500**
TOTAL 2015 APPROPRIATIONS		**$768,085**	**$274,750**

Part 2 (SDCL 9-22-1, 9-21-19, 9-21-20)

The following designates the fund or funds that money derived from the following sources is applied to.

	General Fund	Special Revenue
Undesignated Fund Balance	$11,082	$128,850
310 Taxes	$191,478	
310 City Sales Tax	$145,000	
310 Penalties & Interest	$200	
310 2nd Penny Sales Tax		$145,900
320 Licenses & Permits	$11,095	$0
330 Intergovernmental Revenue	$39,230	$0
331 Federal Grants	$328,500	
334 State Grants	$18,000	
340 Charges For Goods & Services	$9,000	
360 Miscellaneous Revenue	$14,500	
Total Means of Finance	**$768,085**	**$274,750**

Proprietory Funds	**WATER**	**SEWER**
Undesignated Funds	$125,000	$106,000
Estimated Revenue	$214,853	$120,550
Transfer-in from Special Revenue	$0	$100,000
Total Estimated Balance, Revenue, and and Transfers-In	$339,853	$326,550
Less Appropriations	$201,364	$151,554
Estimated Surplus Retained	$138,489	$174,996

Part 3

The Finance Officer is directed to certify the following dollar amount of tax levies made in this Ordinance to the County Auditor of Faulk County, South Dakota

Dated this 3rd day of September, 2014

Slade Roseland, Mayor

ATTEST:

Sallie Traver, Finance Officer

Placed upon its first reading August 4, 2014
Placed upon its second reading September 3, 2014
Approved and Adopted: September 3, 2014
Published: September 10, 2014
Effective: January 1, 2015

CURRENT SEWER RATE SCHEDULE

RESOLUTION #2015-08

RESOLUTION TO ESTABLISH NEW WATER AND SEWER RATES FOR THE CITY OF FAULKTON, SD.

WHEREAS, the current water rates are not sufficient to cover the cost of producing water and provide for upgrades of the water delivery infrastructure; and

WHEREAS the city of Faulkton sewer rates are not sufficient to maintain and improve the current sewer system; and

WHEREAS it is in the best interest of the city of Faulkton to set rates which will allow for proper maintain and upgrades of these systems.

NOW, THEREFORE, BE IT RESOLVED by the Faulkton City Council for Faulkton, South Dakota, that water rates and sewer rates for all residential and commercial users shall be as follows:

> Each consumer, within city limits, shall pay a minimum charge of twenty-six dollars and forty cents ($26.40) per month with no water usage included. Each consumer, outside the city limits, shall pay a minimum charge of thirty-nine dollars and sixty cents (39.60) per month with no water usage included. Water used during such month shall be at the rate of $0.00445 per gallon, equivalent to $4.45 per one thousand (1,000) gallons.
>
> Each consumer, within city limits, shall pay a minimum charge of twenty-six dollars and twenty cents ($26.20) per month for sewer service. Each consumer, outside the city limits, shall pay a minimum charge of thirty-nine dollars and thirty cents (39.30) per month for sewer services. Commercial users averaging 15,000 gallons or more will be charged a fee of which said amount will be on file in the office of the City Finance Officer.

BE IT FURTHER RESOLVED that these water rates and sewer rates shall go into effect payable January 1, 2016.

Dated this 28th day of December, 2015.

_____
Slade Roseland, Mayor

Attest:

_____
Sallie Traver, Finance Officer

AFFIDAVIT OF PUBLICATION AND PUBLIC HEARING MEETING MINUTES

NOTICE OF PUBLIC HEARING
for the
Faulkton Wastewater Improvement Project

The City of Faulkton is seeking $2,000,000 of funding from the Board of Water and Natural Resources for improvements to the wastewater treatment system. These improvements include improvements to its Wastewater System, including but not limited to replacing the wastewater collection system, lift station and force main as well as making improvements to their lagoon. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the Clean Water State Revolving Fund (SRF) Program. The Clean Water SRF loan terms are 3.25% for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of loan principal. The amount, source of funds, and terms will be determined by the Board of Water and Natural Resources when the application is presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project.

The public hearing will be held at Faulkton City Hall on December 28 at 7:00pm.

SPECIAL CITY COUNCIL MEETING
December 28, 2015

The City Council of Faulkton, SD met in a special session at the Faulkton City Hall meeting room on December 28, 2015 with Finance Officer Salle Traver and the following Council Members present were: Linda Bartholomew, David Hadrick, Danny Ramsdell, Mark Toennies and Steve Wanner. Absent: Sheilah Fischer. Others present: Trevor Cramer, Ted Dickey, Jan Hadrick, Brad Hansen, Jordan Hintz, Jerod Raethz, and Val Ramsdell. Mayor, Slade Roseland, called the meeting to order at 7:01 p.m.

2015.12.183. The following bills were approved for payment on a motion by Councilman Wanner, seconded by Hadrick. Unanimous. **Payroll for December- Total: $14887.54.** Mayor: $300, Council: $2700, Finance Officer $3120.00, Street Department: $4106.70, Water & Sewer Department $4601.34, Rubble site, 59.50

BOYD IMPLEMENT	SHARPENING CHAINS	$57.50
DESIGN SOLUTIONS & INTEGRATION	TROUBLESHOOTING AND REPLACING	$1,538.99
FAULKTON HRC	DEBT SERVICE ON 8PLEX	$3,908.36
INTERNAL REVENUE SERVICE	941 TAXES	$3,203.68
NORTH WESTERN ENERGY	STREET LIGHTS	$3,302.42
NORTHERN PLAINS CO-OP	LP HEATING FUEL SHOP	$226.00
POSTMASTER	POSTAGE	$189.00
SD DEPT. OF HEALTH (LAB)	LAB FEES	$30.00
SD RETIREMENT	SD RETIREMENT	$1,439.50
SD SUPPLEMENTAL RETIREMENT PLA	SUPPLEMENTAL RET. PLAN	$100.00
VENTURE COMMUNICATIONS COOP	FO PHONE, INTERNET FAX, WEB	$401.69

City Maintenance Report: Raethz explained the new level sensor for the clear wells was installed but is not working properly with the SCADA system. Raethz hopes the sensor holds until the SCADA system can be replaced in February.

Mayors Report: Mayor Roseland informed the council he received a message form WEB Water about installing an antenna on the city's water tower. Because the water tower is close to the Airport there are height restriction. Finance Officer Traver also received a call from Web and told them to contact the Faulkton Grain & Feed Elevator to see if they would allow the installation of their antenna.

OLD BUSINESS

2015.12.184 Utility Tractor Bid Approval. The following bids were open on the December 23rd bid opening meeting for a new Utility Tractor.

COMPANY	UTILITY TRACTOR	DECK MOWER	SNOW BLOWER ATTACHMENT	BROOM ATTACHEMENT	BID TOTAL
Potter Co. Implement	$42,754.88	$3,327.00	$10,845.00	$6,700.00	$63,626.00
Titain Machinery	$40,642.00	$2,999.00	$9,660.00	$5,090.00	$58,391.00
Artz Equipmnet	$42,600.00	$2,950.00	$5,475.00	$4,795.00	$55,820.00
Hoferts Implement Inc.	$38,297.00	$3,798.00	$4,826.00	$4,987.00	$51,908.00

Motion was made by Councilman Wanner, seconded by Ramsdell to accept the bid from Hofert's Implement for $51,908.00. Unanimous.

Sewer Project Grants/Loan Information. Ted Dickey from NECOG was present to discuss the Sewer Project Grant application and loan process for the proposed replacement of the City's wastewater collection system. This project is needed to provide adequate wastewater service to the City of Faulkton. All alternatives were evaluated, including cost of each, and were looked at by the city and engineer Dickey presented two funding applications for the council for approval. First application is for $2,000,000.00 to the Department of Natural Resources for a Clean Water Revolving Fund (SRF) loan. This loan has a term of 30 years at an interest rate of 3.25% Second application is for $2,636,000 to Rural Development. This loan has a term of 40 years at a 3.13% interest rate. If the proposed project financing is barrowed at the full amount, rate, and term the

wastewater rates would increase from $26.20 to $74.45, an increase of $48.25. Dickey stated if that would happen he would recommend the council walk away from the project until a different time when more grant funds would be available. After more discussion, **2015.12.185 Resolution # 2015-09**: Motion was made by councilman Hadrick, seconded by Bartholomew to approve the following resolution. Unanimous.

RESOLUTION NO. 2015-9

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Faulkton (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to collection system improvements, treatment system improvements, and inspecting and televising wastewater lines.(the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $5,151,000 to the South Dakota Board of Water and Natural Resources for the Project.
2. The Mayor is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.
3. The Mayor is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Faulkton, South Dakota, this 28th day of December 2015.

APPROVED:

_____

Slade Roseland
City of Faulkton

(Seal)
Attest: _____
Sallie Traver - City Finance Officer

2015.12.186 Authorizing Mayor to sign Application to Rural Development. Motion was made by Bartholomew, seconded by Wanner, to approve the Mayor signing the application for financial assistance from USDA – Rural Development, in the amount of $2,636,000, to help fund the proposed sewer project. Unanimous.

2015.12.187 Resolution 2015-07 Vacating a Portion of an Alley. Brad Hanson was present for the council to ask him questions about the mentioned vacating resolution. Councilman Wanner asked Hanson if he would still allow utility or emergency vehicles to travel down the vacated alley. Hanson stated yes he would and does not plan on blocking the alley. Councilwoman Bartholomew stated the only concern she has is when 15th avenue is developed all property owners have access on both ends of the alley. Trevor Cramer, Director of the Economic Development Corporation, stated the development board discussed this at their meeting and are not in favor of the alley being vacated. He believes it diminishes the value of the lots that the development still owned on the west side. Councilman Hadrick stated he believes the council should leave this alley open and not vacate it because where do you end on vacating alleys. Councilman Wanner motioned, seconded by Ramsdell, to approve the following Resolution. All members present voted aye, except Councilman Hadrick and Councilwoman Bartholomew who voted nay. Motion passed.

RESOLUTION #2015-07
VACATING A PORTION OF AN ALLEY

WHEREAS, a petition has been presented by Brad and Wanda Hanson to the City Council of the City of Faulkton, Faulk County, South Dakota requesting vacation of a portion of an alley.

WHEREAS, a public hearing was duly advertised and held on the 7th day of December, then motioned to move public hearing to the 28th day of December 2015; and,

WHEREAS, the portion to vacate is the personal driveway of property owners.

WHEREAS, from the evidence and testimony presented at the time of hearing it appears to the City Council, of the City of Faulkton, that said alley has not been used, worked, or traveled as an alley at any time during the period of twenty years next preceding the time for the meeting, and since the recording of the plat thereof, EXCEPT by the Utility Companies, and that there is little likelihood that said alley will ever be used, worked, traveled, as an alley, EXCEPT by the utilities, and that it is for the best interests of the City of Faulkton and all person concerned that said petition be granted,

WHEREAS, it is necessary for the public utilities and emergency vehicles, to have access to said vacated alley, this vacation is subject to the property owners giving the public utility companies and emergency vehicles a permanent easement of ingress and egress in order to maintain, construct, dig, and travel for purposes of maintaining public utility lines and emergencies.

NOW THEREFORE BE IT RESOLVED, that the following described vacation be approved by the City Council of the City of Faulkton, South Dakota.

The Alley of an approximate width of twenty feet (20') and approximate length running north and south, along lots 4, 5, 6, 7, 8, 9, 10, and 11 of Block ninety-nine (99) of the City of Faulkton, Faulk County, South Dakota.

AND BE IT FURTHER RESOLVED, that property owners along said vacated alley gives to all public utility companies and emergency vehicles a permanent easement as above set forth,

ALSO, that a certified copy of this resolution be filed for record in the office of the Register of Deeds of Faulk County, South Dakota.

Adopted by the Faulkton City Council this 28th Day of December, 2015

_____
Slade Roseland, Mayor

SEAL

ATTEST:

_____
Sallie Traver, Finance Officer
(Publish: December 30, 2015)

2015.12.188 Budget Supplement Ordinance # 38. Mayor Roseland read for its Second Reading Ordinance No. 38 entitled, "2015 Supplemental Appropriation Ordinance #38 for the City of Faulkton, Faulk County, South Dakota for the Fiscal Year Commencing January 1st, 2015". Motion was made by Councilman Bartholomew, seconded by Toennies, to approve, adopt and publish said ordinance. Unanimous.

NEW BUSINESS

2015.12.189 Waive Rubble Site Fee: Motion was made by Wanner, seconded by Bartholomew, to waive the rubble site fee to the Faulkton Development Corporation but will only be putting concrete material in the rubble site. Unanimous.

2015.12.190 Resolution 20150-08 – Water & Sewer Rates. Motion was made by Councilman Wanner, seconded by Bartholomew, to approve the following resolution. Unanimous.

RESOLUTION #2015-08

RESOLUTION TO ESTABLISH NEW WATER AND SEWER RATES FOR THE CITY OF FAULKTON, SD.

WHEREAS, the current water rates are not sufficient to cover the cost of producing water and provide for upgrades of the water delivery infrastructure; and

WHEREAS the city of Faulkton sewer rates are not sufficient to maintain and improve the current sewer system; and

WHEREAS it is in the best interest of the city of Faulkton to set rates which will allow for proper maintain and upgrades of these systems.

NOW, THEREFORE, BE IT RESOLVED by the Faulkton City Council for Faulkton, South Dakota, that water rates and sewer rates for all residential and commercial users shall be as follows:

- Each consumer, within city limits, shall pay a minimum charge of twenty-six dollars and forty cents ($26.40) per month with no water usage included. Water used during such month shall be at the rate of $0.00445 per gallon, equivalent to $4.45 per one thousand (1,000) gallons. Each consumer, outside the city limits, shall pay a minimum charge of thirty-nine dollars and sixty cents (39.60) per month with no water usage included. Water used during such month shall be at the rate of $0.00668 per gallon, equivalent to $6.68 per thousand (1,000) gallons.
- Each consumer, within city limits, shall pay a minimum charge of twenty-six dollars and twenty cents ($26.20) per month for sewer service. Each consumer, outside the city limits, shall pay a minimum charge of thirty-nine dollars and thirty cents (39.30) per month for sewer services. Commercial users averaging 15,000 gallons or more will be charged a fee of which said amount will be on file in the office of the City Finance Officer.

BE IT FURTHER RESOLVED that these water rates and sewer rates shall go into effect payable January 1, 2016.

Dated this 28th day of December, 2015.

_____
Slade Roseland, Mayor

Attest: _____
Sallie Traver

2014.191. Adjournment. There being no other business to come before the council, Councilman Hadrick moved to adjourn, seconded by Councilman Ramsdell. Unanimous. Time 7:40 p.m.

_____
Slade Roseland, Mayor

_____
Sallie Traver, Finance Officer

FACILITY PLAN AND COST ESTIMATES

Table 4.3.6-3 Collection System Alternative 6: Estimated Construction Cost Phase I and II

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$294,800.00	$294,800.00
2	Remove and Dispose of Existing Asphalt	39,200	SqYd	$3.00	$117,600.00
3	Remove and Dispose of Existing Manhole	44	Each	$400.00	$17,600.00
4	Clean, Inspect and Prerehabilitation Televise of 18"	1,128	LF	$2.50	$2,820.00
5	Clean, Inspect and Prerehabilitation Televise of 15"	700	LF	$2.50	$1,750.00
6	Clean, Inspect and Prerehabilitation Televise of 12"	1,030	LF	$2.25	$2,317.50
7	Clean, Inspect and Prerehabilitation Televise of 10"	1,118	LF	$2.00	$2,236.00
8	Clean, Inspect and Prerehabilitation Televise of 8"	3,422	LF	$2.00	$6,844.00
9	18" Cured in Place Pipe Liner (CIPP Liner)	1,128	LF	$40.00	$45,120.00
10	15" Cured in Place Pipe Liner (CIPP Liner)	700	LF	$35.00	$24,500.00
11	12" Cured in Place Pipe Liner (CIPP Liner)	1,030	LF	$31.00	$31,930.00
12	10" Cured in Place Pipe Liner (CIPP Liner)	1,118	LF	$28.00	$31,304.00
13	8" Cured in Place Pipe Liner (CIPP Liner)	3,422	LF	$25.00	$85,550.00
14	Cut Protruding Tap, Offset Joints, Mineral	250	Each	$85.00	$21,250.00
15	Sewer Service Tap Cut Out to Reinstate Service	160	Each	$175.00	$28,000.00
16	Manhole Interior Lining	60	VF	$225.00	$13,500.00
17	12" SDR 35 PVC Sanitary Sewer Pipe	2,581	LF	$45.00	$116,145.00
18	10" SDR 35 PVC Sanitary Sewer Pipe	5,203	LF	$40.00	$208,120.00
19	8" SDR 35 PVC Sanitary Sewer Pipe	9,218	LF	$37.00	$341,066.00
20	12" Casing pipe	220	LF	$50.00	$11,000.00
21	Sanitary Sewer Manhole	59	Each	$2,800.00	$165,200.00
22	12" x 4" Sanitary Sewer Wye	65	Each	$270.00	$17,550.00
23	10" x 4" Sanitary Sewer Wye	15	Each	$220.00	$3,300.00
24	8" x 4" Sanitary Sewer Wye	180	Each	$145.00	$26,100.00
25	4" SDR 35 Sanitary Sewer Pipe	13,000	LF	$21.00	$273,000.00
26	Post-Rehabilitation Televising of 18" Diameter	1,128	LF	$1.50	$1,692.00
27	Post-Rehabilitation Televising of 15" Diameter	700	LF	$1.50	$1,050.00
28	Post-Rehabilitation Televising of 12" Diameter	1,030	LF	$1.50	$1,545.00
29	Post-Rehabilitation Televising of 10" Diameter	1,118	LF	$1.50	$1,677.00
30	Post-Rehabilitation Televising of 8" Diameter	3,422	LF	$1.50	$5,133.00
31	Connect to Existing Sewer Service & Cleanout	260	Each	$375.00	$97,500.00
32	Manhole Post Construction Testing	59	VF	$200.00	$11,800.00
33	Bypass Pumping	1	LS	$20,000.00	$20,000.00
34	Pipe Bedding	5000	Tons	$14.50	$72,500.00
35	Asphalt Surfacing	9,100.0	Tons	$150.00	$1,365,000.00
36	Concrete Sidewalk Repair	10,400	SqFt	$7.00	$72,800.00
37	Concrete Curb & Gutter Repair	1,300	Ft	$30.00	$39,000.00
38	Gravel Base Course (10")	22,300.0	Tons	$17.00	$379,100.00
39	Traffic Control	1	LS	$11,575.00	$11,575.00
40	Topsoil, Seed, Fertilize & Mulch	3.0	Acres	$3,500.00	$10,500.00
	Construction Subtotal				$3,979,474.50
	Contingencies (10%)				$398,000.00
	Construction Total				**$4,377,474.50**
	Design Engineering				$310,900.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$342,000.00
	USDA-RD Additional Services				$25,000.00
	Administration & Legal				$88,000.00
	Total Project Cost				**$5,150,874.50**

WASTEWATER FACILITY PLAN
FOR
CITY OF FAULKTON

PROJECT NUMBER A-5130
FEBRUARY 2012

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of South Dakota.

By _____
Jay C. Koch, P.E.

Registration Number 6127

Date February 15, 2012

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
6127
JAY C.
KOCH
SOUTH DAKOTA

Helms & ASSOCIATES
CIVIL ENGINEERS & LAND SURVEYORS
P.O. Box 111
Aberdeen, South Dakota 57402

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1 INTRODUCTION

1.1 PURPOSE

The City of Faulkton has contracted with the engineering firm of Helms and Associates (Helms) to complete an investigation of its existing wastewater collection and treatment systems. The intent of the study is to identify and quantify problems that exist within these systems.

The results of the completed investigation are presented in this Facility Plan. The Facility Plan contains the information on which the City Council of Faulkton can base cost-effective decisions relating to the necessary improvements to its wastewater collection and treatment systems. The City Council will, after appropriate public input, determine the best options to make any needed improvements that are identified in the Facility Plan.

Loan and grant funding will undoubtedly be desired to make any of the improvements that are recommended herein. This Facility Plan will be a valuable tool for the community to pursue the funding necessary in its efforts to make needed public improvements.

1.2 SCOPE

The scope of work for this Wastewater Evaluation includes:

1) A review of the water purchases and wastewater treatment plant discharge records.
2) An analysis of the wastewater collection system to identify potential sources and quantities of infiltration/inflow into the wastewater collection system based on a comparison of the available recorded water sales, flow monitoring and the available precipitation event data.
3) Installing a continuous flow recorder in one of the manholes upstream from the treatment facility for not less than a 30-day period for the purpose of gathering wastewater flow data over a 24-hour period during the period the flow recorder is in place.
4) Identifying and analyzing requirements of governmental authorities having jurisdiction to approve the design of the project and participating in consultations with such authorities.
5) Preparation of a general economic analysis of Faulkton's requirements applicable to various alternatives.

6) Completion of a general population analysis for the purpose of projecting future population trends.
7) Identification of current and potential future areas of development in and adjacent to the Client's service area.
8) An evaluation of the capability of the current wastewater collection and treatment systems to meet present and future needs and NPDES permit discharge standards.
9) Performing smoke testing of the sanitary sewer collection system to identify possible locations and number of cross connections between the storm and sanitary sewer systems.
10) Preparation of a written report, with maps and sketches, setting forth the findings and recommendations of the Preliminary Study, provide ten (10) copies of said report to Faulkton and meet with Faulkton to review said report.
11) Assisting Faulkton in the presentation of the findings and recommendations of the Preliminary Study at not more than one (1) public hearing.
12) Assisting Faulkton in the preparation of an application for the State Water Plan.

1.3 AUTHORIZATION

The firm of Helms and Associates was authorized as per a Letter of Agreement dated February 7, 2011, by the governing body of the City of Faulkton to proceed with the evaluation of the City of Faulkton wastewater collection and treatment systems. The following report presents the findings and conclusions resulting from the authorized study.

2 COMMUNITY DESCRIPTION

2.1 GENERAL INFORMATION

The City of Faulkton is located in central Faulk County, South Dakota, approximately 5 miles west of the intersection of U.S. Highway 212 and South Dakota Highway 45 as indicated on Figure 2.1-1. The City of Faulkton was incorporated in 1882. The City has an aldermanic type of government, consisting of a Mayor and six council members. These elected representatives hire and oversee staff that manages the day to day activities and municipal enterprises undertaken by the City.

Faulk County is in the north central part of South Dakota. It has a total surface area of approximately 638,720 acres of which 2,000 acres are water. Other communities located within the county include Cresbard, Seneca and Orient. General livestock and farming are the major sources of income within the county, with approximately 84% of the total acres in the county devoted to crop production. Corn, soybeans, hay and wheat are the main crops. Faulkton is a typical rural community that serves the surrounding agricultural area as a retail trade center that provides limited shopping and other essential services.

2.2 POPULATION CHARACTERISTICS

Faulkton's population is 785 according to the 2000 census. The most recent Census Bureau data available at the time of this report indicates that Faulkton's median age was 51.0 years as compared to the state's median age of 35.6. At the time census data was gathered, 35.5% of its population was over the age of 65. In comparison, the state's population that is over the age of 65 is 14.3%.

Data from the 2000 census indicates that the community's median household income of $29,853 was about $384 lower than Faulk County's median household income of $30,237. At the time the census data was gathered, about 2.4% of the families living in the community had incomes at or below the poverty level while 12.9% of the families living in Faulk County fell into this category.

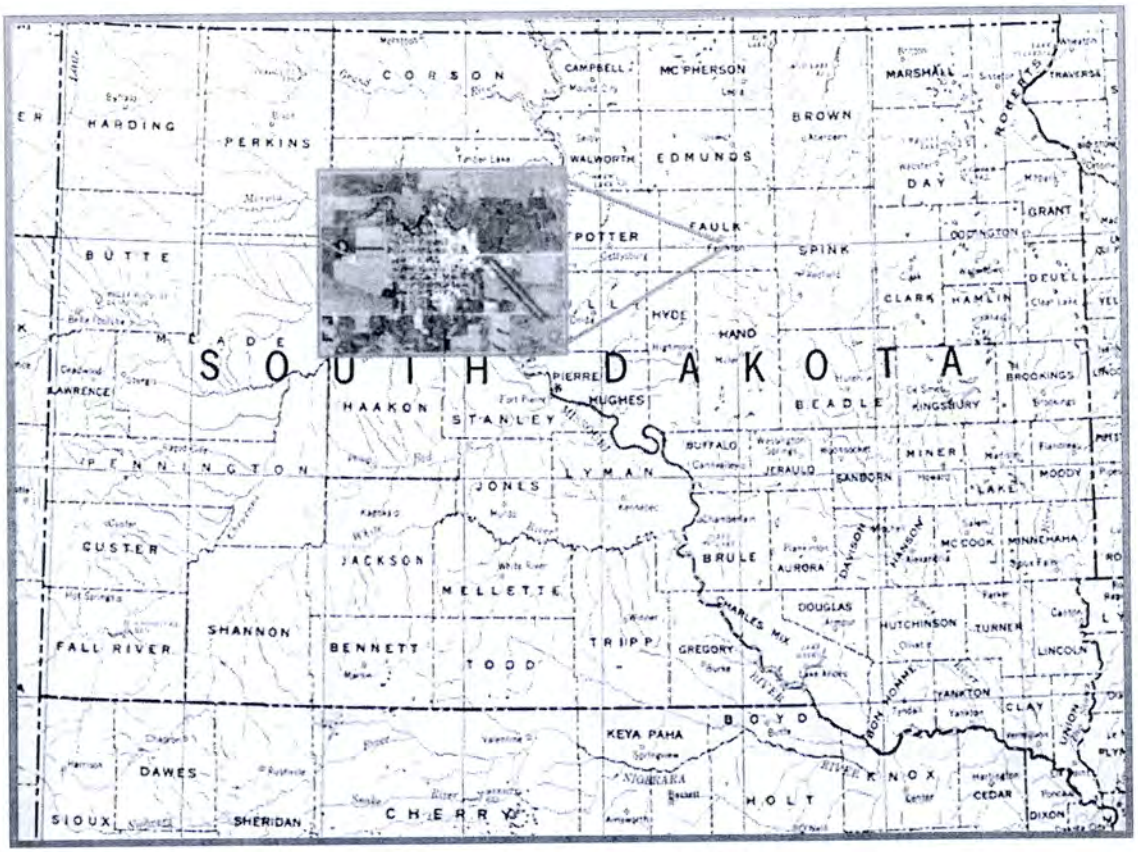


Figure 2.1-1 Location Map

2.3 POPULATION PROJECTIONS

The 2000 Census Bureau data shows the population for Faulkton to be 785. Table 2.3-1 and Figure 2.3-1 indicate Census Bureau population data from 1890 to 2000 and present the estimated population for the community through the year 2040. As shown by the historical data, the population has had a steady decline since 1960. The decline in recent years is typical for rural communities such as Faulkton. This can be accredited to the number and size of the farming families decreasing and the large population of elderly people. The decline in population has slowed and it is projected that the population should stabilize.

Table 2.3-1 Historic and Projected Population

Year	Population	Year	Population
1890	462	1970	955
1900	539	1980	981
1910	802	1990	809
1920	769	2000	785
1930	739	2010	736
1940	747	2020 (Est.)	736
1950	837	2030 (Est.)	736
1960	1051	2040 (Est.)	736

The data shown in Table 2.3-1 is shown graphically in Figure 2.3-1.

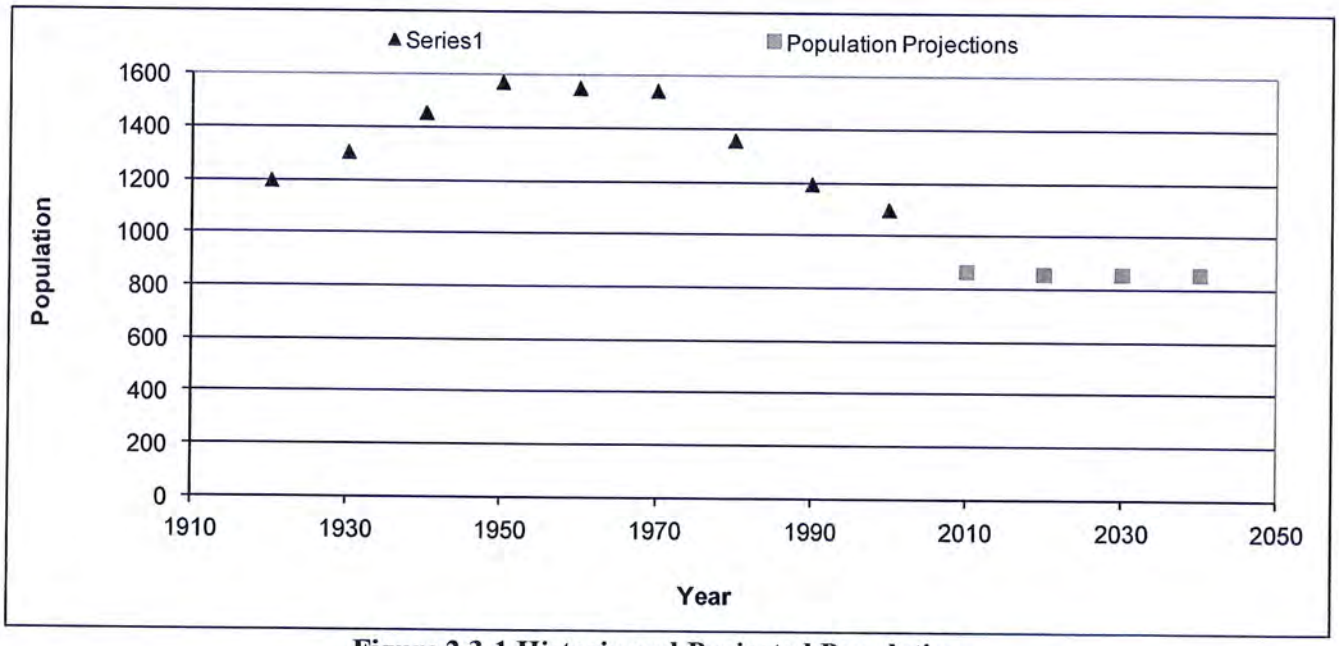


Figure 2.3-1 Historic and Projected Population

2.4 TOPOGRAPHY/CLIMATE

Faulk County is split into two drainage areas. The eastern portion of the county is in the James Basin portion of the Central Lowland. The central and western parts are on the Coteau du Missouri. Elevations in the county range from 2,015 feet in the southwest to 1,355 feet above sea level in the east.

The area's climate is generally described as a continental climate. Winters are relatively long and cold while summers are fair and warm. Most of the precipitation occurs during the months of April through September. Approximately 80% of the total annual precipitation falls during these months. Normal precipitation for the area is 18.0 inches annually.

2.5 ENVIRONMENTAL REVIEW INFORMATION

As part of the environmental assessment requirement for the facility planning process, Helms has sent out the required letters to contact various state and federal agencies. Environmental assessment letters have been sent to the following agencies. As expected no adverse environmental impacts from improvements to the collection and treatment will occur due to construction taking place on previously disturbed areas.

2.5.1 Floodplains and Wetlands

2.5.1.1 Flood Hazard Evaluation

The U.S. Army Corps of Engineers was contacted for the purpose of soliciting input on the proposed improvements. Correspondence can be seen in Appendix A.

2.5.1.2 Floodplain Construction Permits

The U.S. Army Corps of Engineers was contacted for the purpose of soliciting its review and comments related to the possible need for permits authorized under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. Correspondence can be seen in Appendix A.

2.5.1.3 Wetlands

The U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on wetlands. Correspondence can be seen in Appendix A.

2.5.2 Agricultural Lands

The U.S. Department of Agriculture State Soil Scientist was contacted for the purpose of soliciting input on the proposed improvements. Correspondence can be seen in Appendix A.

2.5.3 Wild and Scenic Rivers

Comments were requested in regards to "Wild and Scenic Rivers" in the area. Correspondence can be seen in Appendix A.

2.5.4 Fish and Wildlife Protection

2.5.4.1 Endangered Species

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on endangered species which might result from construction of the proposed improvements. Correspondence can be seen in Appendix A.

2.5.4.2 Critical Habitat

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish and Parks were contacted for the purpose of soliciting input related to potential impacts on critical wildlife habitats which might result from construction of the proposed improvements. Correspondence can be seen in Appendix A.

2.5.5 Water Quality and Quantity

The South Dakota Department of Environment and Natural Resources was contacted for the purpose of soliciting review and comments related to potential impact on water quality and quantity that could result from the proposed project. Correspondence can be seen in Appendix A.

2.6 DIRECT AND INDIRECT IMPACTS

Negative environmental impacts which may be expected during a project of this nature include, but are not necessarily limited to, soil erosion, noise pollution, traffic obstruction, and increased surface runoff due to trench dewatering operations. However, such impacts are temporary and will not significantly affect the environment over the long term.

Positive environmental impacts include enhanced human health and safety and more efficient delivery and treatment of municipal water. Such impacts are of long-term value to the residents of Faulkton and Walworth County.

2.7 MITIGATION ADVERSE IMPACTS

Adverse impacts will be minimized to the greatest extent possible by the implementation of accepted cautionary measures. Temporary and permanent erosion control will be included in construction contracts. Appropriate permits will be secured prior to the discharge of any trench dewatering or storm waters, and protection of public health, safety and welfare will be incorporated into the specifications and contract documents. Additionally, should any permanent adverse impacts result from the project, mitigating measures will be followed to the satisfaction of the appropriate review agency.

3 WASTEWATER SYSTEM ANALYSIS

3.1 GENERAL COLLECTION SYSTEM INFORMATION

The core of the existing collection system consists of approximately 4,176 feet of 4-inch, 10,312 feet of 6-inch, 8,516 feet of 8-inch, 5,218 feet of 10-inch vitrified clay pipe (VCP) and an estimated 37,000 feet of 4-inch, and 500 feet of 6-inch service lines, based on current mapping information. The clay pipe is at least as old as the treatment system that was built in 1960's. Additionally there is approximately 5,500 of 4" and 6" PVC located on the south and north end of the City. There are approximately 59 manholes. At the time of this study the City had 420 connections to the wastewater collection system of which 410 are residential connections and 10 commercial. There are also two septic systems inside the City limits. One septic tank system is located at Elm and 14th Ave and the other services the Airport. The best estimate of the existing system is shown in Figure 3.1-1. One of the concerns with the sanitary sewer collection system is the lack of records showing piping locations, sizes, and service locations. It will be a priority to accurately map the wastewater system and update City records.

Sanitary sewer flow in a sanitary sewer collection system is generally composed of wastewater from homes, businesses, industry and clear water that is referred to as infiltration and inflow (I&I). Water that enters the collection system through bad pipe joints, manhole walls and cracked pipes is infiltration. Water that enters the collection system from perforated manhole covers, improperly abandoned lines, storm sewer connections, roof drains and basement sump pumps that are connected to the sanitary sewer system is inflow. Normally, a wastewater collection system is designed to carry a nominal amount of I&I. However, when I&I becomes excessive, the system can become overloaded with harmful effects.

3.2 SEWER CLEANING AND TELEVISING

Portions of the wastewater collection system were inspected by a robotic camera in September of 2009 and May of 2010. A-Tech Sewer from Watertown, South Dakota, performed the sewer cleaning and TV inspection on approximately 3223 feet of the total 28,223 feet of sewer main in use. Figure 3.2-1 illustrates which sections have been televised. As typically found in VCP of

this age, there were widespread deficiencies documented throughout the sewer pipes. The televising discovered deficiencies that could not have been identified otherwise. Some of the deficiencies that were discovered included: sags, cracks, infiltration, intruding services, roots and deteriorated manholes. Sags, intruding services and roots create flow problems. Sediment can start to accumulate in these areas and eventually cause a plug. A plugged line will lead to sewage backing up into homeowners' basements.

Infiltration can be detected by visually seeing clear water entering a crack in the pipe or at a manhole. It can also be detected from mineral deposits that will form on joints from the continuous infiltration. The figures from the report further verified that a severe case of infiltration does exist in the system. Many joints in the pipe had mineral deposits or tree roots growing into them. In addition, many of the service connections had mineral deposits or tree roots growing into them. At some of the services, mineral deposits or roots were so severe that the flow from the service pipe was significantly impeded, if not stopped altogether. In some cases, trees roots were protruding from the service line into the main and impeding the flow of the main line. The deposits viewed indicate that groundwater is entering the pipe and minerals from the water are depositing as it seeps in. The roots indicate that the joints or services are not sealed adequately and therefore are allowing roots to grow into the pipe. These roots will further allow a pathway for water to seep into the pipe. See Figures 3.2-2 through 3.2-5 for examples of pipe deficiencies.

Based on research performed by the National Clay Pipe Institute, clay pipe is quite durable and may remain in service for approximately 50 to 125 years. However, as evidence from TV inspection indicates, many structural deficiencies have been identified which should be remedied. Probably the most significant location noted for structural problems and allowing infiltration are the connection of the service lines to the main sewer system.

The remaining 88% of the system that has not been televised should be inspected to identify all deficiencies within the collection system. Identifying deficiencies within the system is crucial to setting up a maintenance or replacement schedule.

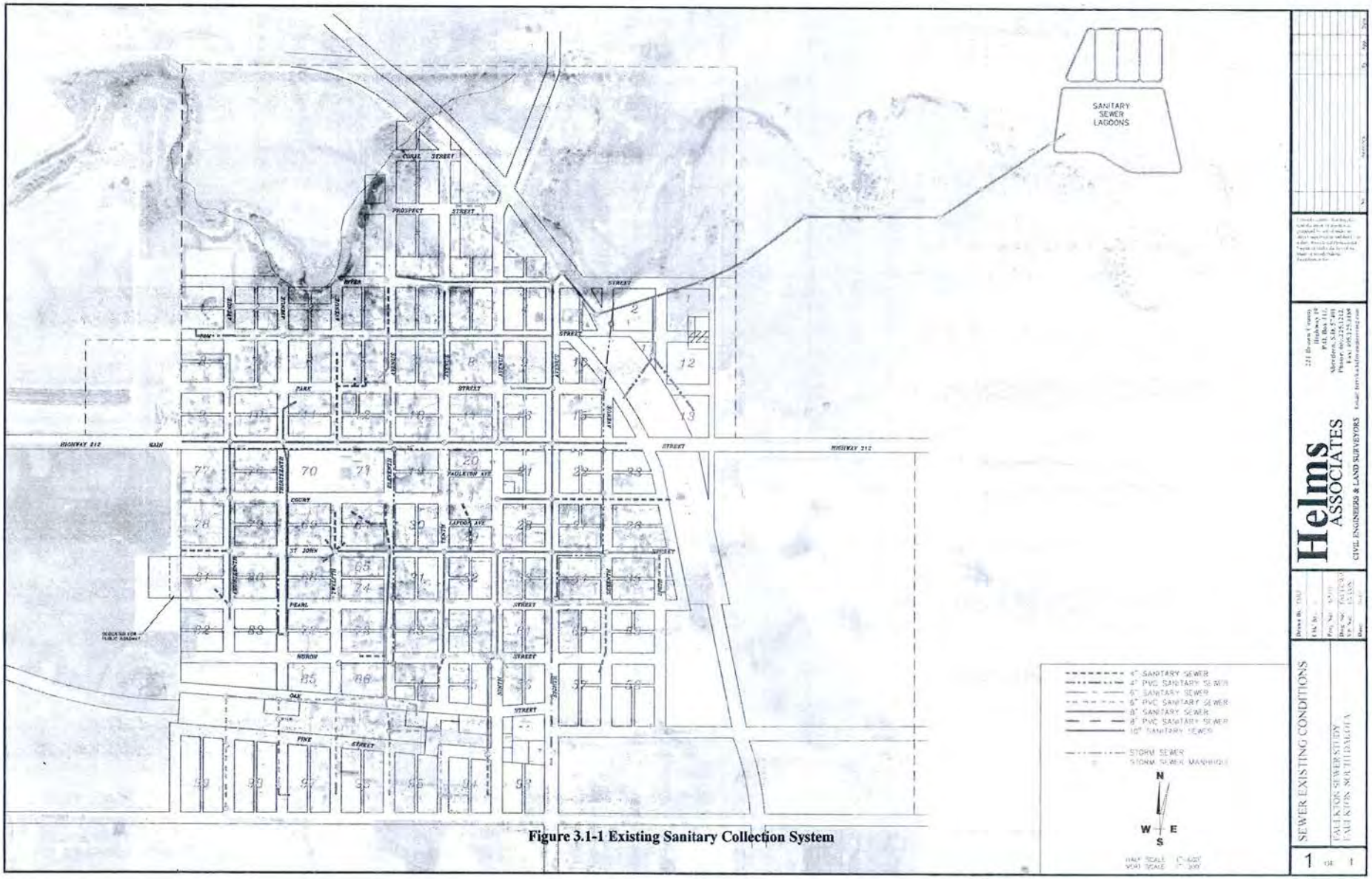


Figure 3.1-1 Existing Sanitary Collection System

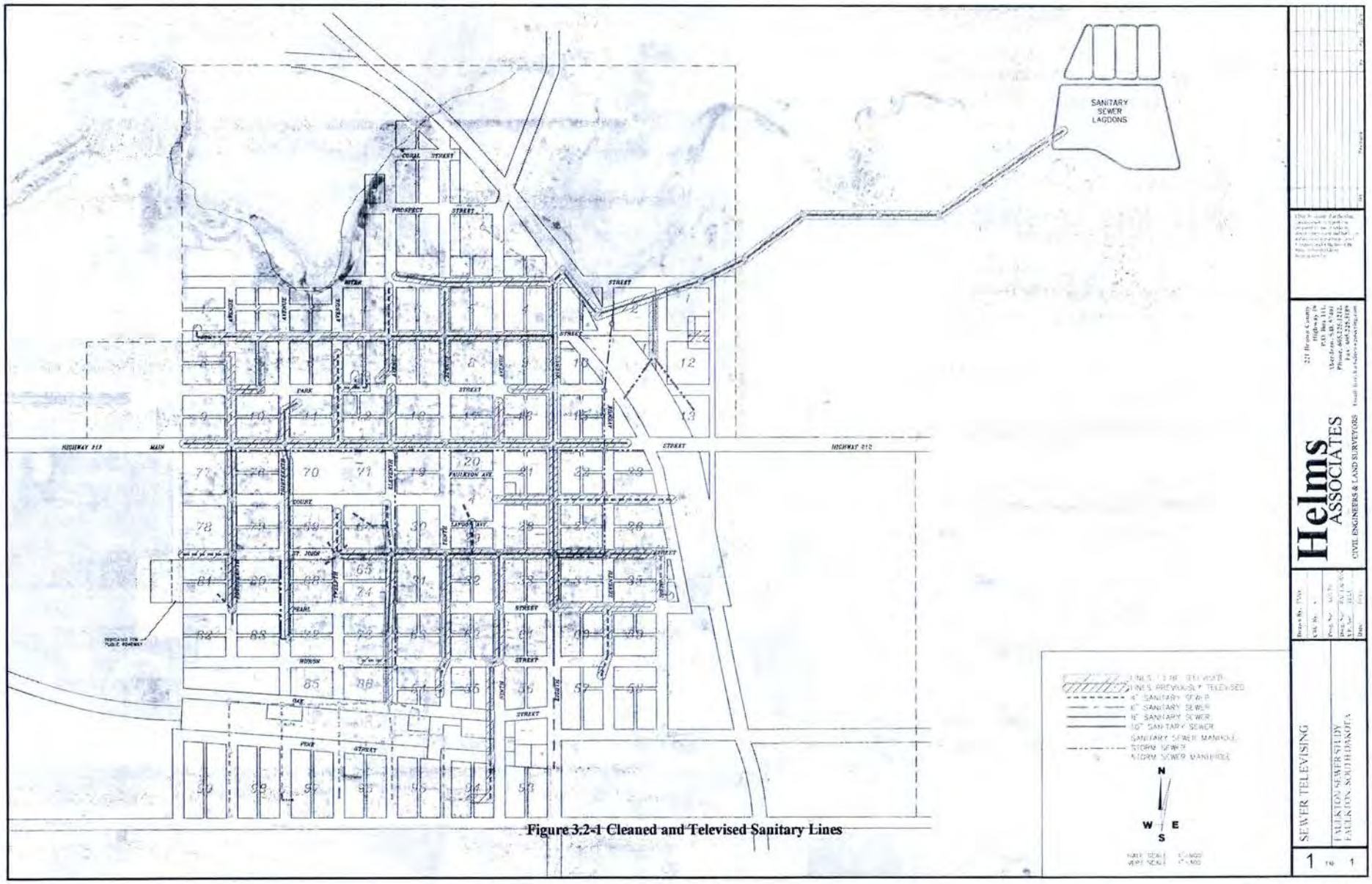


Figure 3.2-1 Cleaned and Televised Sanitary Lines

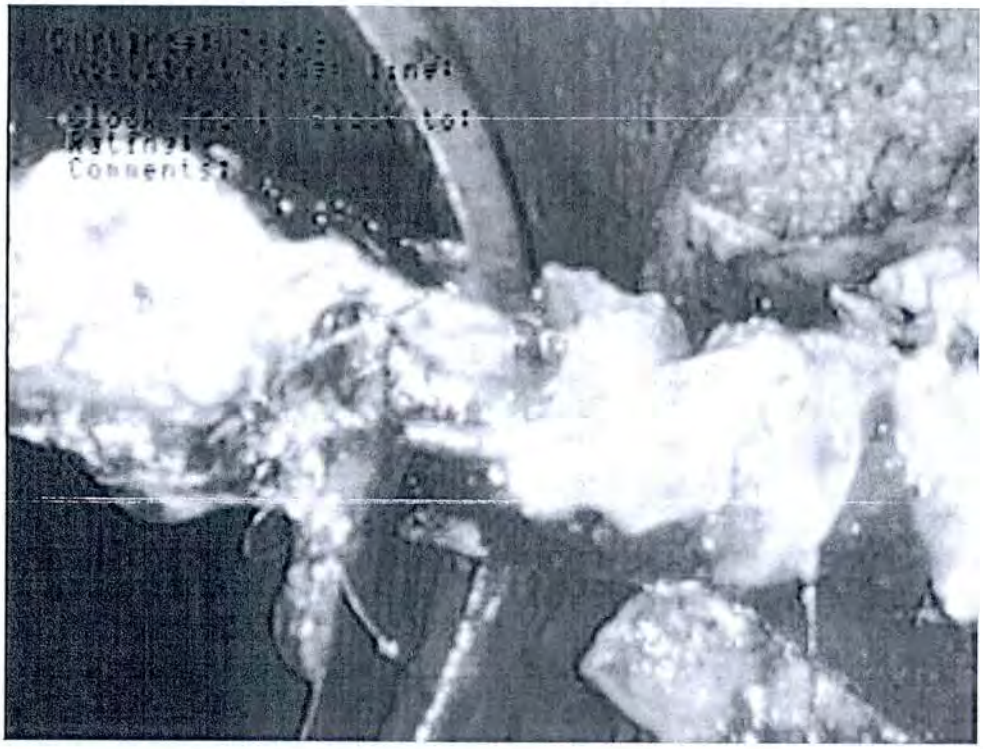


Figure 3.2-2 Cable Bored through Sewermain

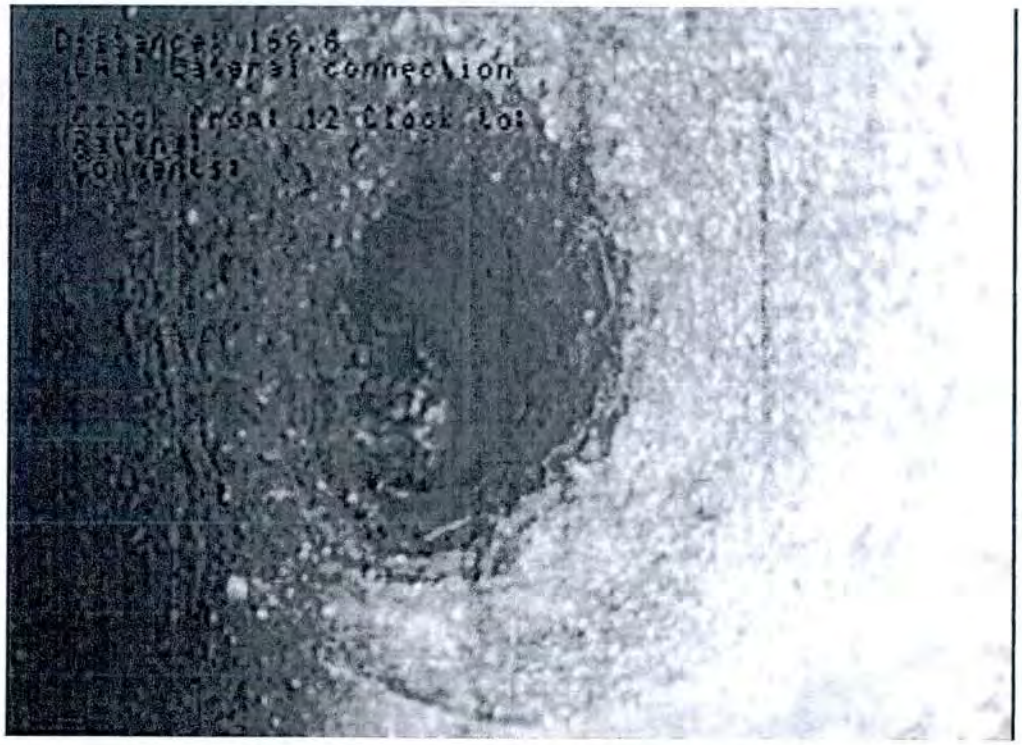


Figure 3.2-3 Tree Roots in service connection

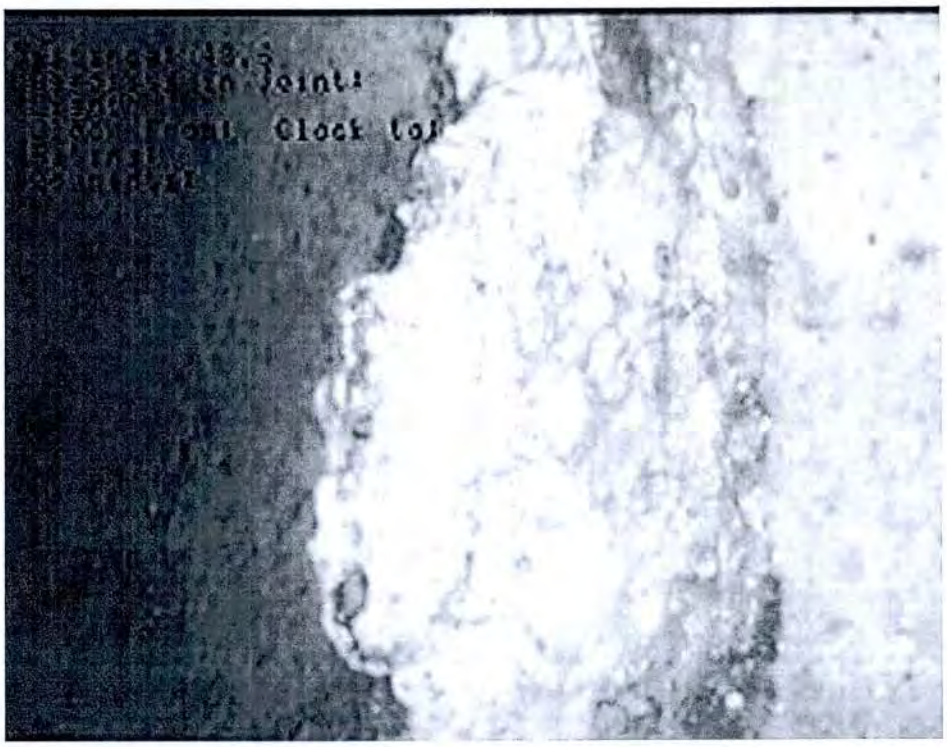


Figure 3.2-4 Joint Deposit buildup

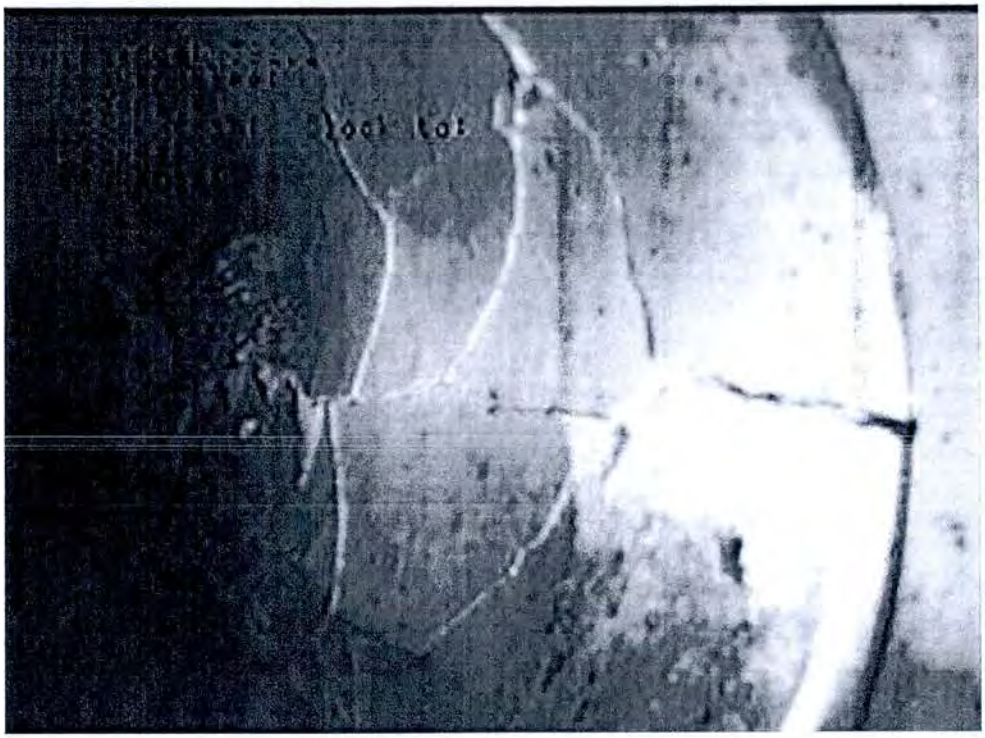


Figure 3.2-5 Structural Damage

3.3 SMOKE TESTING

The City of Faulkton and South Dakota Association of Rural Water Systems performed smoke testing of the collection system throughout the entire community as part of the wastewater system evaluation. The City completed the smoke testing on September 2, 2009. The main objective of the smoke testing was to help identify sources of I&I resulting from sewer deficiencies. Smoke testing can also be beneficial to residences as it can indicate potential sources of sewer gas leaks within homes and businesses. The presence of smoke from catch basins identifies areas that may be directly connected to the sanitary sewer. Smoke coming from the ground indicates areas where cracks in the sanitary sewer are allowing infiltration or inflow due to the existence of abandoned service connections.

The areas that were identified during the smoke testing are as follows:

1) There are five storm sewer inlets that contribute I & I to the sewer system. The city superintendent was onsite and viewed the locations.
2) There are 18 services that were indentified during the testing that contribute to I&I to the sewer system. The city superintendent was onsite and viewed the locations.

3.4 EXISTING WASTEWATER FLOWS

3.4.1 Domestic Wastewater Flow

The average domestic wastewater flows can be determined with multiple methods recommended by the SD DENR and EPA. The most accurate method is to analyze the town's water records during the winter months.

Because there is little water usage during the winter period months that does not reach the sanitary sewer, it was assumed that 100% of the water billed at the homes reaches the wastewater collection system. Based on the information provided and shown in Table 3.4.1-1 the estimated wastewater flow was calculated at 72 gallons per day per capita. As a result, the average daily volume of water that reaches the sanitary sewer is estimated to be 52,992 gpd (72 gpcpd x 736 persons).

Table 3.4.1-1 Water Usage Records

	2008-2009				2009-2010				2010-2011			
Month	Purchased (Gal)	Billed (Gal)	Precip (in)	Purchased (gpcpd)	Purchased (Gal)	Billed (Gal)	Precip (in)	Purchased (gpcpd)	Purchased (Gal)	Billed (Gal)	Precip (in)	Purchased (gpcpd)
December	1,809,000	1,549,000	1.3		1,914,000	1,574,920	1.12	63	2,380,200	1,728,220	1.12	78
January	1,892,000	1,612,342	0.19		1,997,000	1,451,850	1.15	65	2,141,500	2,115,087	1.15	70
February	1,614,000	1,410,952	1.42		1,874,000	1,559,870	1.01	61	2,185,200	1,380,654	0.98	72
Total	5,315,000	4,572,294	2.91		5,785,000	4,586,640	3.28		6,706,900	5,223,961	3.25	
Average Day	59,056	50,803			64,278	50,963			74,521	58,044		
Average (gpcpd)	80	69			87	69			101	79		

average percent unaccounted for water	14.0%	20.7%	22.1%

Average Per Capita Usage for Dec, Jan, Feb (Based on Billed Water) = 72 gpcpd

Average Day for Dec, Jan, Feb (Based on Billed Water) = 53,270 gpd

Average Percentage of Unaccounted-for Water 18.9%

Average Day Supplied = 65,951 gal

Average Day Billed = 53,270 gal

On the basis of the 420 connections to the sanitary sewer, the average flow from each connection is equal to the 52,992 gallons per day divided by the 420 connections or 126 gallons per day per connection.

Chapter 1.C.2 of the Recommended Design Criteria for Wastewater Collection and Treatment Facilities as published by the South Dakota Department of Environment and Natural Resources (SD DENR) states that wastewater flows can be justified by local water consumption records but shall not be less than 60 gpcpd. Since our daily wastewater flow is above the SD DENR standard, 72 gpcpd will be used.

A pump monitoring device was installed by Helms in the last manhole in the north east corner of town before the outfall pipe to the treatment facilities. The intent of placing the monitoring device was to more closely evaluate the fluctuations in wastewater flow on an hourly/daily/weekly basis. These results would also provide a better evaluation of the effects of inflow and infiltration on the system. The average daily flow that was recorded was 582,124 gpd as compared to the estimated flow of 52,992 gpd (72 gpcpd x 736 people). The recorded flow was obtained during a wetter than normal spring which would provide higher than normal flows. A copy of the flow recording results can be found in Appendix E. The results of the wastewater flow vs. precipitation from the most recent spring months are shown graphically in Figure 3.4.1-1.

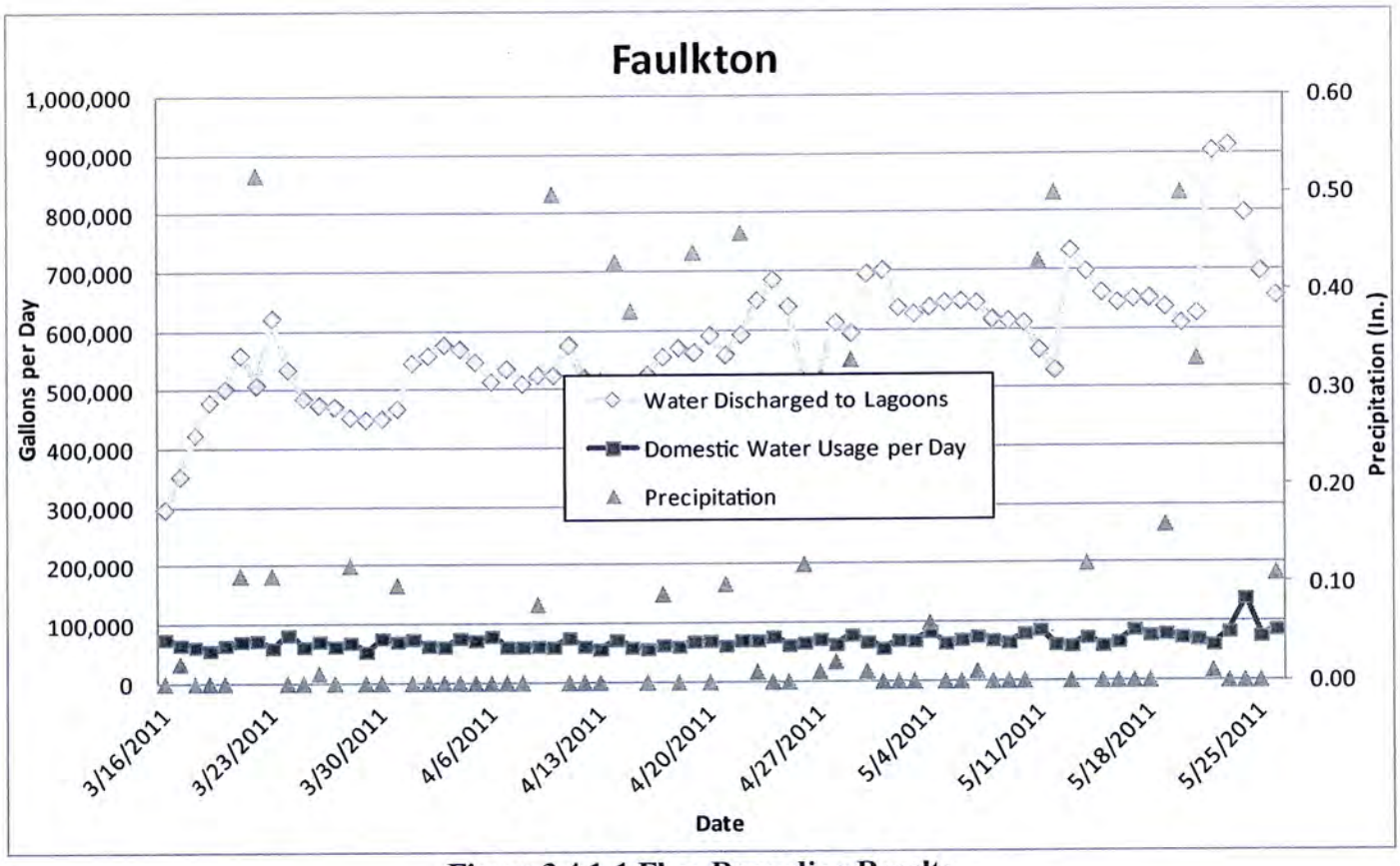


Figure 3.4.1-1 Flow Recording Results

3.4.2 Infiltration and Inflow Analysis

Water that enters the wastewater collection system through cracked pipes, poor joints, and the walls of manholes is referred to as infiltration. Infiltration occurs when groundwater tables are at or above the level of the sanitary sewer piping. Evidence of infiltration in a wastewater collection system is apparent by the consistently high average daily flows in months and years with above-normal precipitation. This is not unexpected as above-normal precipitation results in increased levels of the groundwater table. As the groundwater table rises, more of the sewer system is subject to infiltration thus increasing the amount of infiltration. In addition, the higher groundwater level increases the groundwater pressure on the sewer system thus increasing the infiltration through any given opening. Infiltration uses up the reserve capacity of the sewer collection system, wastewater pumping facilities and the wastewater treatment facilities. This results in a decreased capacity for growth and an increased need for a larger treatment system to handle the higher flows.

The SD DENR has established a standard maximum acceptable allowance for infiltration. Over the years, the standard has gradually decreased from an allowance of 200 gallons per day per inch of diameter per mile of pipe for clay pipe to the current allowance of 50 gallons per day per inch of diameter per mile of pipe for PVC pipe. Based on the estimated total diameter-length in inch-miles data in Table 3.4.2-1, an infiltration flow of 13,635 gpd should be considered acceptable.

Table 3.4.2-1 Wastewater Collection System Data

Sanitary Sewer Diameter (in)	Pipe Type	Total Length of Sanitary Sewer (ft)	Total Diameter-Length (in-dia)	Total Diameter-Length (in-mile)	SD-DENR Allowable I&I	Total Gallons per Day
4	VCP	4,840	19,360	3.7	200	733
4	PVC	910	3,640	0.7	50	34
4	VCP Service	25,310	101,240	19.2	50	959
4	PVC Service	8,440	33,760	6.4	50	320
6	VCP	5,015	30,090	5.7	200	1,140
6	PVC	6,165	36,990	7.0	50	350
8	VCP	12,495	99,960	18.9	200	3,786
8	PVC	1155	9,240	1.8	50	88
10	VCP	5,170	51,700	9.8	200	1,958
10	Outfall VCP	3,960	39,600	7.5	200	1,500
Total =		67,710	402,580	57.1		10,101

Note: The total length of 4-inch diameter sanitary sewer includes an assumed length of sewer service piping that is based on an assumed length of 75 feet per connection with 25% PVC and 75% VCP.

The Environmental Protection Agency (EPA) has established a threshold above which infiltration, domestic wastewater flow, industrial flow and commercial flow is considered to be excessive. This threshold is 120 gpcpd. Because the winter months are not normally considered to include significant quantities of surface water inflow, the above threshold value is normally determined during the winter period. On the basis of this threshold value, the maximum allowable flow during the months of December, January and February should not be expected to exceed 88,320 gpd (736 people x 120 gpcpd).

Inflow is generally described as the clear water that enters the wastewater collection system from storm sewer connections, perforated manhole covers, improperly abandoned lines, roof drains,

basement sump pumps, and other drainage systems. Inflow generally occurs during or shortly after periods of snow melt and individual precipitation events.

The EPA's upper limit for what they consider "normal wastewater flows during wet periods" is 275 gpcpd (EPA, 1975). Based on these calculations the EPA threshold limit for wet periods is 202,400 gpd (736 people x 275 gpcpd). Figure 3.4.2-1 shows this limit and when it has been exceeded. The figure shows that approximately 100 percent of the days had wastewater flows well above the EPA upper limit during the spring of 2011.

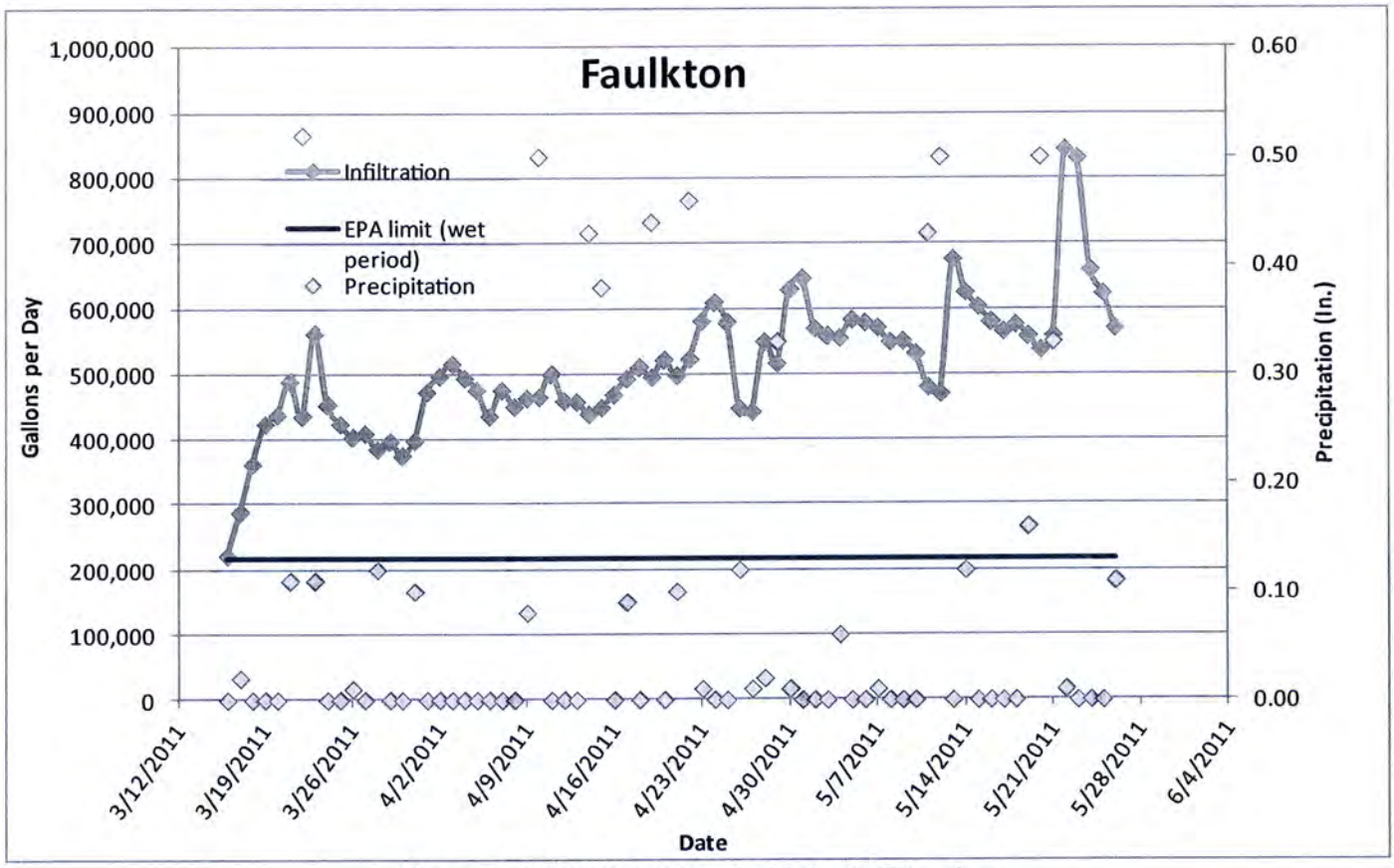


Figure 3.4.2-1 EPA Threshold for Infiltration

3.5 WASTEWATER TREATMENT

Faulkton's wastewater treatment pond is located 3/4 mile northeast of the City. The treatment system is shown in Figure 3.5-1. The treatment facility operates under Surface Water Discharge (SWD) Permit #SD0021971. A copy of the permit and current standards is contained in Appendix B. The system was originally constructed in 1985-86 with discharge to the South Fork

Snake Creek. Treatment standards have changed over the useful life of the project. All modifications made to the treatment facility have been at the recommendation of regulatory agencies in order to keep the facility within the parameters of its discharge permit. A copy of the SWD Compliance Inspection Report is presented in Appendix D.

Currently, the system consists of a gravity flow collection system that contributes flow to a 9 acre primary pond with four one acre polishing ponds. The polishing ponds are operated in parallel and are designed as a rapid infiltration basin using an underdrain system to discharge the treated wastewater. Flow is measured using a weir at the discharge point. For our calculations we are assuming that the primary pond has an effective depth of five feet and the polishing ponds have storage of 1 foot. Based on the DENR Design Criteria Manual the effective storage depth is measured from two feet above the floor to the bottom of the freeboard. The minimum freeboard depth required by the DENR is three feet.

On June 29, 2011, the outfall pipe to the treatment facilities was broken over the South Fork Snake Creek after a five (5) inch rain flash flooded the creek. The event resulted in an illegal discharge to the creek. The pipe was repaired and a sample was taken from 200 yards downstream during that time. The City of Faulkton informed the SD-DENR on July 8, 2011 with a letter.

The primary pond has riprap around the exterior of the ponds that has been effective in stopping erosion from occurring. At this time there are no known issues with the ponds functioning.

- Every effort must be made to ensure that the discharged effluent is within permit limits in order to protect the environment and maintain compliance with permit conditions.

The following actions are recommended by the DENR:

- Written procedures should be made containing what to do and who to contact in the event of a major storm, a chemical release into the sewer system, or a sewer main break.
- Develop a routine sewer cleaning schedule for the entire collection system. Developing a routine cleaning schedule will:

    1. Help prevent sewer back-ups.

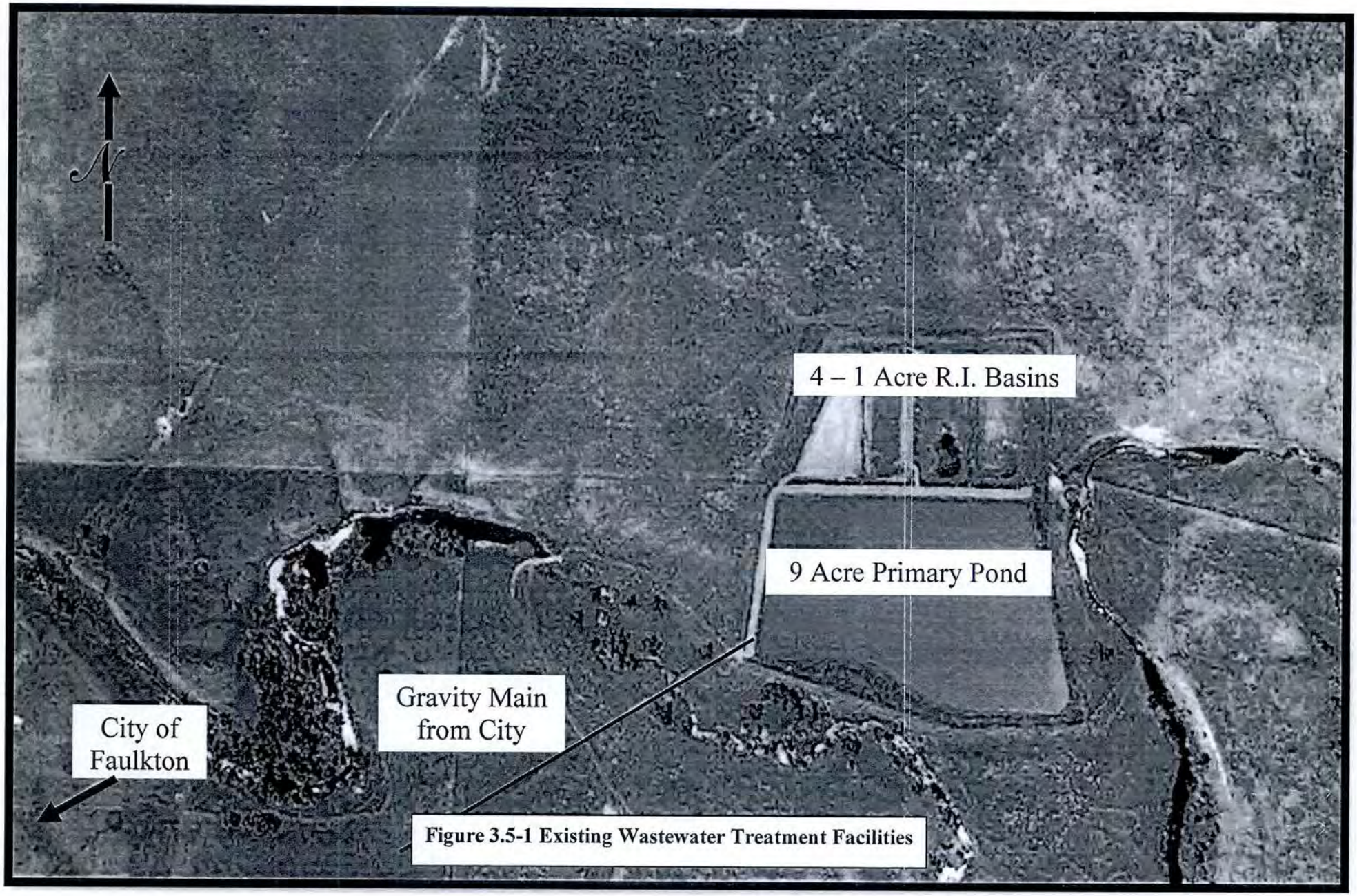


Figure 3.5-1 Existing Wastewater Treatment Facilities

3.5.1 Pond Organic Loading

Section B.1a of Chapter IV of the DENR Design Criteria Manual states that the maximum design loading on the primary cell shall be 30 pounds of Biochemical Oxygen Demand (BOD_5) per acre per day. On the basis of this criterion, the total organic loading on Faulkton's primary cell should not exceed 270 pounds. A typical BOD_5 rate is 0.17 pounds per person per day depending on the size of the community. The manual also states that the total organic loading for the total surface area shall not exceed 20 pounds of BOD_5 per acre per day which would allow a total loading of 80 pounds for Faulkton's system.

The historic, current and future loading to the primary pond is shown in the following table. The table shows that the size of the existing treatment system is adequate for the organic loading that the system is receiving.

Table 3.5.1-1 Pond Organic Loading

	Current 2010	**Future 2028**
Population	736	736
BOD_5 per Capita (lbs)	0.17	0.17
Total BOD_5 (lbs)	125.12	125.12
Maximum BOD_5 per Acre (lbs)	30	30
Area Required for Primary Cell (ac)	**4.2**	**4.2**
Maximum BOD_5 per Acre for Total System (lbs)	20	20
Area Required for Total System (ac)	**6.3**	**6.3**

The National Pollutant Discharge Elimination System Permit, which can be found in Appendix B, allows the City of Faulkton to discharge twice a year. The discharge effluent parameters set in the permit have been met in the past without issue.

3.5.2 Pond Hydraulic Capacity

The pond hydraulic capacity also needs to be evaluated. Table 3.5.2-1 shows the 180-day hydraulic loading of the treatment system with discharge to the South Fork Snake Creek. The current and future calculations are all shown. The calculations show that the system is extremely undersized for the current and future loading, which can be attributed to the excessive I&I and storm sewer connections. Assuming that the high flows are from March 15 through June 15 of each year, the total flow would be 512,050 gpd x 61 days = 31,235,064 gallons. If the average the remainder of the year is the average between the flow recorded on March 16 (298,381 gallons) and the average water usage recorded during the testing (70,070 gallons), we can then have an average flow for the remainder of the year. This would be approximately 184,226 gallons for the remaining 304 days of the year. The weighted average between the two periods is 239,013 gallons per day.

Table 3.5.2-1 Pond Hydraulic Loading

	Current 2010	**Future 2040**
Population	736	736
Wastewater Flow (gpcpd)	72	72
Domestic Wastewater Flow (gpd)	52,992	52,992
Infiltration & Inflow (gpd)	239,013	239,013
Design Storage Time (days)	180	180
Pond Influent (gal)	**52,560,911**	**52,560,911**
Pond Storage Capacity (gal)		
9 Acres x 5.0 feet x 43,560 x 7.48 =	14,662,296	14,662,296
4 Acres x 3.0 feet x 43,560 x 7.48 =	3,909,946	3,909,946
Existing Pond Storage	**18,572,242**	**18,572,242**
Remaining Storage Capacity (gal)	**-33,988,670**	**-33,988,670**
Additional Storage Required (ac)	**20.9**	**20.9**

3.6 FUTURE CONDITIONS

Information related to the project need and planning area is found in Section 2 of this report. Specific information on population projections is found in Section 2.2. Essentially, the population of Faulkton is expected to stabilize at the current population for the next 30 years.

Land use is not expected to change significantly in the immediate vicinity of the City. There is some land available for future development and based on the past growth of the community, it is viewed as sufficient to meet community needs.

Due to the importance of conserving water, money and energy, various means for reducing wastewater flows and water usage are recommended. Faucet aerators, reduced flush toilets and limited flow showerheads could all be installed reducing the amount of wastewater flow and water use. Sump pumps and drain tiles that empty into the sanitary sewer system should also be modified to discharge outside the sanitary sewer system. Taking these small measures could help to reduce the overall amount of wastewater being created along with reducing the amount of inflow into the system.

4 DEVELOPMENT AND EVALUATION OF ALTERNATIVES

The alternatives developed for the City of Faulkton were composed to demonstrate some options available to fix the identified deficiencies in the system. The current collection system consists of gravity flow pipes that transport sewage to the treatment system. No alternative collection systems were considered in this report. The City of Faulkton has no industries or federal facilities. Treatment of the types of wastes commonly generated by these types of facilities will not be considered.

4.1 CAUTIONARY NOTES CONCERNING COST ESTIMATES

The opinions of probable cost provided with the following alternatives reflect the anticipated costs for administration, engineering design, construction, contingencies, construction observation, and other costs related to completion of the project. The costs as presented are based on an analysis and comparison of projects of similar size and scope. The actual construction and project costs will vary on an individual project basis. The actual bid cost will reflect the bidder's evaluation of construction problems, weather, soils and difficulty of work. Thus, the engineer cannot be held responsible for the accuracy of the estimates made in this report, as the engineer has no control over the contractors' bid costs.

Changes in materials, equipment and energy costs, as well as availability of other construction work at the time of the bid opening, could substantially influence actual project cost. Construction costs will also vary somewhat based on the quantity of items necessary to construct the project. The quantities and costs contained in this report are preliminary estimates based on our best judgment without field measurements. Final quantities and opinions of probable cost and final construction costs must be based upon final design.

Different funding sources have different requirements for some non-construction items. Therefore, actual costs of non-construction items should be considered tentative at this time and subject to later modifications and adjustments as current situations and funding sources dictate. Further, inasmuch as the period of construction cannot be accurately predicted, the costs as presented in this report have not been adjusted to reflect projected inflation factors. Therefore, it

is important that the estimate of costs as presented be reviewed and updated periodically to reflect construction cost trends.

4.2 EQUIVALENT UNIFORM ANNUAL COST

The alternatives relating to Faulkton's wastewater system that were evaluated are described in the following sections. In addition to an opinion of cost for each alternative discussed in this section, a breakdown of the estimated equivalent uniform annual cost (EUAC) is also given. The EUAC not only takes the capital costs into account when evaluating the options but also looks at the salvage value of the components and the expected annual operation and maintenance costs. The result is a comparison of the alternatives on an overall basis throughout a design life of 30 years. As a result, the EUAC may show that the lowest capital cost alternative is not the lowest cost alternative. This situation would occur when options have a low capital cost but high operation and maintenance costs. The terms and values utilized in performing the EUAC are given in Table 4.2-1.

Table 4.2-1 Equivalent Uniform Annual Cost Terminology and Values Used

Term	Definition	Value Used
Interest = I	Annual interest rate	3.25%
Salvage Value = SV	Value of component at end of 20-year design life	0% or 60%
Present Worth = PW	Present worth (equal to opinion of cost for that item)	Variable
Net Present Worth of Salvage Value = PWSV	Present worth of salvage value	52.7%
Net Present Worth of Capital Costs = NPW	Present worth less the present worth of the salvage value	Variable
Net Present Worth of Annual Costs	Present worth of annual costs over the 20-year design life	1450%
Equivalent Uniform Annual Costs = EUAC	Annual cost of total present worth of capital and annual costs	6.88%
Design Life	Length of time facilities are projected to operate and/or meet design parameters	20 years

4.3 PROPOSED WASTEWATER COLLECTION SYSTEM IMPROVEMENTS

The operating characteristics and deficiencies of the wastewater collection system are discussed in detail in Section 3 of this report. The following is a summary of the deficiencies of Faulkton's wastewater collection system.

- Inflow and infiltration accounted for 88% of the total wastewater flow during the flow monitoring period. The EPA's upper limit was exceeded every day the domestic wastewater flow was measured.
- There are two septic tanks inside the City limits. One is servicing the airport and one services a house at the intersection of Elm and 14th.

The alternatives relating to the sanitary sewage collection system that were evaluated are described in the following sections.

4.3.1 Collection System Alternative 1: Do Nothing

The first wastewater collection system alternative that was considered is the "do nothing" alternative. This alternative will not address any of the deficiencies of the inflow/infiltration or items documented by the televising of the collection systems. If the collection system's structural stability is not addressed, the system will continue to deteriorate ultimately leading to catastrophic failure. As a result, Collection System Alternative 1 is not considered as an acceptable alternative.

4.3.2 Collection System Alternative 2: Inspection, Mapping, & Storm Sewer

The existing sewer maps for the City of Faulkton are very poor. Locations of sewer mains and sizes are based on limited information and recollection of the previous water & sewer superintendent. During discussions with the City, the highest priority was to accurately locate and map the sewer system. Location and possible identification of services is also desired. Service locations are basically non-existent except for areas previously televised.

Based on the information that was shown in Section 3 it has been concluded that a significant portion of the total wastewater flow can be attributed to infiltration and inflow. It is reported that twelve percent (12%) of the existing sewer lines have been televised. Refer to Figure 3.2-1 that

shows the extent of the system that has been cleaned and televised. The reports of the televising completed to date covering approximately twelve percent (12%) were made available and reviewed as part of this study. After reviewing the reports, there appears to be some significant issues with the structural integrity of the current piping system.

Collection System Alternative 2 will address this problem in two phases.

Phase 1 will include:

- Televise the remaining eighty-eight percent (88%) of the collection system,
- Accurately map the sewer system and update future cost estimates accordingly.

In order to adequately analyze the entire system the rest of the sewer lines need to be televised and surveyed to accurately map the system. Based on the age of the clay pipe and on reports the City has already gathered one can assume that the pipe is in need of repair, as has been experienced by other communities with similar systems. The televising reports will determine which portions of the collection system need to be replaced in order to reduce the infiltration and other identified problems. The approximate cost to clean and televise the remainder of the collection system and survey the system and update maps is estimated in Table 4.3.2-1.

Table 4.3.2-1 Opinion of Probable Costs for Alternative 2 - Phase 2 Construction

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$9,800.00	$9,800.00
2	Clean and Televise 10" Sanitary Sewermain	8,365	LF	$2.50	$20,912.50
3	Clean and Televise 8" Sanitary Sewermain	12,186	LF	$2.00	$24,372.00
4	Clean and Televise 6" Sanitary Sewermain	10,970	Each	$1.50	$16,455.00
5	Televise 4" Sanitary Services	33,750	Each	$1.50	$50,625.00
6	Traffic Control	1	LS	$10,000.00	$10,000.00
	Construction Subtotal				$132,164.50
	Contingencies (15%)				$20,000.00
	Construction Total				**$152,164.50**
	Design Engineering				$17,400.00
	Bidding and Contract Documents				$5,000.00
	Construction Engineering				$19,100.00
	Administration & Legal				$4,600.00
	Total Project Cost				**$198,264.50**

Phase 2 will include:

- Disconnecting storm sewer catch basins from sewer system,
- Assist the City in eliminating sump pumps that drain to the sanitary collection system.

Based on conversations with the wastewater superintendent, there are some homes with sump pumps that discharge to the sanitary collection system. The City needs to verify that all sump pumps are not discharging to the sanitary sewer.

Additionally it is very important to reduce the estimated inflow and infiltration to ensure that the existing treatment system can handle the hydraulic loading of the town. Based on the flow data collected by Helms there is potential risk of the ponds becoming over loaded. One of the major contributors to this problem is the storm sewer connections to the sanitary sewer. For this alternative it is recommended that the storm sewer be disconnected from the sanitary sewer to eliminate unnecessary loading of the treatment facilities. Smoke testing completed by the City of Faulkton and South Dakota Association of Rural Water Systems indentified seven catch basins connected to the sanitary sewer system. Once disconnect from the sanitary sewer system the existing storm sewer system needs to be surveyed to determine the best method to remove the surface water previously handled by the sanitary sewer system. It is expected that about half of the catch basins can be re-routed to the existing storm sewer infrastructure. The remaining catch basins would require curb and gutter and drainage ditches to direct surface runoff to the existing infrastructure.

The estimated construction cost to address this phase is shown in Table 4.3.2-2 and EUAC in Table 4.3.2-3 respectively.

Table 4.3.2-2 Opinion of Probable Costs for Collection System Alternative 2 - Phase 2 Construction

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$19,400.00	$19,400.00
2	Grading and Shaping	1	LS	$5,000.00	$5,000.00
3	Remove and Dispose of Existing Asphalt	2,500	SqYd	$3.00	$7,500.00
4	Remove and Dispose of Catch Basin	7	Each	$400.00	$2,800.00
5	Disconnect and Cap Existing Storm Sewer	7	Each	$400.00	$2,800.00
6	Storm Sewer Catch Basin	8	Each	$3,000.00	$24,000.00
7	Connect to Existing Storm Sewer	8	Each	$400.00	$3,200.00
8	15" Storm Sewer Pipe	1,500	LF	$35.00	$52,500.00
9	Asphalt Surfacing (4")	600.0	Ton	$150.00	$90,000.00
10	Concrete Sidewalk Repair	800	SqFt	$7.50	$6,000.00
11	Concrete Curb & Gutter Repair	160	Ft	$26.00	$4,160.00
12	Gravel Base Course (10")	1,500.0	Ton	$20.00	$30,000.00
13	Traffic Control	1	LS	$10,000.00	$10,000.00
14	Seed, Fertilize & Mulch	1.0	Acre	$3,500.00	$3,500.00
	Construction Subtotal				$260,860.00
	Contingencies (15%)				$40,000.00
	Construction Total				**$300,860.00**
	Design Engineering				$31,300.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$34,400.00
	Administration & Legal				$9,100.00
	Total Project Cost				**$383,160.00**

Table 4.3.2-3 EUAC for Collection System Alternative 2 - Phase 2 Construction

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$19,400.00	$0.00	$0.00	$19,400.00
Grading and Shaping	$5,000.00	$0.00	$0.00	$5,000.00
Remove and Dispose of Existing Asphalt	$7,500.00	$0.00	$0.00	$7,500.00
Remove and Dispose of Catch Basin	$2,800.00	$0.00	$0.00	$2,800.00
Disconnect and Cap Existing Storm Sewer	$2,800.00	$0.00	$0.00	$2,800.00
Storm Sewer Catch Basin	$24,000.00	$14,400.00	$7,595.59	$16,404.41
Connect to Existing Storm Sewer	$3,200.00	$0.00	$0.00	$3,200.00
15" Storm Sewer Pipe	$52,500.00	$31,500.00	$16,615.34	$35,884.66
Asphalt Surfacing (4")	$90,000.00	$54,000.00	$28,483.45	$61,516.55
Concrete Sidewalk Repair	$6,000.00	$3,600.00	$1,898.90	$4,101.10
Concrete Curb & Gutter Repair	$4,160.00	$2,496.00	$1,316.57	$2,843.43
Gravel Base Course (10")	$30,000.00	$18,000.00	$9,494.48	$20,505.52
Traffic Control	$10,000.00	$0.00	$0.00	$10,000.00
Seed, Fertilize & Mulch	$3,500.00	$0.00	$0.00	$3,500.00
Capital Costs	$122,300.00	$0.00	$0.00	$122,300.00
Total Construction Cost	$383,160.00	$123,996.00	$65,404.33	$317,755.67

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$317,755.67
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$325,025.35**
Equivalent Uniform Annual Cost	**$22,354.88**

4.3.3 Collection System Alternative 3: Replace Clay Pipe with PVC

Collection System Alternative 3 recommends replacing all of the clay sanitary sewer mains, manholes and service lines to the property lines. The evaluation of this alternative gives the City Council an estimated cost to replace the entire collection system in the event that the televising discovers it is necessary. There is also significant four and six inch piping used for sewer mains throughout the City. The SD-DENR in 'Recommended Design Criteria for Wastewater Collection and Treatment Facilities, Chapter 2, Section F, Part 1 recommend that eight inch sanitary sewers be the minimum pipe size. Therefore we recommended replacing all four inch

PVC and VCP and all six inch VCP sewer mains with eight inch PVC sewermain with this alternative. The amount of inflow and infiltration would be significantly reduced once the new PVC pipe is installed.

This alternative will also address the majority of the concerns voiced by the SD-DENR and the City of Faulkton. Below are two of the listed problems that will be addressed with this alternative. Two additional problems will be addressed under the treatment portions of this report.

- The sizing of the outfall pipe
- The outfall pipe is exposed over South Fork Snake Creek

The outfall pipe is currently 10 inch clay tile. Based on the flows recorded by Helms personnel the required pipe size to handle the estimated discharge is 12" PVC which has a discharge capacity of 1.51 cfs at minimum grade. The PVC has a lower coefficient of friction than clay pipe, which increases the flow velocity and discharge capacity of the pipe. With the reduction of the Inflow and Infiltration of 70% and using the estimated wastewater flow the hydraulic loading for the outfall pipe would require an 8 inch PVC pipe which has a capacity of 0.68 cfs, which meets the required discharge rate shown in table 4.4.3-1.

Table 4.4.3-1 Estimated Discharge Rate to Ponds

	Current	70% Reduction
Population	736	736
Wastewater Flow (gpcpd)	72	72
Domestic Wastewater Flow (gpd)	52,992	52,992
Peak Recorded Infiltration & Inflow (gpd)	845,179	253,554
Discharge Rate (cfs)	**1.390**	**0.474**

Since the outfall pipe is a significantly long run (~4,000 ft) issues of sewage backing up on the City side have been noted by City officials. However, with a reduction in the inflow, by removing the storm sewer, being the highest priority, the peak flows would easily be able to be carried by a 10 inch PVC pipe. Therefore, the rehabilitation/replacement of the 10" outfall line will reduce the potential problems with sewer backup within the City's collection system.

The exposed outfall pipe over the South Fork Snake Creek has produced issues in the past. Most recently on June 22, 2011 the pipe was broken and sewage discharged directly to the stream after a 5-inch precipitation event flash flooded the creek. We recommend that the City install an inverted siphon under South Fork Snake Creek to prevent the pipe from washing out in the future. A properly designed inverted siphon will operate nearly maintenance free. The pipes would be adequately sized to provide minimum flow velocities to keep the pipe clean. Manholes would be placed at either end to allow easy access for cleaning equipment should it be necessary. The piping would be placed with minimum 6 foot burial to insure the pipes will not freeze during low flow conditions.

The City should review its ordinances to see if homes inside the limits are required to connect to the collection system. Typically, homes within 400 feet of the sewer system are required to connect to the City's system. Each case should be evaluated on an individual basis. The airport's septic system is approximately 800 feet from a suitable connection to the existing sanitary sewer system. There have been no problems with the airport's existing system reported and the City will need to determine if pursuing this option is a priority. The other septic system in town located at Elm St and 14th Ave should be evaluated to determine feasibility to connect to the City's sanitary sewer system. This is not a priority to the City and correspondence between the homeowner and the City should take place to evaluate this option further.

The estimated construction costs and EUAC are provided in Tables 4.3.3-2 and 4.3.3-3.

Table 4.3.3-2 Opinion of Probable Cost for Collection System Alternative 3

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$428,200.00	$428,200.00
2	Remove and Dispose of Existing Asphalt	66,200	SqYd	$3.00	$198,600.00
3	Remove and Dispose of Existing Manhole	48	Each	$400.00	$19,200.00
4	10" SDR 35 PVC Sanitary Sewer Pipe	9,130	LF	$35.00	$319,550.00
5	8" SDR 35 PVC Sanitary Sewer Pipe	23,260	LF	$32.00	$744,320.00
6	12" PVC SDR 26 Casing Pipe	600	LF	$40.00	$24,000.00
7	Sanitary Sewer Manhole	89	Each	$3,500.00	$311,500.00
8	10" x 4" Sanitary Sewer Wye	100	Each	$250.00	$25,000.00
9	8" x 4" Sanitary Sewer Wye	350	Each	$200.00	$70,000.00
10	4" SDR 35 PVC Sanitary Sewer Service Pipe	22,500	LF	$21.00	$472,500.00
11	Connect to Existing Sewer Service & Cleanout	450	Each	$375.00	$168,750.00
12	Bypass Pumping	1	LS	$15,000.00	$15,000.00
13	Inverted Siphon Stream Crossing (Piping & Manholes)	1	LS	$15,000.00	$15,000.00
14	Asphalt Surfacing (4")	15,400.0	Ton	$130.00	$2,002,000.00
15	Concrete Sidewalk Repair	18,000	SqFt	$5.50	$99,000.00
16	Concrete Curb & Gutter Repair	2,250	Ft	$26.00	$58,500.00
17	Gravel Base Course (10")	38,200.0	Ton	$20.00	$764,000.00
18	Traffic Control	1	LS	$20,000.00	$20,000.00
19	Seed, Fertilize & Mulch	7.0	Acres	$3,500.00	$24,500.00
	Construction Subtotal				$5,779,620.00
	Contingencies (10%)				$578,000.00
	Construction Total				**$6,357,620.00**
	Design Engineering				$451,400.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$496,600.00
	Administration & Legal				$127,200.00
	Total Project Cost				**$7,440,320.00**

Table 4.3.3-3 EUAC for Collection System Alternative 3

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$428,200.00	$0.00	$0.00	$428,200.00
Remove and Dispose of Existing Asphalt	$198,600.00	$0.00	$0.00	$198,600.00
Remove and Dispose of Existing Manhole	$19,200.00	$0.00	$0.00	$19,200.00
10" SDR 35 PVC Sanitary Sewer Pipe	$319,550.00	$191,730.00	$101,132.06	$218,417.94
8" SDR 35 PVC Sanitary Sewer Pipe	$744,320.00	$446,592.00	$235,564.44	$508,755.56
12" PVC SDR 26 Casing Pipe	$24,000.00	$14,400.00	$7,595.59	$16,404.41
Sanitary Sewer Manhole	$311,500.00	$186,900.00	$98,584.38	$212,915.62
10" x 4" Sanitary Sewer Wye	$25,000.00	$15,000.00	$7,912.07	$17,087.93
8" x 4" Sanitary Sewer Wye	$70,000.00	$42,000.00	$22,153.79	$47,846.21
4" SDR 35 PVC Sanitary Sewer Service Pipe	$472,500.00	$283,500.00	$149,538.10	$322,961.90
Connect to Existing Sewer Service & Cleanout	$168,750.00	$0.00	$0.00	$168,750.00
Bypass Pumping	$15,000.00	$0.00	$0.00	$15,000.00
Inverted Siphon Stream Crossing (Piping & Manholes)	$15,000.00	$9,000.00	$4,747.24	$10,252.76
Asphalt Surfacing (4")	$2,002,000.00	$1,201,200.00	$633,598.47	$1,368,401.53
Concrete Sidewalk Repair	$99,000.00	$59,400.00	$31,331.79	$67,668.21
Concrete Curb & Gutter Repair	$58,500.00	$35,100.00	$18,514.24	$39,985.76
Gravel Base Course (10")	$764,000.00	$458,400.00	$241,792.82	$522,207.18
Traffic Control	$20,000.00	$0.00	$0.00	$20,000.00
Seed, Fertilize & Mulch	$24,500.00	$0.00	$0.00	$24,500.00
Capital Costs	$1,660,700.00	$0.00	$0.00	$1,660,700.00
Total Construction Cost	$7,440,320.00	$2,943,222.00	$1,552,464.99	$5,887,855.01

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$1,000.00	$14,539.35
Subtotal	$1,000.00	$14,539.35

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$5,887,855.01
NPW of O & M Costs	$14,539.35
Total Net Present Worth	**$5,902,394.36**
Equivalent Uniform Annual Cost	**$405,960.10**

4.3.4 Collection System Alternative 4: Replace Clay Pipe with CIPP

Collection System Alternative 4 considered the trenchless method of rehabilitating the sanitary sewer main and in turn saving the cost of rebuilding the street surface. Cast-in-place pipe (CIPP)

liner will not solve any of the problems with sags or poorly aligned pipe. These locations must be repaired with the "normal" method of using open trenches and necessary street repairs. CIPP also becomes less cost effective in locations with numerous service connections. Because the rehabilitation of this sewer system using CIPP alone will not solve all of the deficiencies, this alternative was not considered further and a cost estimate was not prepared.

4.3.5 Collection System Alternative 5: Replace Clay Pipe with Combination of CIPP and PVC

Alternate 5 will complete all the work outlined under Alternate 3, but will utilize trenchless methods of pipe and manhole rehabilitation to reduce costs. During the design phase of the project each part of the entire system would be analyzed and a determination made relative to which lines would best be suited to use the CIPP liner and where it would be best to replace the lines with significant sags or poor alignment with PVC pipe. Since there isn't a feasible way to predict the conditions of the sanitary sewer lines, it has been assumed that 30% of the system would be able to use the CIPP liner while 70% would need to be replaced with PVC. There is significant four and six inch piping used for sewer mains throughout the City. The SD-DENR in 'Recommended Design Criteria for Wastewater Collection and Treatment Facilities, Chapter 2, Section F, Part 1 recommend that eight inch sanitary sewers be the minimum pipe size. Therefore we recommended replacing all four inch PVC and VCP and all six inch VCP sewer mains with eight inch PVC and a 30/70 CIPP vs PVC rehabilitation/replacement of the existing eight and ten inch clay sewer pipes.

The cost estimate seen in the table on the next page will reflect these assumptions. Figure 4.3.5-1 shows the sanitary sewer to be replaced with Alternate 5. Table 4.3.5-1 and Table 4.3.5-2 provide the estimated construction costs and corresponding EUAC respectively.

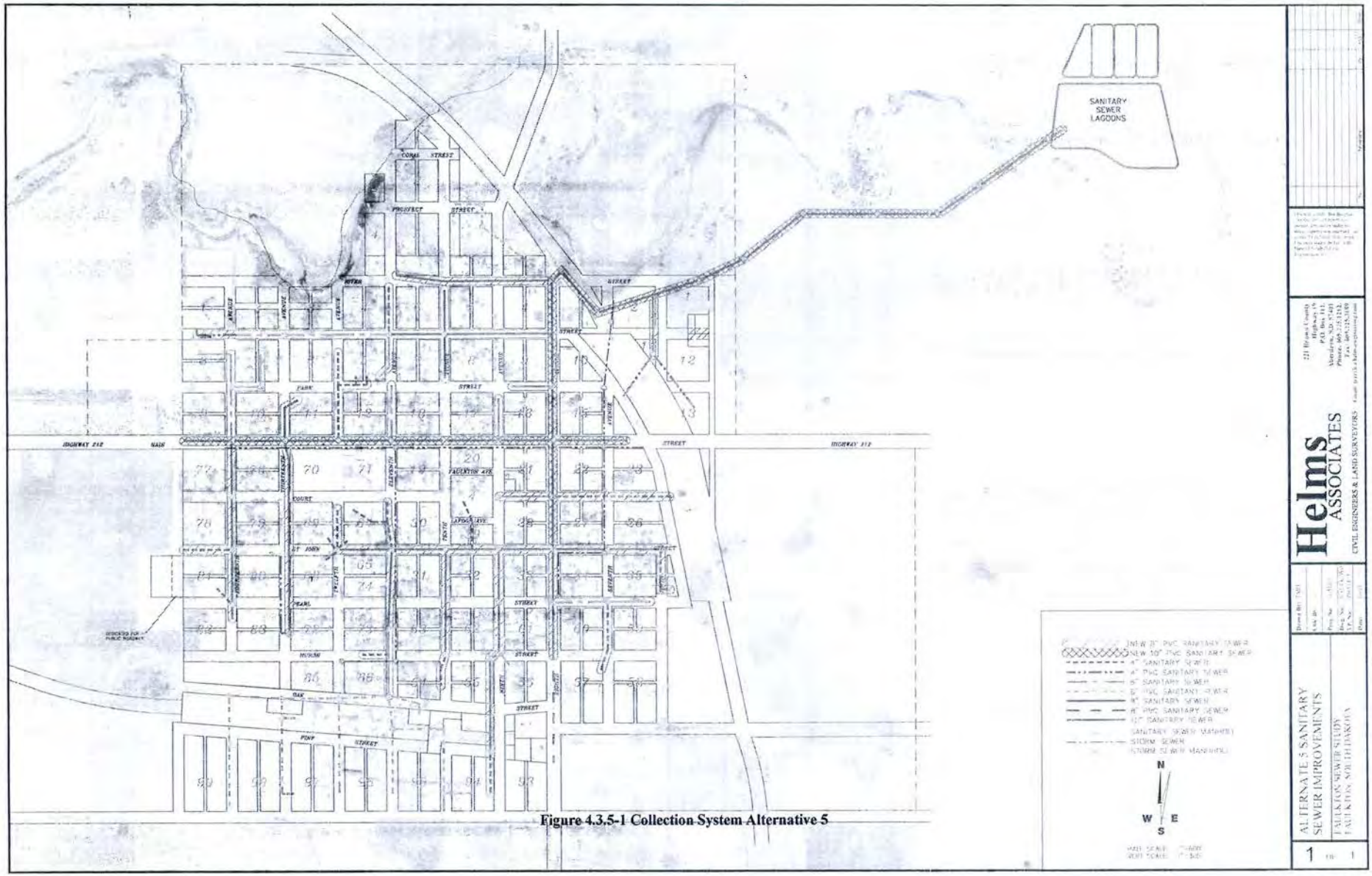


Figure 4.3.5-1 Collection System Alternative 5

Table 4.3.5-1 Opinion of Probable Cost for Collection System Alternative 5

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$357,500.00	$357,500.00
2	Remove and Dispose of Existing Asphalt	51,700	SqYd	$3.00	$155,100.00
3	Remove and Dispose of Existing Manhole	34	Each	$400.00	$13,600.00
4	Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	2,739	LF	$2.50	$6,847.50
5	Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	3,748	LF	$2.00	$7,496.00
6	10" Cured in Place Pipe Liner (CIPP Liner)	2,739	LF	$35.00	$95,865.00
7	8" Cured in Place Pipe Liner (CIPP Liner)	3,748	LF	$27.00	$101,196.00
8	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	300	Each	$150.00	$45,000.00
9	Sewer Service Tap Cut Out to Reinstate Service	135	Each	$250.00	$33,750.00
10	Post-Rehabilitation Televising of 10" Diameter Sewer	2,739	LF	$1.50	$4,108.50
11	Post-Rehabilitation Televising of 8" Diameter Sewer	3,748	LF	$1.50	$5,622.00
12	Manhole Interior Lining	140	VF	$250.00	$35,000.00
13	10" SDR 35 PVC Sanitary Sewer Pipe	6,391	LF	$35.00	$223,685.00
14	8" SDR 35 PVC Sanitary Sewer Pipe	19,512	LF	$32.00	$624,384.00
15	12" Casing pipe	420	LF	$40.00	$16,800.00
16	48" Sanitary Sewer Manhole	71	Each	$3,500.00	$248,500.00
17	10" x 4" Sanitary Sewer Wye	70	Each	$250.00	$17,500.00
18	8" x 4" Sanitary Sewer Wye	245	Each	$200.00	$49,000.00
19	4" SDR 35 Sanitary Sewer Pipe	15,750	LF	$21.00	$330,750.00
20	Connect to Existing Sewer Service & Cleanout	315	Each	$375.00	$118,125.00
21	Bypass Pumping	1	LS	$20,000.00	$20,000.00
22	Inverted Siphon Stream Crossing (Piping & Manholes)	1	LS	$15,000.00	$15,000.00
23	Asphalt Surfacing (4")	12,000.0	Ton	$130.00	$1,560,000.00
24	Concrete Sidewalk Repair	12,600	SqFt	$5.50	$69,300.00
25	Concrete Curb & Gutter Repair	1,575	Ft	$26.00	$40,950.00
26	Gravel Base Course (10")	29,700.0	Ton	$20.00	$594,000.00
27	Traffic Control	1	LS	$20,000.00	$20,000.00
28	Topsoil, Seed, Fertilize & Mulch	4.9	Acre	$3,500.00	$17,150.00
	Construction Subtotal				$4,826,229.00
	Contingencies (10%)				$483,000.00
	Construction Total				**$5,309,229.00**
	Design Engineering				$377,000.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$415,000.00
	Administration & Legal				$107,000.00
	Total Project Cost				**$6,215,729.00**

Table 4.3.5-2 EUAC for Collection System Alternative 5

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$357,500.00	$0.00	$0.00	$357,500.00
Remove and Dispose of Existing Asphalt	$155,100.00	$0.00	$0.00	$155,100.00
Remove and Dispose of Existing Manhole	$13,600.00	$0.00	$0.00	$13,600.00
Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	$6,847.50	$0.00	$0.00	$6,847.50
Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	$7,496.00	$0.00	$0.00	$7,496.00
10" Cured in Place Pipe Liner (CIPP Liner)	$95,865.00	$57,519.00	$30,339.62	$65,525.38
8" Cured in Place Pipe Liner (CIPP Liner)	$101,196.00	$60,717.60	$32,026.79	$69,169.21
Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	$45,000.00	$0.00	$0.00	$45,000.00
Sewer Service Tap Cut Out to Reinstate Service	$33,750.00	$0.00	$0.00	$33,750.00
Post-Rehabilitation Televising of 10" Diameter Sewer	$4,108.50	$0.00	$0.00	$4,108.50
Post-Rehabilitation Televising of 8" Diameter Sewer	$5,622.00	$0.00	$0.00	$5,622.00
Manhole Interior Lining	$35,000.00	$21,000.00	$11,076.90	$23,923.10
10" SDR 35 PVC Sanitary Sewer Pipe	$223,685.00	$134,211.00	$70,792.44	$152,892.56
8" SDR 35 PVC Sanitary Sewer Pipe	$624,384.00	$374,630.40	$197,606.77	$426,777.23
12" Casing pipe	$16,800.00	$10,080.00	$5,316.91	$11,483.09
48" Sanitary Sewer Manhole	$248,500.00	$149,100.00	$78,645.96	$169,854.04
10" x 4" Sanitary Sewer Wye	$17,500.00	$10,500.00	$5,538.45	$11,961.55
8" x 4" Sanitary Sewer Wye	$49,000.00	$29,400.00	$15,507.65	$33,492.35
4" SDR 35 Sanitary Sewer Pipe	$330,750.00	$198,450.00	$104,676.67	$226,073.33
Connect to Existing Sewer Service & Cleanout	$118,125.00	$0.00	$0.00	$118,125.00
Bypass Pumping	$20,000.00	$0.00	$0.00	$20,000.00
Inverted Siphon Stream Crossing (Piping & Manholes)	$15,000.00	$9,000.00	$4,747.24	$10,252.76
Asphalt Surfacing (4")	$1,560,000.00	$936,000.00	$493,713.09	$1,066,286.91
Concrete Sidewalk Repair	$69,300.00	$41,580.00	$21,932.25	$47,367.75
Concrete Curb & Gutter Repair	$40,950.00	$24,570.00	$12,959.97	$27,990.03
Gravel Base Course (10")	$594,000.00	$356,400.00	$187,990.75	$406,009.25
Traffic Control	$20,000.00	$0.00	$0.00	$20,000.00
Topsoil, Seed, Fertilize & Mulch	$17,150.00	$0.00	$0.00	$17,150.00
Capital Costs	$1,389,500.00	$0.00	$0.00	$1,389,500.00
Total Construction Cost	$6,215,729.00	$2,413,158.00	$1,272,871.47	$4,942,857.53

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$1,000.00	$14,539.35
Subtotal	$1,000.00	$14,539.35

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$4,942,857.53
NPW of O & M Costs	$14,539.35
Total Net Present Worth	**$4,957,396.88**
Equivalent Uniform Annual Cost	**$340,964.22**

4.3.6 Collection System Alternative 6: Replace Clay Pipe with Combination of CIPP and PVC in Two Phases

This alternative would phase the televising, replacement, and lining of the sanitary sewer based on priority established by the City and Helms. After discussions with city officials we have identified priority work to be done in two phases.

- Phase I Storm Sewer Inflow, 10" Sewer Main (in City), 8" Sewer Main, Inverted Siphon under South Fork Snake Creek
- Phase II 10" Outfall Line, Replace all 4" and 6" Sewermain with 8 inch PVC, Evaluate Septic Tank

As discussed in Section 3.5 the wastewater treatment ponds are significantly undersized based on the flow readings recorded. Phase I construction will correct the problem at the lagoon by reducing the amount of inflow and infiltration. By eliminating the storm sewer connections to the sanitary sewer the inflow will be significantly lowered. The second part of this phase would be to evaluate the existing 10" and 8" sanitary sewer lines and replace existing clay tile with PVC where structural damage is severe and line existing clay tile where needed. This step will also help reduce the infiltration. The proposed replacement and reconstruction is shown in Figure 4.3.6-1. The estimated cost for the construction of this Phase and EUAC are shown in Tables 4.3.6-1 and 4.3.6-2 respectively.

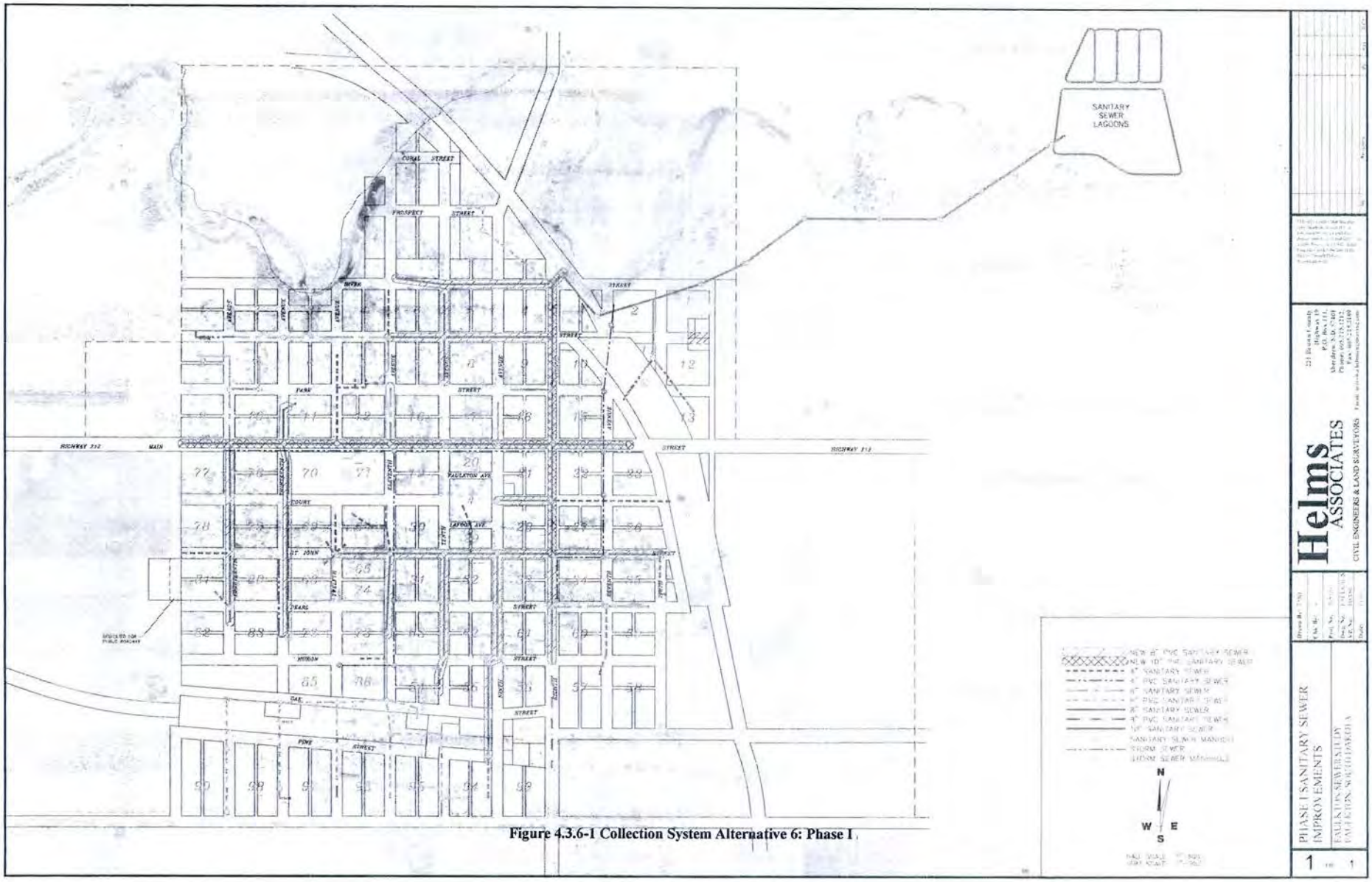


Figure 4.3.6-1 Collection System Alternative 6: Phase I

Table 4.3.6-1 Collection System Alternative 6: Estimated Construction Cost Phase I

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$203,700.00	$203,700.00
2	Remove and Dispose of Existing Asphalt	28,900	SqYd	$3.00	$86,700.00
3	Remove and Dispose of Existing Manhole	30	Each	$400.00	$12,000.00
4	Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	1,551	LF	$2.50	$3,877.50
5	Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	3,748	LF	$2.00	$7,496.00
6	10" Cured in Place Pipe Liner (CIPP Liner)	1,551	LF	$35.00	$54,285.00
7	8" Cured in Place Pipe Liner (CIPP Liner)	3,748	LF	$27.00	$101,196.00
8	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	250	Each	$150.00	$37,500.00
9	Sewer Service Tap Cut Out to Reinstate Service	110	Each	$250.00	$27,500.00
10	Post-Rehabilitation Televising of 10" Diameter Sewer	1,551	LF	$1.50	$2,326.50
11	Post-Rehabilitation Televising of 8" Diameter Sewer	3,748	LF	$1.50	$5,622.00
12	Manhole Interior Lining	100	VF	$250.00	$25,000.00
13	10" SDR 35 PVC Sanitary Sewer Pipe	3,619	LF	$35.00	$126,665.00
14	8" SDR 35 PVC Sanitary Sewer Pipe	8,747	LF	$32.00	$279,904.00
15	12" Casing pipe	220	LF	$40.00	$8,800.00
16	Sanitary Sewer Manhole	34	Each	$3,500.00	$119,000.00
17	10" x 4" Sanitary Sewer Wye	70	Each	$250.00	$17,500.00
18	8" x 4" Sanitary Sewer Wye	130	Each	$200.00	$26,000.00
19	4" SDR 35 Sanitary Sewer Pipe	10,000	LF	$21.00	$210,000.00
20	Connect to Existing Sewer Service & Cleanout	200	Each	$375.00	$75,000.00
21	Bypass Pumping	1	LS	$10,000.00	$10,000.00
22	Inverted Siphon Stream Crossing (Piping & Manholes)	1	LS	$15,000.00	$15,000.00
23	Asphalt Surfacing (4")	6,700.0	Ton	$130.00	$871,000.00
24	Concrete Sidewalk Repair	8,000	SqFt	$5.50	$44,000.00
25	Concrete Curb & Gutter Repair	1,000	Ft	$26.00	$26,000.00
26	Gravel Base Course (10")	16,500.0	Ton	$20.00	$330,000.00
27	Traffic Control	1	LS	$15,000.00	$15,000.00
28	Topsoil, Seed, Fertilize & Mulch	2.3	Acres	$3,500.00	$8,050.00
	Construction Subtotal				$2,749,122.00
	Contingencies (10%)				$275,000.00
	Construction Total				**$3,024,122.00**
	Design Engineering				$232,900.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$256,200.00
	Administration & Legal				$61,000.00
	Total Project Cost				**$3,581,722.00**

Table 4.3.6-2 Collection System Alternative 6: EUAC Phase I

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$203,700.00	$0.00	$0.00	$203,700.00
Remove and Dispose of Existing Asphalt	$86,700.00	$0.00	$0.00	$86,700.00
Remove and Dispose of Existing Manhole	$12,000.00	$0.00	$0.00	$12,000.00
Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	$3,877.50	$0.00	$0.00	$3,877.50
Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	$7,496.00	$0.00	$0.00	$7,496.00
10" Cured in Place Pipe Liner (CIPP Liner)	$54,285.00	$32,571.00	$17,180.27	$37,104.73
8" Cured in Place Pipe Liner (CIPP Liner)	$101,196.00	$60,717.60	$32,026.79	$69,169.21
Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	$37,500.00	$0.00	$0.00	$37,500.00
Sewer Service Tap Cut Out to Reinstate Service	$27,500.00	$16,500.00	$8,703.28	$18,796.72
Post-Rehabilitation Televising of 10" Diameter Sewer	$2,326.50	$0.00	$0.00	$2,326.50
Post-Rehabilitation Televising of 8" Diameter Sewer	$5,622.00	$0.00	$0.00	$5,622.00
Manhole Interior Lining	$25,000.00	$15,000.00	$7,912.07	$17,087.93
10" SDR 35 PVC Sanitary Sewer Pipe	$126,665.00	$75,999.00	$40,087.29	$86,577.71
8" SDR 35 PVC Sanitary Sewer Pipe	$279,904.00	$167,942.40	$88,584.79	$191,319.21
12" Casing pipe	$8,800.00	$5,280.00	$2,785.05	$6,014.95
Sanitary Sewer Manhole	$119,000.00	$71,400.00	$37,661.45	$81,338.55
10" x 4" Sanitary Sewer Wye	$17,500.00	$10,500.00	$5,538.45	$11,961.55
8" x 4" Sanitary Sewer Wye	$26,000.00	$15,600.00	$8,228.55	$17,771.45
4" SDR 35 Sanitary Sewer Pipe	$210,000.00	$126,000.00	$66,461.38	$143,538.62
Connect to Existing Sewer Service & Cleanout	$75,000.00	$0.00	$0.00	$75,000.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Inverted Siphon Stream Crossing (Piping & Manholes)	$15,000.00	$9,000.00	$4,747.24	$10,252.76
Asphalt Surfacing (4")	$871,000.00	$522,600.00	$275,656.48	$595,343.52
Concrete Sidewalk Repair	$44,000.00	$26,400.00	$13,925.24	$30,074.76
Concrete Curb & Gutter Repair	$26,000.00	$15,600.00	$8,228.55	$17,771.45
Gravel Base Course (10")	$330,000.00	$198,000.00	$104,439.31	$225,560.69
Traffic Control	$15,000.00	$0.00	$0.00	$15,000.00
Topsoil, Seed, Fertilize & Mulch	$8,050.00	$0.00	$0.00	$8,050.00
Capital Costs	$832,600.00	$0.00	$0.00	$832,600.00
Total Construction Cost	$3,581,722.00	$1,369,110.00	$722,166.16	$2,859,555.84

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$2,859,555.84
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$2,866,825.51**
Equivalent Uniform Annual Cost	**$197,177.06**

Phase II would be replacing all the existing 4" PVC, 4" VCP, and 6" VCP sewer main with 8" PVC. The SD DENR Recommended Design Criteria Manual recommends no gravity sewer main under the size of 8". This phase of the work will include the televising and rehabilitation/replacement of the 10" sanitary sewer outfall line to the wastewater holding ponds. The proposed work for phase II is shown in figure 4.3.6-2. The estimated cost of construction for Phase II is shown in table 4.3.6-3 and the EUAC is shown in table 4.3.6-4

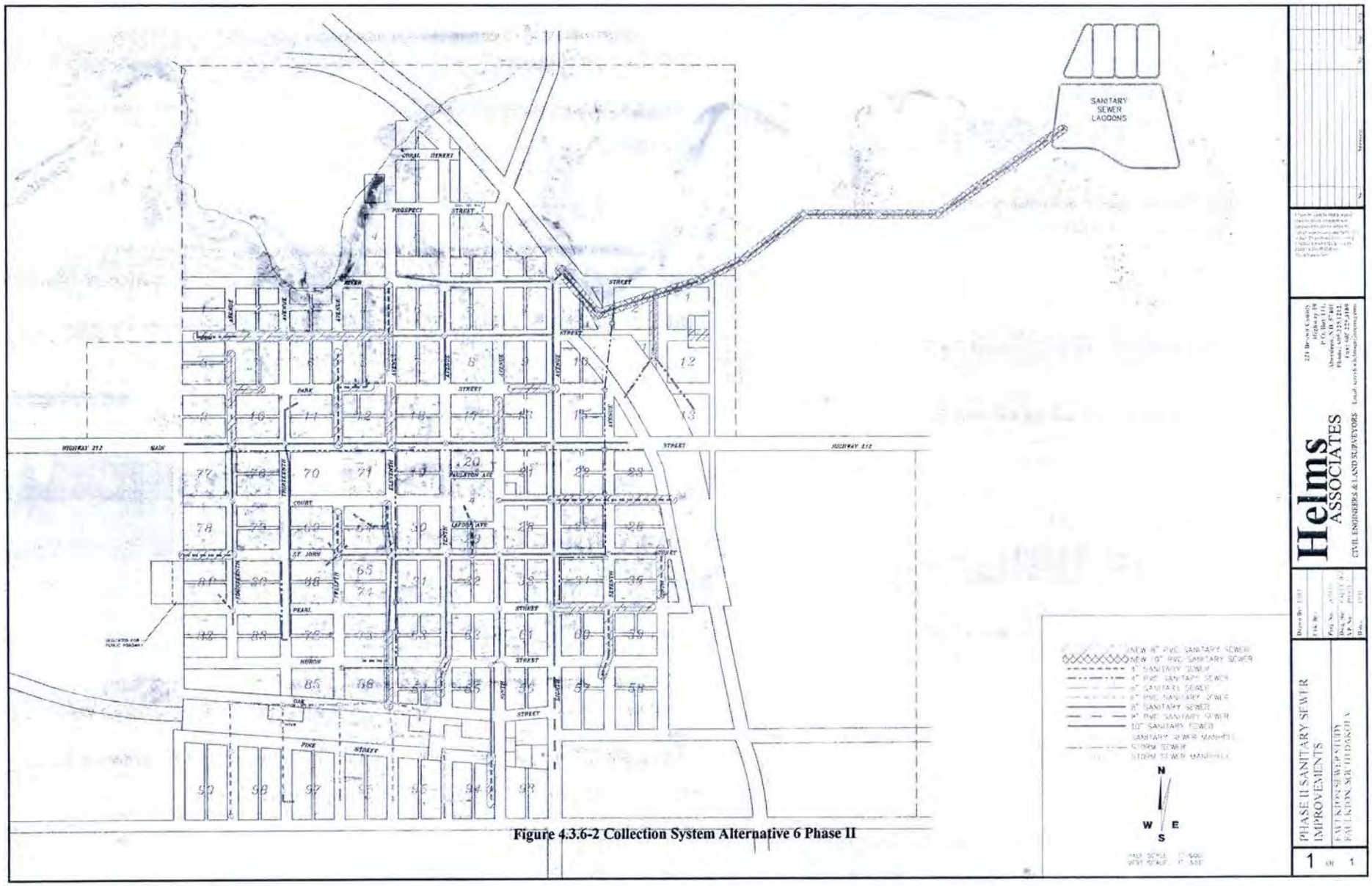


Figure 4.3.6-2 Collection System Alternative 6 Phase II

Table 4.3.6-3 Collection System Alternative 6: Estimated Construction Cost Phase II

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$153,200.00	$153,200.00
2	Remove and Dispose of Existing Asphalt	22,700	SqYd	$3.00	$68,100.00
3	Remove and Dispose of Existing Manhole	4	Each	$400.00	$1,600.00
4	Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer (Outfall Line)	1,188	LF	$2.50	$2,970.00
5	10" Cured in Place Pipe Liner (CIPP Liner)	1,188	LF	$35.00	$41,580.00
6	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	50	Each	$150.00	$7,500.00
7	Sewer Service Tap Cut Out to Reinstate Service	25	Each	$250.00	$6,250.00
8	Post-Rehabilitation Televising of 10" Diameter Sewer	1,188	LF	$1.50	$1,782.00
9	Manhole Interior Lining	40	VF	$250.00	$10,000.00
10	10" SDR 35 PVC Sanitary Sewer Pipe	2,772	LF	$35.00	$97,020.00
11	8" SDR 35 PVC Sanitary Sewer Pipe	10,765	LF	$32.00	$344,480.00
12	12" Casing pipe	200	LF	$40.00	$8,000.00
13	Sanitary Sewer Manhole	37	Each	$3,500.00	$129,500.00
14	8" x 4" Sanitary Sewer Wye	115	Each	$200.00	$23,000.00
15	4" SDR 35 Sanitary Sewer Pipe	5,750	LF	$21.00	$120,750.00
16	Connect to Existing Sewer Service & Cleanout	115	Each	$375.00	$43,125.00
17	Bypass Pumping	1	LS	$7,500.00	$7,500.00
18	Asphalt Surfacing (4")	5,300.0	Ton	$130.00	$689,000.00
19	Concrete Sidewalk Repair	4,600	SqFt	$5.50	$25,300.00
20	Concrete Curb & Gutter Repair	575	Ft	$26.00	$14,950.00
21	Gravel Base Course (10")	12,900.0	Ton	$20.00	$258,000.00
22	Traffic Control	1	LS	$5,000.00	$5,000.00
23	Topsoil, Seed, Fertilize & Mulch	2.6	Acres	$3,500.00	$9,100.00
	Subtotal				$2,067,707.00
	Contingencies (10%)				$207,000.00
	Construction Total				**$2,274,707.00**
	Design Engineering				$182,000.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$201,000.00
	Administration & Legal				$46,000.00
	Total Project Cost				**$2,711,207.00**

Table 4.3.6-4 Collection System Alternative 6: EUAC Phase II

Item	Cost	SV	PW SV	NPW
Mobilization	$153,200.00	$0.00	$0.00	$153,200.00
Remove and Dispose of Existing Asphalt	$68,100.00	$0.00	$0.00	$68,100.00
Remove and Dispose of Existing Manhole	$1,600.00	$0.00	$0.00	$1,600.00
Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer (Outfall Line)	$2,970.00	$0.00	$0.00	$2,970.00
10" Cured in Place Pipe Liner (CIPP Liner)	$41,580.00	$24,948.00	$13,159.35	$28,420.65
Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	$7,500.00	$0.00	$0.00	$7,500.00
Sewer Service Tap Cut Out to Reinstate Service	$6,250.00	$3,750.00	$1,978.02	$4,271.98
Post-Rehabilitation Televising of 10" Diameter Sewer	$1,782.00	$0.00	$0.00	$1,782.00
Manhole Interior Lining	$10,000.00	$6,000.00	$3,164.83	$6,835.17
10" SDR 35 PVC Sanitary Sewer Pipe	$97,020.00	$58,212.00	$30,705.16	$66,314.84
8" SDR 35 PVC Sanitary Sewer Pipe	$344,480.00	$206,688.00	$109,021.98	$235,458.02
12" Casing pipe	$8,000.00	$4,800.00	$2,531.86	$5,468.14
Sanitary Sewer Manhole	$129,500.00	$77,700.00	$40,984.52	$88,515.48
8" x 4" Sanitary Sewer Wye	$23,000.00	$13,800.00	$7,279.10	$15,720.90
4" SDR 35 Sanitary Sewer Pipe	$120,750.00	$72,450.00	$38,215.29	$82,534.71
Connect to Existing Sewer Service & Cleanout	$43,125.00	$0.00	$0.00	$43,125.00
Bypass Pumping	$7,500.00	$0.00	$0.00	$7,500.00
Asphalt Surfacing (4")	$689,000.00	$413,400.00	$218,056.61	$470,943.39
Concrete Sidewalk Repair	$25,300.00	$15,180.00	$8,007.01	$17,292.99
Concrete Curb & Gutter Repair	$14,950.00	$8,970.00	$4,731.42	$10,218.58
Gravel Base Course (10")	$258,000.00	$154,800.00	$81,652.55	$176,347.45
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Topsoil, Seed, Fertilize & Mulch	$9,100.00	$0.00	$0.00	$9,100.00
Capital Costs	$643,500.00	$0.00	$0.00	$643,500.00
Total Construction Cost	$2,711,207.00	$1,060,698.00	$559,487.70	$2,151,719.30

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$2,151,719.30
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$2,158,988.97**
Equivalent Uniform Annual Cost	**$148,492.85**

4.4 PROPOSED WASTEWATER SYSTEM IMPROVEMENTS

The negative characteristics of Faulkton's wastewater treatment system are summarized below.

- The outfall pipe is undersized
- The outfall pipe is exposed over South Fork Snake Creek
- Sludge build up in the primary pond
- Access road to the treatment facilities is not legally available as an access road.

4.4.1 Treatment System Alternative 1: Do Nothing

The first alternative is to do nothing. Treatment System Alternative 1 is not considered acceptable because it will not address the negative characteristics that are listed above. Therefore, Treatment System Alternative 1 is not considered as an acceptable alternative.

4.4.2 Treatment System Alternative 2: 180 Days of Storage w/ 70% I&I Reduction

The second treatment alternative is to add storage capacity to provide enough space to hold the wastewater accumulated from the collection system for 180 days with the reduction of I&I. The sizing of the treatment system is based on the assumption that I&I can be reduced. Without any I&I reduction and a sustained I&I as recorded the system would require 21 acres to be added to the system. 21 acres of land isn't feasible to add onto the system so Helms is proposing to reduce the amount of I&I by 70%. This reduction can be achieved by utilizing the collection alternatives provided in the previous sections. The reduction of I&I would reduce the amount of additional storage required to 2.4 acres. The hydraulic loading for this alternative is shown in Table 4.4.2-1. The minimum primary cell size provided in Part 3 is 4.2 acres, so this would need to be constructed as a secondary pond. To construct the pond, a lift station would almost certainly be required to pump water from the primary cell to the secondary cell.

Based on discharge reports submitted by the City of Faulkton, the City averages one discharge a year without having problems in meeting the discharge requirements. Based on correspondence with the City they have not stated problems with the hydraulic capacity of the current ponds. Comparing the recorded flow data and the storage capacity of the existing ponds there are

suspicions of pond leakage exceeding the limits set by the EPA and SD DENR. No leaks have been noted by the City of Faulkton or by the SD DENR during their inspection.

Table 4.4.2-1 Proposed Hydraulic Loading for 180-Day Storage

	Future 2028
Population	736
Wastewater Flow (gpcpd)	72
Domestic Wastewater Flow (gpd)	52,992
Infiltration & Inflow (gpd) (70% Reduction)	71,704
Design Storage Time (days)	180
Pond Influent (gal)	**22,445,265**
Pond Storage Capacity (gal)	
9 Acres x 5.0 feet x 43,560 x 7.48 =	14,662,296
4 Acres x 3.0 feet x 43,560 x 7.48 =	3,909,946
Existing Pond Storage	**18,572,242**
Remaining Storage Capacity (gal)	**-3,873,024**
Additional Storage Required (ac)	**2.4**

The proposed location for the expansion is shown in Figure 4.4.2-1. The estimated cost and EUAC for Treatment System Alternative 2 are shown in the following tables.

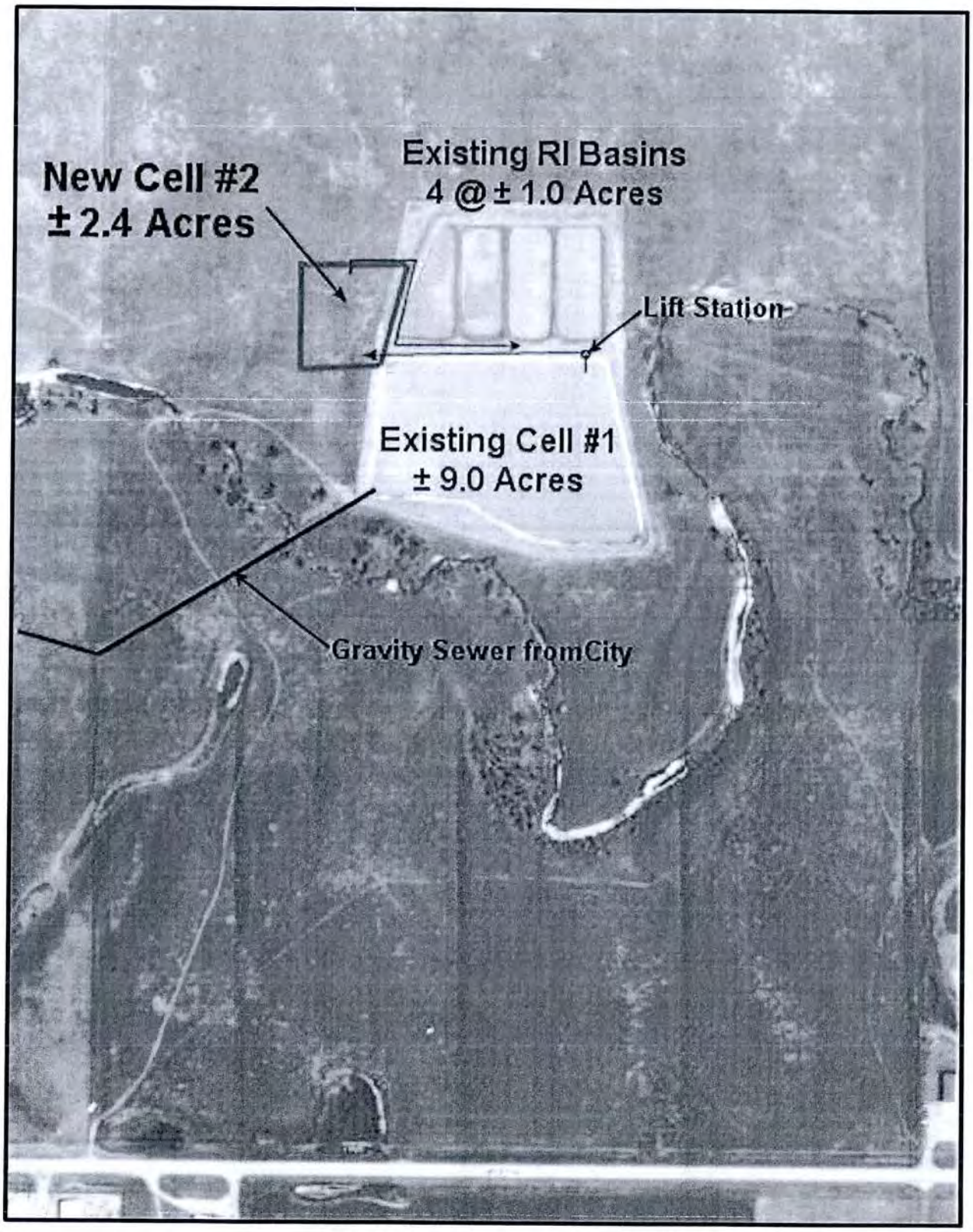


Figure 4.4.2-1 Treatment System Alternative 2

Table 4.4.2-2 Opinion of Probable Cost for Treatment System Alternative 2

Item	Description	Quantity		Unit Cost	Total Cost
1	Mobilization	1	LS	$31,100.00	$31,100.00
2	Unclassiffied Excavation	24,200	CuYd	$3.50	$84,700.00
3	Remove and Stockpile and Re-install Topsoil	3,300	CuYd	$2.00	$6,600.00
4	Clay Liner	7,000	CuYd	$3.50	$24,500.00
5	Pond Inlet Structure	2	Each	$3,000.00	$6,000.00
6	Pond Outlet Structure	1	Each	$3,500.00	$3,500.00
7	Pond Inlet Manhole	1	Each	$3,500.00	$3,500.00
8	Interpond Control Manhole	1	Each	$5,000.00	$5,000.00
9	Lift Station	1	LS	$150,000.00	$150,000.00
10	4" Force Main	1,000	LF	$20.00	$20,000.00
11	Gravel Surfacing	550.0	Tons	$20.00	$11,000.00
12	Riprap	670.0	Tons	$45.00	$30,150.00
13	Filter Fabric	1,400	SqYd	$3.00	$4,200.00
14	10" Ductile Iron Pipe	120	LF	$50.00	$6,000.00
15	10" Gate Valve	1	Each	$2,500.00	$2,500.00
16	Silt Fence	500	LF	$2.50	$1,250.00
17	Fencing	1,700	LF	$4.00	$6,800.00
18	Pond Pre-Fill	1	LS	$5,000.00	$5,000.00
19	Seeding, Mulching, and Fertilizer	3.0	Acres	$2,500.00	$7,500.00
20	Bypass Pumping	1	LS	$10,000.00	$10,000.00
	Construction Subtotal				$419,300.00
	Contingencies (15%)				$62,900.00
	Construction Total				**$482,200.00**
	Land Purchase (5 acres)				$15,000.00
	Design Engineering				$47,300.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$52,030.00
	Administration & Legal				$14,500.00
	Total Project Cost				**$618,530.00**

Table 4.4.2-3 EUAC for Treatment System Alternative 2

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$31,100.00	$0.00	$0.00	$31,100.00
Unclassiffied Excavation	$84,700.00	$0.00	$0.00	$84,700.00
Remove and Stockpile and Re-install Topsoil	$6,600.00	$0.00	$0.00	$6,600.00
Clay Liner	$24,500.00	$0.00	$0.00	$24,500.00
Pond Inlet Structure	$6,000.00	$3,600.00	$1,898.90	$4,101.10
Pond Outlet Structure	$3,500.00	$2,100.00	$1,107.69	$2,392.31
Pond Inlet Manhole	$3,500.00	$2,100.00	$1,107.69	$2,392.31
Interpond Control Manhole	$5,000.00	$3,000.00	$1,582.41	$3,417.59
Lift Station	$150,000.00	$90,000.00	$47,472.41	$102,527.59
4" Force Main	$20,000.00	$12,000.00	$6,329.66	$13,670.34
Gravel Surfacing	$11,000.00	$0.00	$0.00	$11,000.00
Riprap	$30,150.00	$0.00	$0.00	$30,150.00
Filter Fabric	$4,200.00	$0.00	$0.00	$4,200.00
10" Ductile Iron Pipe	$6,000.00	$3,600.00	$1,898.90	$4,101.10
10" Gate Valve	$2,500.00	$1,500.00	$791.21	$1,708.79
Silt Fence	$1,250.00	$0.00	$0.00	$1,250.00
Fencing	$6,800.00	$0.00	$0.00	$6,800.00
Pond Pre-Fill	$5,000.00	$0.00	$0.00	$5,000.00
Seeding, Mulching, and Fertilizer	$7,500.00	$0.00	$0.00	$7,500.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Capital Costs	$199,230.00	$0.00	$0.00	$199,230.00
Total Construction Cost	$618,530.00	$117,900.00	$62,188.86	$556,341.14

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$2,000.00	$29,078.69
Subtotal	$2,000.00	$29,078.69

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$556,341.14
NPW of O & M Costs	$29,078.69
Total Net Present Worth	**$585,419.83**
Equivalent Uniform Annual Cost	**$40,264.52**

4.4.3 Treatment System Alternative 3: Miscellaneous Improvements and Monitoring

The third treatment alternative is to address the last two concerns voiced by the SD-DENR and the City of Faulkton. Below are the two concerns that will be addressed with this alternative.

- Sludge build up in the primary pond
- Access road not owned or under easement by the City and in poor condition

Sludge build up can be a significant problem in pond system treatment facilities. The sludge build up can reduce the organic and hydraulic capacity of the ponds. Typically sludge build up occurs when a pond system is not operating properly when there is not enough treatment of the wastewater before discharge or chemicals enter the treatment system that kill off the bacteria that breakdown the BOD in the wastewater. There are a few options to take care of the issue. The cheapest option is to get the wastewater treatment system operating properly based on organic and hydraulic loading and the sludge should break down on its own. The City should also look into all industrial and commercial contributors to the wastewater collection system to ensure that certain fluids are not being discharged to the system unauthorized. Another option is the removal and disposal of the sludge. This option can be expensive due to the permitting and environmental concerns in disposing of the sludge. The third option is to inject enzymes into the pond to help break down the sludge naturally. This option is less expensive than removal and disposing of the sludge.

The access road to the ponds from US Hwy 12 is not currently owned or under easement by the City of Faulkton. To ensure the City has the ability to access their ponds we recommend talking with the current land owner(s) and obtaining an easement. We also recommend that the access road be constructed as near the quarter line as possible. Since we will have an easement for the sanitary sewer from the ¼ line to the pond, it only makes sense to follow the easement with the road. This provides a better basis for easements if the land is sold in the future and there are separate landowners. Also the current road is in poor condition at this time and meanders through the pasture. The City Superintendent has noted that the existing road has washed out three out of the last four years during spring runoff. Each year the City needs to use funds from their limited budget to rebuild this road. Using Manning's Formula we have estimated the flow to be over 280 cfs during the spring months. We recommend installing concrete box culverts

which would allow the stream to maintain its natural flow and yet accommodate spring runoff and heavy rains. Included in the installation of the box culvert we recommend building the access road up around the creek to ensure it is not flooded if the stream should exceed the estimated flow rate. Additionally rip rap is needed where erosion may occur especially along the road.

The area looked at for improvement is shown in figure 4.4.3-1. The estimated construction cost for this alternative is shown in table 4.4.3-1 and the corresponding EUAC is shown in table 4.4.3-2.

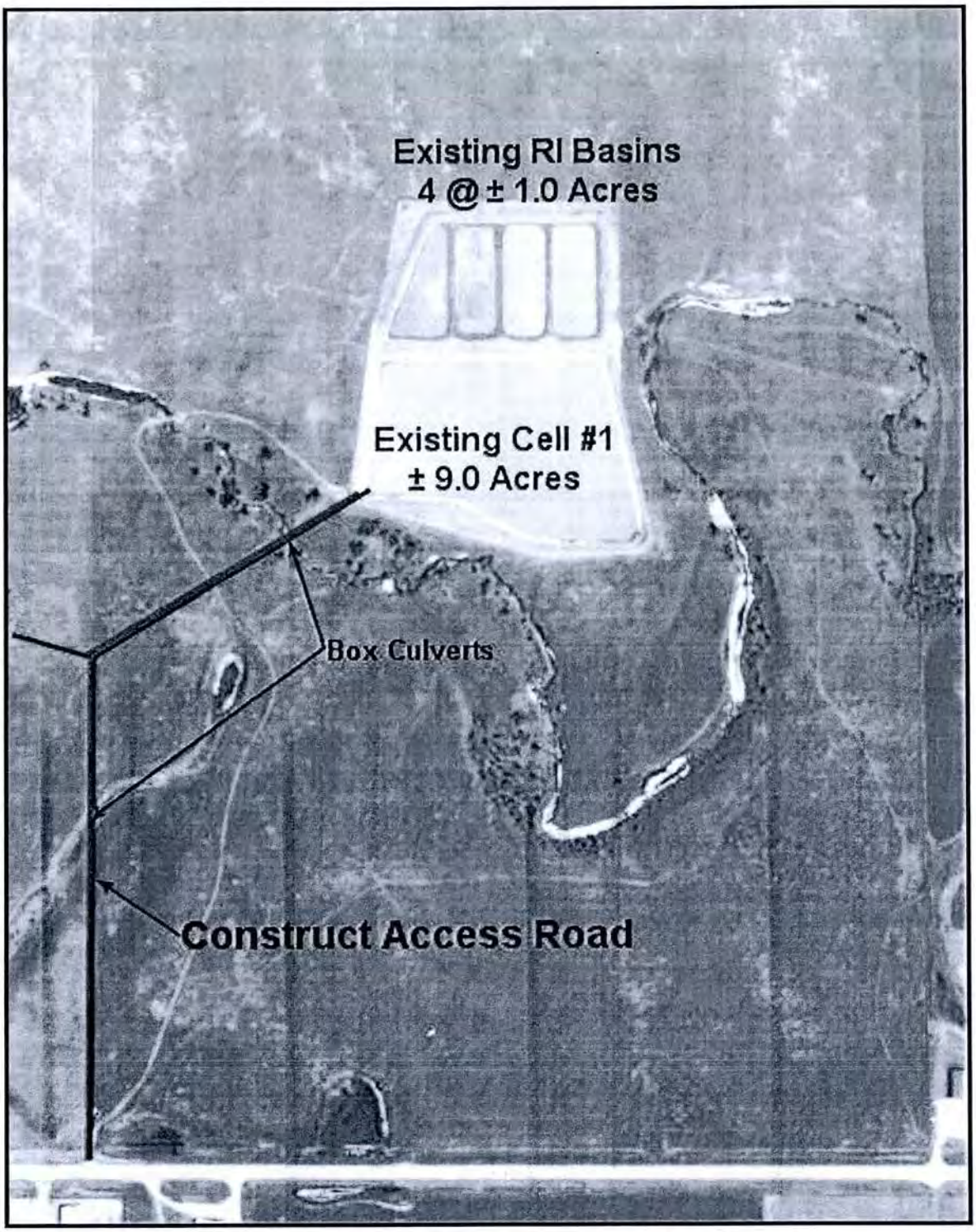


Figure 4.4.3-1 Wastewater Treatment Alternative 3: Location Map

Table 4.4.3-1 Wastewater Treatment Alternative 3: Estimated Construction Cost

Item	Description	Quantity		Unit Cost	Total Cost
1	Mobilization	1	LS	$15,100.00	$15,100.00
2	Wastewater Enzyme Application	100	Lbs	$75.00	$7,500.00
3	Unclassified Excavation/Roadway Grading	6,000	CuYd	$4.00	$24,000.00
4	Concrete Box Culvert (Access Road)	48	LF	$1,250.00	$60,000.00
5	Concrete Box Culvert Sloped Ends (Access Road)	4	Each	$7,500.00	$30,000.00
6	Rip Rap	600.0	Ton	$50.00	$30,000.00
7	Filter Fabric	960	SqYd	$3.00	$2,880.00
8	Gravel Surfacing	1500.0	Ton	$22.00	$33,000.00
9	Seeding, Mulching, and Fertilizer	2.5	Acres	$3,500.00	$8,750.00
	Construction Subtotal				$211,230.00
	Contingencies (15%)				$31,700.00
	Construction Total				**$242,930.00**
	Design Engineering				$26,000.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$28,600.00
	Roadway Easement				$8,000.00
	Administration & Legal				$7,300.00
	Total Project Cost				**$320,330.00**

Table 4.4.3-2 Wastewater Treatment Alternative 3: EUAC

A. Construction Cost

Item	Cost	SV	PW SV	NPW
Mobilization	$15,100.00	$0.00	$0.00	$15,100.00
Wastewater Enzyme Application	$7,500.00	$0.00	$0.00	$7,500.00
Unclassified Excavation/Roadway Grading	$24,000.00	$0.00	$0.00	$24,000.00
Concrete Box Culvert (Access Road)	$60,000.00	$36,000.00	$18,988.97	$41,011.03
Concrete Box Culvert Sloped Ends (Access Road)	$30,000.00	$18,000.00	$9,494.48	$20,505.52
Rip Rap	$30,000.00	$0.00	$0.00	$30,000.00
Filter Fabric	$2,880.00	$0.00	$0.00	$2,880.00
Gravel Surfacing	$33,000.00	$0.00	$0.00	$33,000.00
Seeding, Mulching, and Fertilizer	$8,750.00	$0.00	$0.00	$8,750.00
Capital Costs	$109,100.00	$0.00	$0.00	$109,100.00
Total Construction Cost	$320,330.00	$54,000.00	$28,483.45	$291,846.55

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$291,846.55
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$299,116.23**
Equivalent Uniform Annual Cost	**$20,572.88**

5 SELECTION OF ALTERNATIVES

5.1 WASTEWATER COLLECTION SYSTEM

The Collection System Alternative 1 (Do Nothing) is not recommended because it would not address any of the identified deficiencies with the existing wastewater collection system.

Collection System Alternative 2 - Inspection, Mapping, & Storm Sewer: This work is proposed in two phases. The first phase is to evaluate the sanitary sewer system by televising and mapping the system. This is of high importance to the City as current maps are severely deficient. The second phase is the removal of the storm sewer from the sanitary sewer system. The completion of this alternative will allow evaluation of the condition of the entire collection system, which will assist in the determination of future collection system rehabilitation methods. Additionally the storm sewer disconnects and re-alignment will be a significant reduction in inflow to the collection system. This alternative is an important step in determining the rehabilitation methods and reducing the inflow and infiltration to a manageable level and is therefore both phases are recommended. The expected construction cost for Alternative 2 – Phase 1 – Televising and Mapping is $198,264.50. Alternative 2 – Phase 2 – Storm Sewer is $383,160.00. The Equivalent Uniform Annual Cost (EUAC) for this alternative is $22,354.88.

Collection System Alternative 3 (Replace Clay Pipe with PVC) is the preferred method to eliminating the problems from inflow and infiltration in the system. This alternative would eliminate the need to clean and televise the existing lines. With an estimated cost of $7,440,320.00, this has a significant cost. This option depends on the funding that is made available to the City of Faulkton. At this time we feel this alternative is not feasible based on funding options available. The Equivalent Uniform Annual Cost (EUAC) for this alternative is $405,960.10.

Collection System Alternative 4 (Replace Clay Pipe with CIPP) is not recommended at this time. Based on the nine blocks already televised by A-Tech Sewer there is significant structural damage throughout the collection system. CIPP lined pipe is not suitable where there is significant structural damage. Therefore this alternative is not recommended.

Collection System Alternative 5 (Replace Clay Pipe with a combination of PVC & CIPP) is the most cost effective alternative to replacing and rehabilitating the existing sanitary collection system. After obtaining results from Alternative 2, Helms and Associates anticipate this alternative to be the best option. This alternative provides an estimate for lining the existing lines that do not have major sagging or alignment issues with CIPP and the remaining lines with significant problems would be replaced with PVC. The findings of Alternative 2 will be utilized to adjust this alternative to reflect the actual percentage of each replacement option. Based on the assumption of 70% replaced with PVC and 30% CIPP the project has an estimated construction cost of $6,215,729.00. Depending on the funding options available this alternative is feasible but is not recommended at this time based on similar towns and their funding options. The Equivalent Uniform Annual Cost (EUAC) for this alternative is $340,964.22.

Collection System Alternative 6 (Phased Alt 5) is recommended at this time. This alternative would provide the City most cost effective option for the City to complete alternative 5. As shown in Section 4.3.6 the work is split up between replacement and rehabilitation of 8" & 10" sewermain within the City in Phase I and replacement and rehabilitation of 10" (outfall), 6" and 4" sewermain in Phase II. This alternative presents a flexible option for the unknown funding. The estimated construction cost for Phase I is $3,581,722.00 with an EUAC of $197,177.06. The estimated construction cost of for Phase II is $2,711,207.00 with an EUAC of $148,492.85.

5.2 WASTEWATER TREATMENT

The selection of any treatment alternative with I&I reduction will also require Collection System Alternative 2, Alternative 5 or/and Alternative 6 to be completed.

The Wastewater Treatment System Alternative 1 (Do Nothing) is not recommended because it would not address any of the identified deficiencies with the existing wastewater treatment system.

Wastewater Treatment System Alternative 2 (180 Days of Storage) assumes a reduction in I&I of seventy percent (70%). The estimated cost of this alternative is currently $618,530.00 with an EUAC of $40,264.52. This alternative will add storage capacity to the treatment system, allows

the City to discharge and to meet discharge requirements. This alternative is the most cost effective when you consider the treatment and collection system improvements.

The collection alternative selected should be completed prior to implementing Wastewater Treatment System Alternative 2. After I&I is reduced and documented, the treatment system can be sized appropriately to reflect actual I&I reduction and the amount of wastewater accumulated from the collection system in 180 days. The cost estimate for Wastewater Treatment System Alternative 2 would be adjusted upon completion of the sewer rehabilitation efforts to reflect the changes to the size required for treatment. Therefore, this alternative is not recommended at this time.

Wastewater Treatment System Alternative 3 (Miscellaneous facility improvements) with an estimated construction cost of $320,330.00 with an EUAC of $20,572.88 addresses the known problems with the wastewater treatment facilities voiced by the SD DENR and City. Based on the benefits of this alternative and the needs it addresses we recommend this alternative.

A summary of the costs associated with each of the alternatives is provided in Table 5.2-1.

Table 5.2-1 Summary of Costs

Alternative	Estimated Cost	EUAC
Collection System Alternative 2: Inspection, Mapping - Phase 1	$198,264.50	$13,636.41
Collection System Alternative 2: Storm Sewer - Phase 2	$383,160.00	$22,354.88
Collection System Alternative 3: Replace Clay Pipe with PVC	$7,440,320.00	$405,960.10
Collection System Alternative 5: Replace Clay Pipe with Combination of CIPP and PVC	$6,215,729.00	$340,964.22
Collection System Alternative 6: Phase 1 Replace/Rehabilitation	$3,581,722.00	$197,177.06
Collection System Alternative 6: Phase 2 Replace/Rehabilitation	$2,711,207.00	$148,492.85
Treatment System Alternative 2: 180 Days of Storage w/ 70% I&I Reduction	$618,530.00	$40,264.52
Treatment System Alternative 3: Miscellaneous Improvements and Monitoring	$320,330.00	$20,572.88

5.3 IMPACT ON USER FEES

As part of the cost analysis of the recommended improvements, the estimated impact on the monthly user fees has been calculated. Financial data supplied by the City of Faulkton was used to determine the current operational status of the funds. The 2011 Wastewater Budget is provided in Table 5.3-1. The current sewer rate is a flat fee of $11.00 per month. In order to be eligible for grant dollars, the City needs to charge a minimum of $22.00 per month for 5,000 gallons of water.

Table 5.3-1 2011 Wastewater Budget

Account Description	2011 Budget	2012 Budget (3% Increase)
04321 Sanitary Administration		
604-04321-0411 Salaries & Wages	$25,000.00	$25,750.00
604-04321-0412 OASI (SS)	$1,550.00	$1,600.00
604-04321-0413 Retirement	$1,500.00	$1,550.00
604-04321-0415 Group Insurance	$9,000.00	$9,270.00
604-04321-0421 Insurance	$350.00	$360.00
604-04321-0429 Other	$300.00	$310.00
604-04321-4122 Medicare	$363.00	$370.00
604-04321-4261 Postage	$800.00	$820.00
604-04321-4341 Computer Software	$35.00	$40.00
604-04321-4344 Equipment/Machinery	$0.00	$0.00
Total Acct 04321 Sanitary Administration	**$38,898.00**	**$40,070.00**
04325 Sewer		
604-04325-0411 Salaries & Wages	$0.00	$0.00
604-04325-0412 OASI (SS)	$0.00	$0.00
604-04325-0413 Retirement	$0.00	$0.00
604-04325-0422 Professional Services	$0.00	$0.00
604-04325-0423 Publishing	$25.00	$30.00
604-04325-0425 Repairs & Maintenance	$13,000.00	$13,390.00
604-04325-0426 Supplies & Materials	$2,000.00	$2,060.00
604-04325-0427 Travel & Conferences	$150.00	$150.00
604-04325-0428 Utilities	$0.00	$0.00
604-04325-0429 Other	$2,000.00	$2,060.00
604-04325-0433 Improvements	$0.00	$0.00
604-04325-4122 Medicare	$0.00	$0.00
604-04325-4261 Postage	$50.00	$50.00
604-04325-4341 Computer Software	$0.00	$0.00
604-04325-4344 Equipment/Machinery	$0.00	$0.00
Total Acct 04325 Sewer	**$17,225.00**	**$17,740.00**
Total 604 Sewer Fund	**$56,123.00**	**$57,810.00**

The recommended wastewater collection and treatment options are summarized in Table 5.3-2.

Table 5.3-2 Summary of Recommended Alternative Costs

Recommended Alternative	Capital Cost	EUAC
Wastewater Collection		
Collection System Alternative 2: Inspection, Mapping - Phase 1	$198,264.50	$13,636.41
Collection System Alternative 2: Storm Sewer - Phase 2	$383,160.00	$22,354.88
Wastewater Treatment		
Treatment System Alternative 3: Miscellaneous Improvements and Monitoring	$320,330.00	$20,572.88
Total Capital Costs/EUAC	**$901,754.50**	**$56,564.17**

Table 5.3-3 summarizes the impacts of the proposed scope of work as it relates to existing revenues and 2012 operation and maintenance costs. The negative numbers indicate a shortfall in the account. The calculations in Table 5.3-4 are based on a 100% loan to complete the proposed scope of work. The debt retirement is based on a loan of 3.25% for 30 years. Right away we show a shortfall in the budget when we compare gross revenue and proposed 2012 operation and maintenance costs. A small increase of $0.50 per month would be necessary to balance the fund without implementing the proposed scope of work.

Table 5.3-3 Impact on User Fees

Gross Revenue	$55,440.00
Proposed O & M Cost	$57,810.00
Net Income	**-$2,370.00**
Annual Debt Retirement Costs with Project	$47,505.98
10% Debt Reserves (Required by DENR & RD)	$4,750.60
Remaining Surplus After Project	**-$54,626.57**
Increase of Sewer Charge	$11.00
Number of Accounts	420
Added Revenue	$55,440.00
Surplus After Increase in Sewer Charge	**$813.43**

With 100% loan, a 10% reserve fund, and the net income shortfall, the annual costs for the scope of work proposed would leave a deficit of $54,626.57. An increase of $11.00 per month would

be needed in order to balance the sewer fund with this scenario. Including the current $11.00 per month sewer rate, an increase of $11.00 would result in a monthly sewer rate of $22.00. This is the minimum required by the SD-DENR to receive any grant funding from their programs.

It is anticipated that a $22.00 sewer rate would not meet major resistance from the community. However, the City would not have much of a chance to obtain grant funding for this work since an $11.00 per month increase will only reach the minimum required rates. Therefore, this portion is only analyzed with loan funding. If we add Alternate 6 – Phase 1 to the analysis, the estimated impact to sewer fees would increase significantly without some grant assistance. Table 5.3-4 provides a summary of the increased costs with the addition of Alternate 6 – Phase 1.

Table 5.3-3 Impact on User Fees (W/Alt 6 – Phase 1)

Gross Revenue	$55,440.00
Proposed O & M Cost	$57,810.00
Net Income	**-$2,370.00**
Annual Debt Retirement Costs with Project	$236,197.24
10% Debt Reserves (Required by DENR & RD)	$23,619.72
Remaining Surplus After Project	**-$262,186.96**
Increase of Sewer Charge	$52.25
Number of Accounts	420
Added Revenue	$263,340.00
Surplus After Increase in Sewer Charge	**$1,153.04**

The increase in sewer rates would be approximately $52.25. To help offset these costs, we would expect the City to apply for Federal and State Grants to assist with the project. Table 5.3-5 shows how the sewer rates would be affected in the City of Faulkton with various grant/loan combinations with Alternate 6 – Phase 1 included. As example, if the City received a grant for 40% of the project, a loan of $2,690,086.00 would be required. Using an interest rate of 3.25% for 30 years, the sewer rates would need to increase a minimum of $31.41 to balance the sewer budget. Since the current rate is $11.00 per month, the total rate per month would increase to $42.41 per month.

The actual rates will be dependent upon the actual funding that would be obtained.

5.4 CAPITAL FINANCING PLAN

The City of Faulkton should make applications to state and federal resources for loan and grant assistance to complete the project during the 2012-13 construction seasons.

5.5 VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

The City of Faulkton is planning to conduct a public hearing on the proposed project. Information related to the hearing will be submitted after it is conducted.

Table 5.3-5 Sewer Rate Analysis

Funding Percentage (grant/loan)	**10/90**	**15/85**	**20/80**	**25/75**	**30/70**	**35/65**	**40/60**	**45/55**	**50/50**
Annual O & M (2012)	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810
Grant Amount	$448,348	$672,521	$896,695	$1,120,869	$1,345,043	$1,569,217	$1,793,391	$2,017,564	$2,241,738
Loan Amount	$4,035,129	$3,810,955	$3,586,781	$3,362,607	$3,138,434	$2,914,260	$2,690,086	$2,465,912	$2,241,738
Annual Loan Payment	$212,651	$200,837	$189,023	$177,209	$165,395	$153,581	$141,768	$129,954	$118,140
Debt Reserves	$21,265	$20,084	$18,902	$17,721	$16,540	$15,358	$14,177	$12,995	$11,814
Current Debt/Asset/Other Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Annual Costs	$291,726	$278,731	$265,736	$252,740	$239,745	$226,750	$213,754	$200,759	$187,764
Annual Revenue	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440
Surplus/Deficit After Project	-$236,286	-$223,291	-$210,296	-$197,300	-$184,305	-$171,310	-$158,314	-$145,319	-$132,324
Existing Sewer Rate	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00
Minimum Sewer Rate Increase	**$46.88**	**$44.30**	**$41.73**	**$39.15**	**$36.57**	**$33.99**	**$31.41**	**$28.83**	**$26.25**
Sewer Rate with Increase	**$57.88**	**$55.30**	**$52.73**	**$50.15**	**$47.57**	**$44.99**	**$42.41**	**$39.83**	**$37.25**
Funding Percentage (grant/loan)	**55/45**	**60/40**	**65/35**	**70/30**	**75/25**	**80/20**	**85/15**	**90/10**	
Annual O & M	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	$57,810	
Grant Amount	$2,465,912	$2,690,086	$2,914,260	$3,138,434	$3,362,607	$3,586,781	$3,810,955	$4,035,129	
Loan Amount	$2,017,564	$1,793,391	$1,569,217	$1,345,043	$1,120,869	$896,695	$672,521	$448,348	
Annual Loan Payment	$106,326	$94,512	$82,698	$70,884	$59,070	$47,256	$35,442	$23,628	
Debt Reserves	$10,633	$9,451	$8,270	$7,088	$5,907	$4,726	$3,544	$2,363	
Current Debt/Asset/Other Cost	$0	$0	$0	$0	$0	$0	$0	$0	
Total Annual Costs	$174,768	$161,773	$148,777	$135,782	$122,787	$109,791	$96,796	$83,801	
Annual Revenue	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	$55,440	
Surplus/Deficit After Project	-$119,328	-$106,333	-$93,337	-$80,342	-$67,347	-$54,351	-$41,356	-$28,361	
Existing Sewer Rate	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	$11.00	

6 SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS

6.1 JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

The alternatives chosen for the wastewater collection system will allow the City to further evaluate the existing collection system, make an educated decision on replacement of the existing system and allow them to reduce the amount of I&I through the removal of storm water flows and replacement and rehabilitation of the sanitary sewers.

The alternative chosen for the wastewater treatment system will repair immediate problems facing the City's treatment facilities and allow them to monitor and control their ponds more effectively. Once the collection alternatives are complete additional flow monitoring should be completed to determine current and future loading of the existing lagoons. If needed this report also addresses an alternative for pond expansion.

6.2 DESIGN OF SELECTED PLAN

The design of the improvements to the collection and treatment systems will provide enhanced flexibility in operation and will be designed in accordance with the SD DENR Criteria and other accepted principles and standards.

6.3 ARRANGEMENT FOR IMPLEMENTATION

This report provides information to describe the proposed project and to support the Council's decision to proceed with the selected options as quickly as possible. Final design will be completed by the City of Faulkton's consultant and approved by the Department of Environment and Natural Resources, as it is definitely a "work of sanitary significance." Cost estimates have been prepared and are referenced elsewhere in this document.

The project will be bid in accordance with state statutes that govern municipal corporations and will be constructed by the lowest responsible bidder.

6.4 LAND ACQUISITION

An easement would be required for the proposed access road construction provided in Treatment Improvements Alternate #3. The City has not started the process of acquiring access easements, but should begin this process as soon as possible.

6.5 INTERAGENCY AGREEMENTS

No operating agreements with other agencies are needed as the City of Faulkton owns, operates and maintains its municipal wastewater system. Loan documents will have to be executed with the appropriate lender but as Faulkton is a municipal corporation, it has the legal authority to enter into such agreements. Faulkton's attorney will advise the Council on any legal matters related to this issue.

Table 6.3-1 Proposed Schedule

Facility Plan Approved by City	February 15, 2012
Facility Plan Submitted to Funding Agencies	February 20, 2012
Environmental Review Completed	April 20, 2012
Funding Agency Approval of Facility Plan	April 30, 2012
Final Funding Package Complete	July 29, 2012
Begin Design	August 28, 2012
Plans & Specifications Submitted to DENR	October 28, 2012
Plans & Specifications Approved by DENR	November 28, 2012
Advertisement for Bids	December 5, 2012
Open Bids	January 4, 2013
Award Bids	January 19, 2013
Begin Construction	April 15, 2013
Construction Complete	December 11, 2013
Project Close-out	January 11, 2014

7 FINANCING OPTIONS

7.1 GENERAL

Financing any major construction project is difficult for a community that has limited resources. "Routine" community needs such as the improvements to streets, equipment replacement, correction of drainage problems, and solid waste issues cannot be neglected. These needs must be met and projects relating to addressing them must continue to be financed.

These "routine" types of projects frequently consume all or nearly all available community financial resources just to maintain an acceptable level of service. Consequently, to finance major capital improvement projects, other methods of obtaining capital must be investigated.

7.2 PAY-AS-YOU-GO

For small communities, the most common method of financing needed improvements is the "pay-as-you-go" method. This method obtains revenue from general taxation, fees, service charges, special funds and/or special assessments. The advantages of this method are:

1) No interest payments; and

2) Greater budget flexibility.

Disadvantages of this method are:

1) Inequities between age groups (older citizens pay for a share of the project and younger citizens who may not have paid any of the costs realize greater benefits simply because of greater life spans);

2) Difficulty in generating large amounts of capital that is often required for large scale capital improvements; and

3) Large scale capital improvements often cannot be constructed efficiently by phased construction.

7.3 RESERVE FUNDS

A variation of the "pay-as-you-go" method is using reserve fund financing. Communities using this method accumulate funds in advance for construction of needed capital improvements. This accumulation may be the result of surplus operating funds that are allowed to remain in the operating budget from year to year. These funds are often "earmarked" for a specific purpose. It may also be revenues from a certain percentage of the water or sewer rate that are specifically placed in a depreciation account. Financing projects in this manner is often attractive to communities.

This method can have its drawbacks. The most obvious drawback is that the fund has to have been established for some time to allow it to generate sufficient capital for a project that is needed today. Also, good management is required to ensure that the investment pays an adequate return. If the interest generated on the investment is not greater than the inflation rate, then gains in the accumulation of the fund may be lost to inflation.

7.4 SALES TAXES

Sales taxes can also be used to finance capital improvements. State statutes allow a City to dedicate sales tax revenues to capital improvement construction. A long-range plan can be developed to allow capital improvements to be constructed in phases. As revenue is generated each year, a segment of the overall plan is constructed. This method of constructing capital improvement projects is being used successfully by many communities.

7.5 BONDS

Another method of generating revenue for capital improvements is through the sale of bonds on the private bond market. Three different types of bonds are frequently used to finance capital improvement projects. Each has different requirements and will need the involvement of the City Attorney. The three types are General Obligation (GO), revenue and special assessment.

7.6 GENERAL OBLIGATION BONDS

General Obligation bonds always require a bond election with a 60% majority because General Obligation bonds pledge the taxing authority of the City to repay the bond. As they are backed by the taxing authority of the City, General Obligation bonds frequently offer a lower interest rate than revenue bonds.

7.7 REVENUE BONDS

Revenue bonds, which pledge revenues (that is, user fees) generated from the project, are often sold to finance capital improvement projects. They, like special assessment bonds, do not require a bond election but with any action of a governmental body, the enabling ordinance that must be approved by the Council can be referred. Sales tax revenues can be and are frequently used to repay both revenue and general obligation bonds.

7.8 SPECIAL ASSESSMENT BONDS

Special assessment bonds have a limited payback period. Assessment for principal and interest repayment are levied against and collected from adjacent property owners over a given period of years. The special assessments are collected with property tax payments. Street improvements are frequently financed through the use of special assessment bonds.

7.9 LEASE-PURCHASE

Local financial institutions are becoming interested in financing community improvements through lease-purchase programs. This interest appears to be the result of recently passed federal legislation that provides tax advantages to financial institutions that participate in community improvement efforts. Lease-purchase plans can also use sales tax revenues to provide the vehicle for repayment.

7.10 OTHER SOURCES OF FINANCING

All of the previously discussed methods of financing rely on 100% local funding. Often it is difficult, if not impossible, for a community to finance projects with 100% local funding. Fortunately, there are other resources and programs available that can be used in conjunction

with local funding to assist communities in financing projects such as the one being considered by the City.

7.11 FEDERALLY FUNDED LOANS / GRANTS

Federal agencies such as the US Department of Agriculture's Rural Development / Rural Utility Service (RD / RUS) has both grant and loan funds available for financing community improvements. RD / RUS requires a preliminary engineering report and pre-application, along with certain other information, before it can invite a community to submit a full application for project funding.

While the RD / RUS is the primary federal agency that funds local projects, there are other federal agencies that do assist local communities under "special" circumstances. These agencies include, but are not limited to, the Federal Emergency Management Agency (FEMA), the Economic Development Administration (EDA) and the US Department of Housing and Urban Development (HUD). However, these federal agencies normally do not become involved in funding local projects unless there has been a declared disaster or a major economic development activity is imminent.

7.12 STATE FINANCED LOANS / GRANTS

The State of South Dakota has several programs that can provide financial assistance for community facility improvements. The programs are operated through various departments of state government. Some are financed with 100% state resources, some use a combination of state and federal funds and some are federal "pass-through" funds.

7.13 DENR PROGRAMS

The Department of Environment and Natural Resources (DENR) has a low interest loan and grant program known as the Consolidated Water Facilities Construction Program (CWFCP). This program was established in 1986 by combining several existing grant and loan programs. It is funded entirely with state financing and is designed to provide financial assistance through grants and loans for water and wastewater projects throughout the state.

DENR also operates the State Revolving Fund (SRF) loan program. It began in 1987 as a result of amendments to the Federal Clean Water Act. This program was designed to replace the EPA, the federal construction grants program. EPA had, for a number of years, provided grants directly to communities to construct and/or rehabilitate wastewater treatment and collection systems. The funding from the construction grants program has been made available to the state. The federal funds are to be used in combination with state funds to create a revolving loan program that will be self-perpetuating. SRF funds are targeted specifically to wastewater treatment and collection systems, storm drain systems and other construction activities that will improve surface and groundwater quality.

7.14 GOED PROGRAM

The Governor's Office of Economic Development (GOED) administers the Community Development Block Grant (CDBG) program. This program utilizes the US Department of Housing and Urban Development (HUD) small cities program funding. CDBG funds may be used for a variety of community development activities, including water and sewer system renovations and rehabilitation. The emphasis of this program is to provide benefits for low and moderate income people. Information supplied by GOED indicates that most communities can probably qualify for funds from this program; however, an income survey may be necessary.

7.15 SUMMARY OF FUNDING OPTIONS

No existing program will provide a 100% grant to finance a project. Most of the programs (both state and federal) require or strongly recommend that the applicant provide some local funding. Low interest loans and grant offers are frequently "packaged" with available local funds to completely finance capital improvement project activities. DENR also has minimum rate requirements that must be met by a community for it to be eligible for grant funding under the CWFCP. The department is recommending that the minimum rate for municipal wastewater is $22.00 per month for 5,000 gallons of water used. If a community does not have its rates at or above this level, it will not be eligible for grant assistance from the consolidated program.

7.16 FUNDING RECOMMENDATIONS

Given the cost of construction of a project of this scope and the limited amount of local finances available, it is recommended that the community should:

1. Make application to place this project on the State Water Facilities Plan.

2. Evaluate its own financial resources, rate structure and various funding sources available to construct capital improvement projects to see if rate increases or other funding options may be used to finance all or part of the proposed project. Additionally with recent watermain projects completed the City needs to evaluate their bonding ability for the proposed sewer projects.

3. Complete applications for financial assistance to programs such as the CWFCP, CDBG Program, and/or USDA's Rural Development / Rural Utility Service Water and Sewer Program when the project is approved for the State Water Facilities Plan.

The process of completing applications for financial assistance could begin when an application to the State Water Facilities Plan is submitted. Early application for financial assistance could speed the process of obtaining financing for project construction as obtaining financing can be a lengthy process.

8 REFERENCES

- Agricultural Experiment Station, (November 1971) *Climate of South Dakota*, Brookings, SD South Dakota State University

- EPA, (October 1983) *Design Manual: Municipal Wastewater Stabilization Ponds*, Washington, DC United States Environmental Protection Agency

- South Dakota Department of Environment and Natural Resources, (May 1990). *Recommended Design Criteria Manual, Wastewater Collection and Treatment Facilities,* Pierre, SD: Division of Environmental Regulation.

CULTURAL RESOURCES EFFECTS ASSESSMENT

NORTHEAST COUNCIL OF GOVERNMENTS

416 Production St N Ste #1 Aberdeen, SD 57401

Recommendations

Recommended Alternative	Capital Cost	EUAC
Wastewater Collection		
Collection System Alternative 6: Phase 1 Replace/Rehabilitation	$4,594,646.05	$254,306.91
Collection System Alternative 6: Phase 2 Replace/Rehabilitation	$3,245,670.00	$178,705.77
Total Capital Costs/EUAC	**$7,840,316.05**	**$433,012.67**

Table 4.3.6-1 Collection System Alternative 6: Estimated Construction Cost Phase I

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$250,000.00	$250,000.00
2	Remove and Dispose of Existing Asphalt	32,800	SqYd	$3.00	$98,400.00
3	Remove and Dispose of Existing Manhole	30	Each	$400.00	$12,000.00
4	Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	349	LF	$2.50	$871.50
5	Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	2,619	LF	$2.00	$5,238.00
6	10" Cured in Place Pipe Liner (CIPP Liner)	349	LF	$45.00	$15,687.00
7	8" Cured in Place Pipe Liner (CIPP Liner)	2,619	LF	$30.00	$78,570.00
8	Cut Protruding Tap, Offset Joints, Mineral	250	Each	$150.00	$37,500.00
9	Sewer Service Tap Cut Out to Reinstate Service	110	Each	$250.00	$27,500.00
10	Post-Rehabilitation Televising of 10" Diameter	349	LF	$1.75	$610.05
11	Post-Rehabilitation Televising of 8" Diameter	2,619	LF	$1.50	$3,928.50
12	Manhole Interior Lining	100	VF	$250.00	$25,000.00
13	12" SDR 35 PVC Sanitary Sewer Pipe	7,057	LF	$50.00	$352,850.00
14	10" SDR 35 PVC Sanitary Sewer Pipe	1,529	LF	$45.00	$68,823.00
15	8" SDR 35 PVC Sanitary Sewer Pipe	6,111	LF	$38.00	$232,218.00
16	12" Casing pipe	220	LF	$50.00	$11,000.00
17	Sanitary Sewer Manhole	41	Each	$3,500.00	$143,500.00
18	12" x 4" Sanitary Sewer Wye	30	Each	$300.00	$9,000.00
19	10" x 4" Sanitary Sewer Wye	70	Each	$250.00	$17,500.00
20	8" x 4" Sanitary Sewer Wye	100	Each	$200.00	$20,000.00
21	4" SDR 35 Sanitary Sewer Pipe	10,000	LF	$21.00	$210,000.00
22	Connect to Existing Sewer Service & Cleanout	200	Each	$375.00	$75,000.00
23	Bypass Pumping	1	LS	$10,000.00	$10,000.00
24	Manholes)	1	LS	$15,000.00	$15,000.00
25	Asphalt Surfacing (4")	7,600.0	Ton	$150.00	$1,140,000.00
26	Concrete Sidewalk Repair	8,000	SqFt	$7.00	$56,000.00
27	Concrete Curb & Gutter Repair	1,000	Ft	$26.00	$26,000.00
28	Gravel Base Course (10")	18,600.0	Ton	$22.00	$409,200.00
29	Traffic Control	1	LS	$15,000.00	$15,000.00
30	Topsoil, Seed, Fertilize & Mulch	2.3	Acres	$3,500.00	$8,050.00
	Construction Subtotal				$3,374,446.05
	Contingencies (15%)				$507,000.00
	Construction Total				**$3,881,446.05**
	Design Engineering				$298,900.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$328,800.00
	Administration & Legal				$78,000.00
	Total Project Cost				**$4,594,646.05**

Table 4.3.6-2 Collection System Alternative 6: EUAC Phase I

Item	Cost	SV	PW SV	NPW
Mobilization	$250,000.00	$0.00	$0.00	$250,000.00
Remove and Dispose of Existing Asphalt	$98,400.00	$0.00	$0.00	$98,400.00
Remove and Dispose of Existing Manhole	$12,000.00	$0.00	$0.00	$12,000.00
Clean, Inspect and Prerehabilitation Televise of 10" Diameter Sanitary Sewer	$871.50	$0.00	$0.00	$871.50
Clean, Inspect and Prerehabilitation Televise of 8" Diameter Sanitary Sewer	$5,238.00	$0.00	$0.00	$5,238.00
10" Cured in Place Pipe Liner (CIPP Liner)	$15,687.00	$9,412.20	$4,964.66	$10,722.34
8" Cured in Place Pipe Liner (CIPP Liner)	$78,570.00	$47,142.00	$24,866.05	$53,703.95
Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	$37,500.00	$0.00	$0.00	$37,500.00
Sewer Service Tap Cut Out to Reinstate Service	$27,500.00	$16,500.00	$8,703.28	$18,796.72
Post-Rehabilitation Televising of 10" Diameter Sewer	$610.05	$0.00	$0.00	$610.05
Post-Rehabilitation Televising of 8" Diameter Sewer	$3,928.50	$0.00	$0.00	$3,928.50
Manhole Interior Lining	$25,000.00	$15,000.00	$7,912.07	$17,087.93
12" SDR 35 PVC Sanitary Sewer Pipe	$352,850.00	$211,710.00	$111,670.94	$241,179.06
10" SDR 35 PVC Sanitary Sewer Pipe	$68,823.00	$41,293.80	$21,781.29	$47,041.71
8" SDR 35 PVC Sanitary Sewer Pipe	$232,218.00	$139,330.80	$73,492.99	$158,725.01
12" Casing pipe	$11,000.00	$6,600.00	$3,481.31	$7,518.69
Sanitary Sewer Manhole	$143,500.00	$86,100.00	$45,415.27	$98,084.73
12" x 4" Sanitary Sewer Wye	$9,000.00	$5,400.00	$2,848.34	$6,151.66
10" x 4" Sanitary Sewer Wye	$17,500.00	$10,500.00	$5,538.45	$11,961.55
8" x 4" Sanitary Sewer Wye	$20,000.00	$12,000.00	$6,329.66	$13,670.34
4" SDR 35 Sanitary Sewer Pipe	$210,000.00	$126,000.00	$66,461.38	$143,538.62
Connect to Existing Sewer Service & Cleanout	$75,000.00	$0.00	$0.00	$75,000.00
Bypass Pumping	$10,000.00	$0.00	$0.00	$10,000.00
Inverted Siphon Stream Crossing (Piping & Manholes)	$15,000.00	$9,000.00	$4,747.24	$10,252.76
Asphalt Surfacing (4")	$1,140,000.00	$684,000.00	$360,790.34	$779,209.66
Concrete Sidewalk Repair	$56,000.00	$33,600.00	$17,723.03	$38,276.97
Concrete Curb & Gutter Repair	$26,000.00	$15,600.00	$8,228.55	$17,771.45
Gravel Base Course (10")	$409,200.00	$245,520.00	$129,504.74	$279,695.26
Traffic Control	$15,000.00	$0.00	$0.00	$15,000.00
Topsoil, Seed, Fertilize & Mulch	$8,050.00	$0.00	$0.00	$8,050.00
Capital Costs	$1,220,200.00	$0.00	$0.00	$1,220,200.00
Total Construction Cost	$4,594,646.05	$1,714,708.80	$904,459.59	$3,690,186.46

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67
C. Equivalent Uniform Annual Cost		
NPW Construction Cost		$3,690,186.46
NPW of O & M Costs		$7,269.67
Total Net Present Worth		**$3,697,456.13**
Equivalent Uniform Annual Cost		**$254,306.91**

Table 4.3.6-3 Collection System Alternative 6: Estimated Construction Cost Phase II

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$176,400.00	$176,400.00
2	Remove and Dispose of Existing Asphalt	22,700	SqYd	$3.00	$68,100.00
3	Remove and Dispose of Existing Manhole	4	Each	$400.00	$1,600.00
4	Manhole Interior Lining	40	VF	$250.00	$10,000.00
5	12" SDR 35 PVC Sanitary Sewer Pipe	3,960	LF	$45.00	$178,200.00
6	8" SDR 35 PVC Sanitary Sewer Pipe	10,765	LF	$38.00	$409,070.00
7	12" Casing pipe	200	LF	$40.00	$8,000.00
8	Sanitary Sewer Manhole	41	Each	$3,500.00	$143,500.00
9	8" x 4" Sanitary Sewer Wye	115	Each	$175.00	$20,125.00
10	4" SDR 35 Sanitary Sewer Pipe	5,750	LF	$21.00	$120,750.00
11	Connect to Existing Sewer Service & Cleanout	115	Each	$375.00	$43,125.00
12	Bypass Pumping	1	LS	$7,500.00	$7,500.00
13	Asphalt Surfacing (4")	5,300.0	Ton	$160.00	$848,000.00
14	Concrete Sidewalk Repair	4,600	SqFt	$7.00	$32,200.00
15	Concrete Curb & Gutter Repair	575	Ft	$26.00	$14,950.00
16	Gravel Base Course (10")	12,900.0	Ton	$22.00	$283,800.00
17	Traffic Control	1	LS	$5,000.00	$5,000.00
18	Topsoil, Seed, Fertilize & Mulch	3.1	Acres	$3,500.00	$10,850.00
	Subtotal				$2,381,170.00
	Contingencies (15%)				$358,000.00
	Construction Total				**$2,739,170.00**
	Design Engineering				$211,000.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$233,000.00
	Administration & Legal				$55,000.00
	Total Project Cost				**$3,245,670.00**

Table 4.3.6-4 Collection System Alternative 6: EUAC Phase II

Item	Cost	SV	PW SV	NPW
Mobilization	$176,400.00	$0.00	$0.00	$176,400.00
Remove and Dispose of Existing Asphalt	$68,100.00	$0.00	$0.00	$68,100.00
Remove and Dispose of Existing Manhole	$1,600.00	$0.00	$0.00	$1,600.00
Manhole Interior Lining	$10,000.00	$6,000.00	$3,164.83	$6,835.17
12" SDR 35 PVC Sanitary Sewer Pipe	$178,200.00	$106,920.00	$56,397.23	$121,802.77
8" SDR 35 PVC Sanitary Sewer Pipe	$409,070.00	$245,442.00	$129,463.60	$279,606.40
12" Casing pipe	$8,000.00	$4,800.00	$2,531.86	$5,468.14
Sanitary Sewer Manhole	$143,500.00	$86,100.00	$45,415.27	$98,084.73
8" x 4" Sanitary Sewer Wye	$20,125.00	$12,075.00	$6,369.22	$13,755.78
4" SDR 35 Sanitary Sewer Pipe	$120,750.00	$72,450.00	$38,215.29	$82,534.71
Connect to Existing Sewer Service & Cleanout	$43,125.00	$0.00	$0.00	$43,125.00
Bypass Pumping	$7,500.00	$0.00	$0.00	$7,500.00
Asphalt Surfacing (4")	$848,000.00	$508,800.00	$268,377.37	$579,622.63
Concrete Sidewalk Repair	$32,200.00	$19,320.00	$10,190.74	$22,009.26
Concrete Curb & Gutter Repair	$14,950.00	$8,970.00	$4,731.42	$10,218.58
Gravel Base Course (10")	$283,800.00	$170,280.00	$89,817.80	$193,982.20
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Topsoil, Seed, Fertilize & Mulch	$10,850.00	$0.00	$0.00	$10,850.00
Capital Costs	$864,500.00	$0.00	$0.00	$864,500.00
Total Construction Cost	$3,245,670.00	$1,241,157.00	$654,674.63	$2,590,995.37

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$2,590,995.37
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$2,598,265.04**
Equivalent Uniform Annual Cost	**$178,705.77**

Table 4.3.6-4 Collection System Alternative 6: EUAC Phase I and II

Item	Cost	SV	PW SV	NPW
Mobilization	$294,800.00	$0.00	$0.00	$294,800.00
Remove and Dispose of Existing Asphalt	$117,600.00	$0.00	$0.00	$117,600.00
Remove and Dispose of Existing Manhole	$17,600.00	$0.00	$0.00	$17,600.00
Clean, Inspect and Prerehabilitation Televise of 18"	$2,820.00	$0.00	$0.00	$2,820.00
Clean, Inspect and Prerehabilitation Televise of 15"	$1,750.00	$0.00	$0.00	$1,750.00
Clean, Inspect and Prerehabilitation Televise of 12"	$2,317.50	$0.00	$0.00	$2,317.50
Clean, Inspect and Prerehabilitation Televise of 10"	$2,236.00	$0.00	$0.00	$2,236.00
Clean, Inspect and Prerehabilitation Televise of 8"	$6,844.00	$0.00	$0.00	$6,844.00
18" Cured in Place Pipe Liner (CIPP Liner)	$45,120.00	$27,072.00	$14,279.70	$30,840.30
15" Cured in Place Pipe Liner (CIPP Liner)	$24,500.00	$14,700.00	$7,753.83	$16,746.17
12" Cured in Place Pipe Liner (CIPP Liner)	$31,930.00	$19,158.00	$10,105.29	$21,824.71
10" Cured in Place Pipe Liner (CIPP Liner)	$31,304.00	$18,782.40	$9,907.18	$21,396.82
8" Cured in Place Pipe Liner (CIPP Liner)	$85,550.00	$51,330.00	$27,075.10	$58,474.90
Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	$21,250.00	$0.00	$0.00	$21,250.00
Sewer Service Tap Cut Out to Reinstate Service	$28,000.00	$16,800.00	$8,861.52	$19,138.48
Manhole Interior Lining	$13,500.00	$8,100.00	$4,272.52	$9,227.48
12" SDR 35 PVC Sanitary Sewer Pipe	$116,145.00	$69,687.00	$36,757.89	$79,387.11
10" SDR 35 PVC Sanitary Sewer Pipe	$208,120.00	$124,872.00	$65,866.39	$142,253.61
8" SDR 35 PVC Sanitary Sewer Pipe	$341,066.00	$204,639.60	$107,941.51	$233,124.49
12" Casing pipe	$11,000.00	$6,600.00	$3,481.31	$7,518.69
Sanitary Sewer Manhole	$165,200.00	$99,120.00	$52,282.95	$112,917.05
12" x 4" Sanitary Sewer Wye	$17,550.00	$10,530.00	$5,554.27	$11,995.73
10" x 4" Sanitary Sewer Wye	$3,300.00	$1,980.00	$1,044.39	$2,255.61
8" x 4" Sanitary Sewer Wye	$26,100.00	$15,660.00	$8,260.20	$17,839.80
4" SDR 35 Sanitary Sewer Pipe	$273,000.00	$163,800.00	$86,399.79	$186,600.21
Post-Rehabilitation Televising of 18" Diameter Sewer	$1,692.00	$0.00	$0.00	$1,692.00
Post-Rehabilitation Televising of 15" Diameter Sewer	$1,050.00	$0.00	$0.00	$1,050.00
Post-Rehabilitation Televising of 12" Diameter Sewer	$1,545.00	$0.00	$0.00	$1,545.00
Post-Rehabilitation Televising of 10" Diameter Sewer	$1,677.00	$0.00	$0.00	$1,677.00
Post-Rehabilitation Televising of 8" Diameter Sewer	$5,133.00	$0.00	$0.00	$5,133.00
Connect to Existing Sewer Service & Cleanout	$97,500.00	$0.00	$0.00	$97,500.00
Manhole Post Construction Testing	$11,800.00	$7,080.00	$3,734.50	$8,065.50
Bypass Pumping	$20,000.00	$0.00	$0.00	$20,000.00
Pipe Bedding	$72,500.00	$0.00	$0.00	$72,500.00
Asphalt Surfacing	$1,365,000.00	$819,000.00	$431,998.95	$933,001.05
Concrete Sidewalk Repair	$72,800.00	$43,680.00	$23,039.94	$49,760.06
Concrete Curb & Gutter Repair	$39,000.00	$23,400.00	$12,342.83	$26,657.17
Gravel Base Course (10")	$379,100.00	$227,460.00	$119,978.61	$259,121.39
Traffic Control	$11,575.00	$0.00	$0.00	$11,575.00
Topsoil, Seed, Fertilize & Mulch	$10,500.00	$0.00	$0.00	$10,500.00
Capital Costs	$1,146,400.00	$0.00	$0.00	$1,146,400.00
Total Construction Cost	$5,125,874.50	$1,973,451.00	$1,040,938.67	$4,084,935.83

B. Operation and Maintenance Costs for Proposed Construction

Item	Annual Cost	NPW
Miscellaneous	$500.00	$7,269.67
Subtotal	$500.00	$7,269.67

C. Equivalent Uniform Annual Cost

NPW Construction Cost	$4,084,935.83
NPW of O & M Costs	$7,269.67
Total Net Present Worth	**$4,092,205.51**
Equivalent Uniform Annual Cost	**$281,457.33**

Faulkton Wastewater Project A-5856
Faulkton, SD - January 2016
Table 4.3.6-3 Collection System Alternative 6: Estimated Construction Cost Phase I and II

Item	Description	Quantity		Unit Price	Total Cost
1	Mobilization	1	LS	$294,800.00	$294,800.00
2	Remove and Dispose of Existing Asphalt	39,200	SqYd	$3.00	$117,600.00
3	Remove and Dispose of Existing Manhole	44	Each	$400.00	$17,600.00
4	Clean, Inspect and Prerehabilitation Televise of 18"	1,128	LF	$2.50	$2,820.00
5	Clean, Inspect and Prerehabilitation Televise of 15"	700	LF	$2.50	$1,750.00
6	Clean, Inspect and Prerehabilitation Televise of 12"	1,030	LF	$2.25	$2,317.50
7	Clean, Inspect and Prerehabilitation Televise of 10"	1,118	LF	$2.00	$2,236.00
8	Clean, Inspect and Prerehabilitation Televise of 8"	3,422	LF	$2.00	$6,844.00
9	18" Cured in Place Pipe Liner (CIPP Liner)	1,128	LF	$40.00	$45,120.00
10	15" Cured in Place Pipe Liner (CIPP Liner)	700	LF	$35.00	$24,500.00
11	12" Cured in Place Pipe Liner (CIPP Liner)	1,030	LF	$31.00	$31,930.00
12	10" Cured in Place Pipe Liner (CIPP Liner)	1,118	LF	$28.00	$31,304.00
13	8" Cured in Place Pipe Liner (CIPP Liner)	3,422	LF	$25.00	$85,550.00
14	Cut Protruding Tap, Offset Joints, Mineral Deposits, etc.	250	Each	$85.00	$21,250.00
15	Sewer Service Tap Cut Out to Reinstate Service	160	Each	$175.00	$28,000.00
16	Manhole Interior Lining	60	VF	$225.00	$13,500.00
17	12" SDR 35 PVC Sanitary Sewer Pipe	2,581	LF	$45.00	$116,145.00
18	10" SDR 35 PVC Sanitary Sewer Pipe	5,203	LF	$40.00	$208,120.00
19	8" SDR 35 PVC Sanitary Sewer Pipe	9,218	LF	$37.00	$341,066.00
20	12" Casing pipe	220	LF	$50.00	$11,000.00
21	Sanitary Sewer Manhole	59	Each	$2,800.00	$165,200.00
22	12" x 4" Sanitary Sewer Wye	65	Each	$270.00	$17,550.00
23	10" x 4" Sanitary Sewer Wye	15	Each	$220.00	$3,300.00
24	8" x 4" Sanitary Sewer Wye	180	Each	$145.00	$26,100.00
25	4" SDR 35 Sanitary Sewer Pipe	13,000	LF	$21.00	$273,000.00
26	Post-Rehabilitation Televising of 18" Diameter Sewer	1,128	LF	$1.50	$1,692.00
27	Post-Rehabilitation Televising of 15" Diameter Sewer	700	LF	$1.50	$1,050.00
28	Post-Rehabilitation Televising of 12" Diameter Sewer	1,030	LF	$1.50	$1,545.00
29	Post-Rehabilitation Televising of 10" Diameter Sewer	1,118	LF	$1.50	$1,677.00
30	Post-Rehabilitation Televising of 8" Diameter Sewer	3,422	LF	$1.50	$5,133.00
31	Connect to Existing Sewer Service & Cleanout	260	Each	$375.00	$97,500.00
32	Manhole Post Construction Testing	59	VF	$200.00	$11,800.00
33	Bypass Pumping	1	LS	$20,000.00	$20,000.00
34	Pipe Bedding	5000	Tons	$14.50	$72,500.00
35	Asphalt Surfacing	9,100.0	Tons	$150.00	$1,365,000.00
36	Concrete Sidewalk Repair	10,400	SqFt	$7.00	$72,800.00
37	Concrete Curb & Gutter Repair	1,300	Ft	$30.00	$39,000.00
38	Gravel Base Course (10")	22,300.0	Tons	$17.00	$379,100.00
39	Traffic Control	1	LS	$11,575.00	$11,575.00
40	Topsoil, Seed, Fertilize & Mulch	3.0	Acres	$3,500.00	$10,500.00
	Construction Subtotal				$3,979,474.50
	Contingencies (10%)				$398,000.00
	Construction Total				**$4,377,474.50**
	Design Engineering				$310,900.00
	Bidding and Contract Documents				$7,500.00
	Construction Engineering				$342,000.00
	USDA-RD Additional Services				$25,000.00
	Administration & Legal				$88,000.00
	Total Project Cost				**$5,150,874.50**

WRAP Review Sheet
Sanitary/Storm Sewer Facilities Funding Application
Applicant: Prairie Meadows Sanitary District

Project Title:	Wastewater Collection System Improvements
Funding Requested:	$1,388,000
Total Project Cost:	$1,388,000
Project Description:	The project involves replacing or rehabilitating the district's wastewater collection system and service lines. The collection system must meet city of Sioux Falls standards in anticipation of annexation.
Alternatives Evaluated:	The "No Action" alternative was rejected due to the poor condition of the collection system and the excessive inflow and infiltration. System Rehabilitation alternative is the chosen alternative. This includes replacement with PVC pipe and rehabilitation using cured in place pipe.
Implementation Schedule:	Prairie Meadows anticipates bidding the project in May 2016 with a project completion date of October 2016.
Service Population:	188
Current Domestic Rate:	$100.00 flat rate

Interest Rate: 3.25% Term: 30 years Security: System Revenue

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan, Prairie Meadows would have to establish a debt service rate component of $88/month to provide 110% coverage. Once connected to Sioux Falls, residents will pay approximately $35/month for 5,000 gallon of usage. When combined, residents of Prairie Meadows will be paying approximately $123/month.

25% Funding Subsidy:	$347,000 subsidy with a loan of $1,041,000.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $1,041,000, Prairie Meadows would need a debt service rate component of $67/month to provide 110% coverage. When combined with the $35/month Sioux Falls usage rate, residents of Prairie Meadows will pay $102/month.

50% Funding Subsidy:	$694,000 subsidy with a loan of $694,000.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $694,000, Prairie Meadows would need a debt service rate component of $44/month to provide 110% coverage. When combined with the $35/month Sioux Falls usage rate, residents of Prairie Meadows will pay $79/month.

65% Funding Subsidy:	$902,200 subsidy with a loan of $485,800.
Coverage at 65% Subsidy:	Based on a 65% subsidy and a loan of $485,800, Prairie Meadows would need a debt service rate component of $31/month to provide 110% coverage. When combined with the $35/month Sioux Falls usage rate, residents of Prairie Meadows will pay $66/month.

ENGINEERING REVIEW COMPLETED BY: ERIC MEINTSMA

FINANCIAL REVIEW COMPLETED BY: DAVID RUHNKE

SECOG

SOUTH EASTERN COUNCIL OF GOVERNMENTS

SOUTH DAKOTA

RECEIVED
RECEIVED
JAN 04 2015
Division of Financial & Technical Assistance
Division of Financial & Technical Assistance

December 29, 2015

Mike Perkovich
SD-DENR
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3182

Dear Mr. Perkovich:

Enclosed, please find the Clean Water Facilities Funding Application for Prairie Meadows Sanitary District's Wastewater Collection System Improvements Project. Included with the general application are the following appendices:

Appendix A – Cash Flow Narrative
Appendix B – Supplemental Signed Application Forms including the Certification of Needs Categories, EPA Preaward Compliance Review, and Certification Regarding Debarment, Suspension, and Other Responsibility Matters.
Appendix C – Signed Application Resolution
Appendix D – User Rate Statement
Appendix E – 2013 Financial Statements
Appendix F – 2014 Financial Statements
Appendix G – 2015 YTD Financial Statements

The Facilities Plan is not included with the application. It was previously sent to DENR in connection with the District's Small Community Planning Grant.

Should the Department have questions or comments pertaining to this application, please contact the engineer listed in the application or me.

Sincerely,

Kristen Benidt
GIS Analyst/Planner

Enclosures

c: Prairie Meadows Sanitary District
East Dakota Water Development District
Jon Brown, Stockwell Engineers

500 N. Western Ave. Suite 100 • Sioux Falls, SD 57104
Phone: 605.367.5390 • Fax: 605.367.5394
Website: www.secog.org • E-mail: gis@secog.org
Lynne Keller Forbes, Executive Director

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: Prairie Meadows Sanitary District	Proposed Funding Package
Address: 4401 S. Ellis Road Sioux Falls, SD 57106	Requested Funding $1,388,000 Local Cash _____
Subapplicant:	Other: _____ _____ Other: _____ _____
DUNS Number: 078711733	Other: _____ _____ TOTAL $1,388,000

Project Title: Wastewater Collection System Improvements

Description:

Prairie Meadows Sanitary District's existing wastewater collection system consists primarily of aging clay pipe that is nearing the end of its useful life. During rainfall events, the system experiences an increase in wastewater flows from infiltration and inflow (I/I) and because the District pumps the wastewater to Sioux Falls for treatment, the I/I increases the amount the District pays to the City each month. The District proposes the rehabilitation of the clay pipe with PVC and cured-in-place-pipe and the replacement of service lines to houses. The improvements will upgrade the system to meet current DENR and City of Sioux Falls' standards in anticipation of the area being annexed by the City in the near future.

The Prairie Meadows Sanitary District has a wastewater reserve fund. The District's flat rate charge for wastewater is $100.00.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Ken Sutter, President
Name & Title of Authorized Signatory (Typed)

Ken Sutter 12/22/15
Signature Date

Professional Consultants

Application Prepared By: South Eastern Council of Governments

Contact Person: Kristen Benidt

Mailing Address: 500 N. Western Avenue Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 367-5390 Fax: (605) 367-5394

Email address: gis@secog.org

Consulting Engineering Firm: Stockwell Engineers

Contact Person: Jon Brown, PE

Mailing Address: 600 North Main Avenue Suite 100

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 338-6668 Fax: (605) 338-8750

Email address: jbrown@stockwellengineers.com

Legal Counsel's Firm: Woods, Fuller, Shultz & Smith P.C.

Contact Person: Matthew P. Bock

Mailing Address: 300 South Phillips Avenue Suite 300

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 978-0664 Fax: (605) 339-3357

Email address: matt.bock@woodsfuller.com

Bond Counsel's Firm: Davenport, Evans, Hurwitz & Smith LLP

Contact Person: Douglas J. Hajek

Mailing Address: 206 West 14th Street/P.O. Box 1030

City, State, and Zip: Sioux Falls, SD 57101-1030

Telephone Number: (605) 336-2880 Fax: (605) 335-3639

Email address: dhajek@dehs.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B	C	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$12,000					$12,000
D. Other SECOG	$3,000					$3,000
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$90,000					$90,000
B. Project Inspection Fees	$90,000					$90,000
C. Other	$46,000					$46,000
4. Construction & Improvements	$997,000					$997,000
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$1,238,000					$1,238,000
10. Contingencies	$150,000					$150,000
11. Total (Lines 9 and 10)	$1,388,000					$1,388,000
12. Total %	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) CW-SRF Loan	$588,000		
Other (Explain) CW-SRF Principle Forgiveness	$200,000		
Other (Explain) CW-SRF Loan (Grant)		$600,000	March 25, 2016
Total	$788,000	$600,000	$1,388,000

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other					
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 188 2010 188 2000 188

Top three employers within 30 miles	Number of Employees	Type of Business
Sanford Health	8,571	Health Care
Avera Health	6,259	Health Care
John Morrell & Company	3,350	Meat Processing

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☒ 2. Revenue Bond
- ☐ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year						
Operating Revenue						
Base Fees						
Surcharge Fees						
Other (Explain)						
Operating Expenses						
Personal Services						
Chemical, Material & Supplies						
Electric & Other Utilities						
Other (Explain)						
Operating Net Cash						
Nonoperating Cash Flow						
Interest Revenue						
Transfers In (Explain)						
Fixed Asset Purchases						
Transfers Out (Explain)						
Principal Debt Payments						
Interest Debt Payments						
Other (Explain)						
Nonoperating Net Cash						
Increase (Decrease) Cash						
Beginning Cash Balance						
Ending Cash Balance						
Restricted Balance						
Unrestricted Balance						

Additional Comments (Explanations)

See attached spreadsheet- due to Prairies Meadows relationship to Sioux Falls, operating expense categories on this page are insufficient.

Wastewater Fund Cash Flow Information

	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
OPERATING CASH FLOW						
Wastewater Fee	$ 63,476	$ 83,272	$ 92,443	$ 92,443	$ 92,443	$ 92,443
Surcharge Fee						
Other (Explain):						
OPERATING PAYMENTS						
Wastewater Treatment	$ (46,000)	$ (75,000)	$ (72,000)	$ (72,000)	$ (72,000)	$ (72,000)
Chemical, Material & Supplies						
Electric & Other Utilities	$ (122)	$ (117)	$ (124)	$ (124)	$ (124)	$ (124)
Other - Engineering & Professional						
Other - Accounting	$ (3,375)	$ (4,200)	$ (4,200)	$ (4,200)	$ (4,200)	$ (4,200)
Other - Postage and Meeting Payments	$ (3,879)	$ (2,792)	$ (3,328)	$ (3,328)	$ (3,328)	$ (3,328)
Other - Attorney	$ (11,210)	$ (373)	$ (11,880)			
NET CASH FROM OPERATIONS	$ (1,110)	$ 790	$ 910	$ 12,791	$ 12,791	$ 12,791
NONOPERATIONAL CASH FLOW						
Interest Income						
Other Revenue (Explain)						
Transfers In (Explain)						
Fixed Asset Sale (Explain)						
Transfers Out (Explain)						
Fixed Asset Purch (Explain)						
Debt Payment (Principal Only)						$ (27,831)
Debt Payment (Interest Only)						$ (44,773)
Other - Interest on Sioux Falls Balance						
NET CASH FROM NONOPERATING	$ -	$ -	$ -	$ -	$ -	$ (72,604)
Net Increase (Decrease) in Cash	$ (1,110)	$ 790	$ 910	$ 12,791	$ 12,791	$ (59,813)
Beginning Cash Balance	$ 2,449	$ 1,340	$ 2,129	$ 3,039	$ 15,830	$ 28,620
Ending Cash Balance	$ 1,340	$ 2,129	$ 3,039	$ 15,830	$ 28,620	$ (31,193)
RESTRICTED BALANCE	$ -	$ -	$ -	$ -	$ -	$ -
UNRESTRICTED BALANCE	$ 1,340	$ 2,129	$ 3,039	$ 15,830	$ 28,620	$ (31,193)

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$100.00	$100.00	73	Unmetered
Business				
Other:				
Other:				

Are fees based on usage or flat rate? Flat rate

When is proposed fee scheduled to take effect? N/A

When did the current fee take effect? January 1, 2014

What was the fee prior to the current rate? $60.00

Storm Sewer Projects Only: Does applicant have a separate storm water fee? _____

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Unknown-usage unmetered		

Prairie Meadows Sanitary District currently pumps its wastewater to Sioux Falls for treatment. The system's clay pipe is reaching the end of its useful life and there is poor drainage in the area which increases flows into the system due to infiltration and inflow (I/I). Because the Sanitary District pays the City based on usage, this increased I/I increases the amount due to the City each month.

Sioux Falls bills Prairie Meadows Sanitary District each month for the amount of wastewater treated by the City, and Prairie Meadows makes a monthly payment to the City. The payment is first applied to interest on any past due amount with the remaining amount then being applied to the usage charge. If the District's monthly payment to the City is less than the total of the monthly interest and the usage charge, the deficit is added to the past due amount. This means that even by paying the usage charge in full each month, the amount the District owes the City will steadily increase by the amount of the monthly interest charge. Since increasing the usage rates in January of 2014 from $60.00 to $100.00, Prairie Meadows has been able to pay down on its debt to the city.

A printout from the City of Sioux Falls is attached and shows how the payments are applied and what the balance is each month for the one year period ending on October 23, 2015. The District paid the City $80,000 during that time and usage charges were only $34,762.75, the amount the District owed to the City decreased by $32,833.19. At the end of 2012, the District had owed the City of Sioux Falls approximately $139,000. As of December 11, 2015, that amount has dropped to $86,716.54.

It is anticipated that the Prairie Meadows Sanitary District will be annexed into the City of Sioux Falls in the near future. At that time, the amount owed to the City will be assessed to the property owners in the district. For that reason, it is essential that the amount owed to the City continue to decrease before the annexation.

note: assume payments applied to the oldest transaction

Customer Number: 5034897

Account Number: 0000242149

Service Address: 0 PRAIRIE MEADOWS

Mailing Address:

PRAIRIE MEADOWS

MERLYN TIESZEN

8316 W 46TH ST

SIOUX FALLS SD 57106-6001

Account balance at 10/29/15 $94,511.76

Customer/Account Transaction History

Trans Date	Transaction	Amount	Billing	Late Fees	Payment
10/23/2015 0:00	Manual Billing Due: 11/13/2015	$3,233.16	$3,233.16		$ (6,000.00)
10/19/2015 0:00	Late Fee - Sewer	$903.75		$903.75	
9/25/2015 0:00	Manual Billing Due: 10/16/2015	$3,687.91	$3,687.91		$ (7,000.00)
9/15/2015 0:00	Late Fee - Sewer	$927.59		$927.56	
8/24/2015 0:00	Manual Billing Due: 09/14/2015	$4,036.41	$4,036.41		$ (7,000.00)
8/13/2015 0:00	Late Fee - Sewer	$947.75		$947.75	
7/21/2015 0:00	Manual Billing Due: 08/11/2015	$3,088.66	$3,088.66		$ (7,000.00)
7/15/2015 0:00	Late Fee - Sewer	$998.39		$998.39	
6/19/2015 0:00	Manual Billing Due: 07/10/2015	$1,881.66	$1,881.66		$ (6,000.00)
6/15/2015 0:00	Late Fee - Sewer	$998.39		$998.39	
5/21/2015 0:00	Manual Billing Due: 06/11/2015	$2,238.66	$2,238.66		$ (6,000.00)
5/18/2015 0:00	Late Fee - Sewer	$1,025.75		$1,025.75	
4/23/2015 0:00	Manual Billing Due: 05/14/2015	$1,966.66	$1,966.66		$ (6,000.00)
4/17/2015 0:00	Late Fee - Sewer	$1,055.53		$1,055.53	
3/27/2015 0:00	Manual Billing Due: 04/17/2015	$1,915.66	$1,915.66		$ (6,000.00)
3/18/2015 0:00	Late Fee - Sewer	$1,085.52		$1,085.52	
2/23/2015 0:00	Manual Billing Due: 03/16/2015	$4,066.16	$4,066.16		$ (6,000.00)
2/17/2015 0:00	Late Fee - Sewer	$1,054.31		$1,054.31	
1/22/2015 0:00	Manual Billing Due: 02/12/2015	$1,535.39	$1,535.39		$ (2,000.00)
1/14/2015 0:00	Late Fee - Sewer	$1,097.98		$1,097.98	
12/22/2014 0:00	Manual Billing Due: 01/12/2015	$1,820.10	$1,820.10		$ (7,000.00)
12/17/2014 0:00	Late Fee - Sewer	$1,138.39		$1,138.39	
11/24/2014 0:00	Manual Billing Due: 12/15/2014	$2,594.03	$2,594.03		$ (7,000.00)
11/14/2014 0:00	Late Fee - Sewer	$1,170.74		$1,170.74	
10/22/2014 0:00	Manual Billing Due: 11/12/2014	$2,698.29	$2,698.29		$ (7,000.00)
			$34,762.75	**$12,404.06**	**$ (80,000.00)**

Appendix B

Certification of Needs Categories, EPA Preaward Compliance Review, and Certification Regarding Debarment, Suspension and Other Responsibility Matters

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	Prairie Meadows Sanitary District

Project Name:	Wastewater Collection System Improvements

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: Ken Sutter

Printed Name: Ken Sutter

Title: President

Date: 12/22/15

Project Engineer

Signature: [illegible]

Printed Name: JON BROWN

License #: 6853

Date: 12-28-15

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	$1,388,000
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$1,388,000

Ken Sutter, President

Name & Title of Authorized Representative

Ken Sutter

Signature of Authorized Representative

12/22/15

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Ken Sutter, President

Name & Title of Authorized Representative

Ken Sutter

Signature of Authorized Representative

12/22/15

Date

☐ I am unable to certify to the above statements. Attached is my explanation

PRAIRIE MEADOWS SANITARY DISTRICT
RESOLUTION #_____

SUBMITTAL OF APPLICATIONS FOR INFRASTRUCTURE FINANCING

WHEREAS, Prairie Meadows Sanitary District has determined a need for the System Improvements project;

WHEREAS, financial assistance will be necessary to enable Prairie Meadows Sanitary District to construct this project; and

WHEREAS, the South Dakota Department of Environment and Natural Resources provides grants and low-interest loans to eligible applicants for financing water and wastewater infrastructure projects.

NOW THEREFORE BE IT RESOLVED THAT:

1. Prairie Meadows Sanitary District hereby authorizes the filing of a Small Community Planning Grant application, a State Water Plan application and grant and/or loan applications with the South Dakota Department of Environment and Natural Resources including all understandings and assurances contained therein, to fund its project.

2. Be it further resolved that Prairie Meadows Sanitary District hereby authorizes Ken Sutter, President, to act as Project Certifying Officer in connection with the applications, grant and/or loan agreements, and other required forms, and to provide such additional information as may be required by the South Dakota Department of Environment and Natural Resources.

Adopted this 7 day of November, 2011.

Ken Sutter
Ken Sutter, President

ATTEST:

Merlyn D Tieszen
Merlyn Tieszen, Treasurer

Official Seal:

Statement

Prairie Meadow Sanitary District
P. O. Box 89433
Sioux Falls, SD 57109

Phone 605-366-0667

Bill To
MERLYN & GLORIA TIESZEN 8316 W. 46TH STREET SIOUX FALLS, SD 57106

Date	Amount Due	Enclosed
12/01/15	$100.00	

Date	Description	Amount	Balance
11/01/15	Balance forward		100.00
11/07/15	PMT #1283	-100.00	0.00
12/01/15	INV #4709	100.00	100.00

Current	1-30 Days Past Due	31-60 Days Past Due	61-90 Days Past Due	OVER 90 Days Past Due	Amount Due
$100.00	$0.00	$0.00	$0.00	$0.00	$100.00

Transaction - 2013

1/1/2013 through 12/31/2013

12/15/2015

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
INCOME								**63,476.23**
DEPSIT_SANITARY								**63,476.23**
1/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,182.56
1/2/2013	SANITARY		DEPOSIT/S...		DEPSIT_SA...		R	1,736.34
2/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	3,722.86
3/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	3,951.12
4/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,604.81
5/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,005.28
6/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,709.60

Transaction - 2013

1/1/2013 through 12/31/2013

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
6/1/2013	SANITARY		DEPOSIT/S...	DAVE OLI...	DEPSIT_SA...		R	650.00
6/1/2013	SANITARY		DEPOSIT/S...	TAXES	DEPSIT_SA...		R	3,174.48
7/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,196.84
7/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	2,272.87
8/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,182.36
8/1/2013	SANITARY		DEPOSIT/S...		DEPSIT_SA...		R	385.69
9/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,035.92
10/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	5,020.96
11/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,120.48
11/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	313.83
12/1/2013	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	4,210.23
EXPENSES								**-64,585.87**
ACCONTING_SAN								**-3,375.00**
1/29/2013	SANITARY	2265	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
2/26/2013	SANITARY	2272	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
3/26/2013	SANITARY	2276	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
3/26/2013	SANITARY	2277	RUTH ANN ...	SPEICAL ...	ACCONTIN...		R	-50.00
4/16/2013	SANITARY	2284	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
5/28/2013	SANITARY	2287	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
6/25/2013	SANITARY	2295	RUTH ANN ...	INVOICE M...	ACCONTIN...		R	-225.00
7/23/2013	SANITARY	2310	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-225.00
8/27/2013	SANITARY	2314	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	0.00
				STARTED ...	ACCONTIN...		R	-350.00
9/24/2013	SANITARY	2325	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
10/22/2013	SANITARY	2351	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
11/26/2013	SANITARY	2556	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
12/17/2013	SANITARY	2561	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
MISE_SAN								**-3,878.70**
1/29/2013	SANITARY	2264	MERLYN TI...	MILEAGE ...	MISE_SAN		R	-30.16
1/29/2013	SANITARY	2269	KEN SUTTE...	MILEAGE ...	MISE_SAN		R	-30.16
1/29/2013	SANITARY	2270	BRIAN BRU...	REFUND O...	MISE_SAN		R	-348.50
2/11/2013	SANITARY	2271	MERLYN TI...	STAMPS (....	MISE_SAN		R	-9.00
4/16/2013	SANITARY	2281	MERLYN TI...	KUEHNE C...	MISE_SAN		R	-40.00
4/16/2013	SANITARY	2282	... MERLYN TI...	LABOR	MISE_SAN		R	-40.00
				MILEAGE	MISE_SAN		R	-239.20
				MEALS	MISE_SAN		R	-36.81
5/28/2013	SANITARY	2291	MERLYN TI...	MEETING ...	MISE_SAN		R	-40.00
5/28/2013	SANITARY	2292	KEN SUTTER	MEETING ...	MISE_SAN		R	-40.00
5/28/2013	SANITARY	2293	RUTH ANN ...	MEETING ...	MISE_SAN		R	-40.00
5/28/2013	SANITARY	2294	US POSTAL...	ONE YEAR	MISE_SAN		R	-88.00
6/25/2013	SANITARY	2302	MERLYN TI...	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2297	KEN SUTTER	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2298	RUTH ANN ...	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2299	MERLYN TI...	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2300	KEN SUTTER	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2301	RUTH ANN ...	MEETING ...	MISE_SAN		R	-40.00
6/25/2013	SANITARY	2305	DENNIS MA...	REFUND O...	MISE_SAN		R	-846.88

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
7/23/2013	SANITARY	2308	KEN SUTTER	MEETING ...	MISE_SAN		R	-40.00
7/23/2013	SANITARY	2309	RUTH ANN ...	MEETING ...	MISE_SAN		R	-40.00
7/23/2013	SANITARY	2307	MERLYN TI...	MEETING ...	MISE_SAN		R	-40.00
7/23/2013	SANITARY	2306	MERLYN TI...	STAMPS 2...	MISE_SAN		R	-9.20
8/27/2013	SANITARY	2315	MERLYN TI...	SECIAL M...	MISE_SAN		R	-40.00
8/27/2013	SANITARY	2316	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
8/27/2013	SANITARY	2317	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
8/27/2013	SANITARY	2322	MERLYN TI...	SECIAL M...	MISE_SAN		R	-40.00
8/27/2013	SANITARY	2323	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
8/27/2013	SANITARY	2324	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2326	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2327	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2328	MERLYN TI...	SECIAL M...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2329	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2330	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2331	MERLYN TI...	SECIAL M...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2332	RUTH ANN ...	MAILING O...	MISE_SAN		R	-142.39
9/24/2013	SANITARY	2333	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2334	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
9/24/2013	SANITARY	2335	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2339	KEN SUTTER	MEET ROL...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2340	RUTH ANN ...	MEET ROL...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2341	MERLYN TI...	MEET ROL...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2342	KEN SUTTER	SIGN PAP...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2343	RUTH ANN ...	SIGN PAP...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2344	RUTH ANN ...	TURN IN D...	MISE_SAN		R	-240.00
10/22/2013	SANITARY	2345	KEN SUTTER	FIRST REA...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2346	RUTH ANN ...	FIRST REA...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2347	MERLYN TI...	FIRST REA...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2348	KEN SUTTER	SECOND ...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2349	RUTH ANN ...	SECOND R...	MISE_SAN		R	-40.00
10/22/2013	SANITARY	2350	MERLYN TI...	SECOND R...	MISE_SAN		R	-40.00
11/26/2013	SANITARY	2557	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
11/26/2013	SANITARY	2558	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
11/26/2013	SANITARY	2559	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
12/17/2013	SANITARY	2562	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
12/17/2013	SANITARY	2563	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
12/17/2013	SANITARY	2564	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
12/17/2013	SANITARY	2567	MERLYN TI...	STAMPS 2 ...	MISE_SAN		R	-18.40
SAN - ATTORNEY								**-11,210.08**
1/29/2013	SANITARY	2266	FRIEBERG, ...		SAN - ATTO...		R	-3,627.76
2/26/2013	SANITARY	2275	FRIEBERG, ...		SAN - ATTO...		R	-754.37
3/26/2013	SANITARY	2280	FRIEBERG, ...		SAN - ATTO...		R	-129.00
4/16/2013	SANITARY	2286	FRIEBERG, ...		SAN - ATTO...		R	-1,005.52
5/28/2013	SANITARY	2289	FRIEBERG, ...		SAN - ATTO...		R	-340.00
6/25/2013	SANITARY	2303	FRIEBERG, ...		SAN - ATTO...		R	-1,335.33
7/23/2013	SANITARY	2313	FRIEBERG, ...		SAN - ATTO...		R	-1,632.00
8/27/2013	SANITARY	2318	FRIEBERG, ...	JULY 2013 ...	SAN - ATTO...		R	-425.00
8/27/2013	SANITARY	2321	ROLLYN SA...	JULY 31 - ...	SAN - ATTO...		R	-282.40
9/24/2013	SANITARY	2338	ROLLYN SA...	8/19/2013 ...	SAN - ATTO...		R	-1,005.70
10/22/2013	SANITARY	2354	ROLLYN SA...		SAN - ATTO...		R	-673.00
UTILITIES_SAN								**-46,122.09**

Transaction - 2013

1/1/2013 through 12/31/2013

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
1/29/2013	SANITARY	2267	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-10.48
1/29/2013	SANITARY	2268	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
2/26/2013	SANITARY	2273	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.34
2/26/2013	SANITARY	2274	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
3/26/2013	SANITARY	2278	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.34
3/26/2013	SANITARY	2279	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
4/16/2013	SANITARY	2283	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.24
4/16/2013	SANITARY	2285	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
5/28/2013	SANITARY	2288	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-10.19
5/28/2013	SANITARY	2290	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-3,000.00
6/25/2013	SANITARY	2296	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-8.77
6/25/2013	SANITARY	2304	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-3,000.00
7/23/2013	SANITARY	2311	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.82
7/23/2013	SANITARY	2312	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
8/27/2013	SANITARY	2319	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.83
8/27/2013	SANITARY	2320	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
9/24/2013	SANITARY	2337	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
9/24/2013	SANITARY	2336	XCEL ENER...	8/14/2013 ...	UTILITIES_...		R	-9.84
10/22/2013	SANITARY	2352	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.69
10/22/2013	SANITARY	2353	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-3,000.00
11/26/2013	SANITARY	2555	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.73
11/26/2013	SANITARY	2560	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-5,000.00
12/17/2013	SANITARY	2565	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.82
12/17/2013	SANITARY	2566	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-4,000.00
					OVERALL TOTAL			**-1,109.64**

Transaction - 2014

1/1/2014 through 12/31/2014

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
INCOME								**83,271.97**
DEPSIT_SANITARY								**83,271.97**
1/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	5,786.54
2/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,681.00
3/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,060.29
4/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,349.52
4/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	60.01
5/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,186.99
6/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,868.72
7/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,620.00
8/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,779.92
9/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,720.00
10/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,140.00
11/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	0.00
				$100.00	DEPSIT_SA...		R	6,390.00
12/1/2014	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00

Transaction - 2014

1/1/2014 through 12/31/2014

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,628.98
EXPENSES								**-82,482.46**
ACCONTING_SAN								**-4,200.00**
1/28/2014	SANITARY	2368	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
2/25/2014	SANITARY	2378	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
3/25/2014	SANITARY	2381	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
4/22/2014	SANITARY	2394	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
5/27/2014	SANITARY	2400	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
6/24/2014	SANITARY	2409	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
7/22/2014	SANITARY	2415	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
8/26/2014	SANITARY	2421	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
9/23/2014	SANITARY	2427	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
10/21/2014	SANITARY	2434	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
11/18/2014	SANITARY	2441	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
12/16/2014	SANITARY	2447	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
MISE_SAN								**-2,792.00**
1/28/2014	SANITARY	2370	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
1/28/2014	SANITARY	2369	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
1/28/2014	SANITARY	2371	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
1/28/2014	SANITARY	2372	MERLYN TI...	SPECIAL L...	MISE_SAN		R	-40.00
2/25/2014	SANITARY	2375	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
2/25/2014	SANITARY	2376	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
2/25/2014	SANITARY	2377	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2382	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2383	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2384	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2387	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2388	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2389	MERLYN TI...	SPECIAL ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2390	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2391	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
3/25/2014	SANITARY	2392	MERLYN TI...	SPECIAL ...	MISE_SAN		R	-40.00
4/22/2014	SANITARY	2395	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
4/22/2014	SANITARY	2397	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
4/22/2014	SANITARY	2396	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2403	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2405	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2401	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2402	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2404	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-40.00
5/27/2014	SANITARY	2408	RUTH ANN ...	POST OFF...	MISE_SAN		R	-92.00
6/24/2014	SANITARY	2412	KEN SUTTER	MEETING ...	MISE_SAN		R	-120.00
6/24/2014	SANITARY	2410	MERLYN TI...	MEETING ...	MISE_SAN		R	-120.00
6/24/2014	SANITARY	2411	RUTH ANN ...	MEETING ...	MISE_SAN		R	-120.00
7/22/2014	SANITARY	2417	KEN SUTTER	SPECIAL ...	MISE_SAN		R	-120.00
7/22/2014	SANITARY	2418	RUTH ANN ...	SPECIAL ...	MISE_SAN		R	-120.00
7/22/2014	SANITARY	2416	MERLYN TI...	SPECIAL ...	MISE_SAN		R	-120.00
8/26/2014	SANITARY	2424	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
8/26/2014	SANITARY	2422	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00

Transaction - 2014

1/1/2014 through 12/31/2014

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
8/26/2014	SANITARY	2423	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
9/23/2014	SANITARY	2429	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
9/23/2014	SANITARY	2428	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
9/23/2014	SANITARY	2430	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
10/21/2014	SANITARY	2438	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-80.00
10/21/2014	SANITARY	2436	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-80.00
10/21/2014	SANITARY	2437	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-80.00
10/21/2014	SANITARY	2435	RUTH ANN ...	TURN IN D...	MISE_SAN		R	-300.00
11/18/2014	SANITARY	2444	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
11/18/2014	SANITARY	2442	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
11/18/2014	SANITARY	2443	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
12/16/2014	SANITARY	2448	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
12/16/2014	SANITARY	2449	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
12/16/2014	SANITARY	2450	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
SAN - ATTORNEY								**-373.00**
3/25/2014	SANITARY	2393	ROLLYN SA...	MARCH	SAN - ATTO...		R	-373.00
UTILITIES_SAN								**-75,117.46**
1/28/2014	SANITARY	2373	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.73
1/28/2014	SANITARY	2374	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-5,000.00
2/25/2014	SANITARY	2379	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.77
2/25/2014	SANITARY	2380	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
3/25/2014	SANITARY	2385	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.77
3/25/2014	SANITARY	2386	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
4/22/2014	SANITARY	2399	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.76
4/22/2014	SANITARY	2398	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
5/27/2014	SANITARY	2406	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.76
5/27/2014	SANITARY	2407	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
6/24/2014	SANITARY	2413	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.87
6/24/2014	SANITARY	2414	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
7/22/2014	SANITARY	2419	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.80
7/22/2014	SANITARY	2420	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
8/26/2014	SANITARY	2425	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.81
8/26/2014	SANITARY	2426	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
9/23/2014	SANITARY	2431	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	0.00
9/23/2014	SANITARY	2432	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-7,000.00
9/23/2014	SANITARY	2433	XCEL ENER...	8-14 - 9-15	UTILITIES_...		R	-9.82
10/21/2014	SANITARY	2439	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.80
10/21/2014	SANITARY	2440	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-7,000.00
11/18/2014	SANITARY	2445	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.75
11/18/2014	SANITARY	2446	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-7,000.00
12/16/2014	SANITARY	2451	XCEL ENER...	11/12/2014	UTILITIES_...		R	-9.82
12/16/2014	SANITARY	2452	SIOUX FALL...	11/14	UTILITIES_...		R	-7,000.00
					OVERALL TOTAL			**789.51**

Transaction - YTD

1/1/2015 through 12/15/2015

12/15/2015

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
INCOME								**92,442.90**
DEPSIT_SANITARY								**92,442.90**
1/6/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,060.29
				CORRECTI...	DEPSIT_SA...		R	1,179.46
2/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,880.00
3/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,260.00
4/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,740.00
5/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,120.00
6/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,560.00

Transaction - YTD

1/1/2015 through 12/15/2015

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
6/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	2,710.91
7/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	7,120.00
7/1/2015	SANITARY		DEPOSITED		DEPSIT_SA...		R	699.27
8/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,940.00
8/31/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,680.00
9/30/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	4,121.10
10/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JANUARY ...	DEPSIT_SA...		R	0.00
				JUNE 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 2...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				JULY 1, 20...	DEPSIT_SA...		R	0.00
				MAY 1, 200...	DEPSIT_SA...		R	6,997.39
11/1/2015	SANITARY		DEPOSITED		DEPSIT_SA...		R	7,712.61
12/1/2015	SANITARY	S	DEPOSIT/S...	APRIL 1, 9...	DEPSIT_SA...			0.00
				JANUARY ...	DEPSIT_SA...			0.00

Transaction - YTD

1/1/2015 through 12/15/2015

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
				JANUARY ...	DEPSIT_SA...			0.00
				JUNE 1, 20...	DEPSIT_SA...			0.00
				JULY 1, 2...	DEPSIT_SA...			0.00
				JULY 1, 20...	DEPSIT_SA...			0.00
				JULY 1, 20...	DEPSIT_SA...			0.00
				MAY 1, 200...	DEPSIT_SA...			7,661.87
EXPENSES								**-85,053.00**
ACCONTING_SAN								**-3,850.00**
1/27/2015	SANITARY	2453	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
2/24/2015	SANITARY	2460	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
3/24/2015	SANITARY	2466	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
4/28/2015	SANITARY	2473	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
5/26/2015	SANITARY	2480	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
6/23/2015	SANITARY	2489	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
7/28/2015	SANITARY	2493	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
8/25/2015	SANITARY	2499	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
9/15/2015	SANITARY	2506	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
10/27/2015	SANITARY	2513	... RUTH ANN ...	STARTED ...	ACCONTIN...		R	-350.00
11/17/2015	SANITARY	2520	... RUTH ANN ...	STARTED ...	ACCONTIN...			-350.00
MISE_SAN								**-3,208.11**
1/27/2015	SANITARY	2454	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
1/27/2015	SANITARY	2455	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
1/27/2015	SANITARY	2456	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-80.00
2/24/2015	SANITARY	2463	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
2/24/2015	SANITARY	2462	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
2/24/2015	SANITARY	2461	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
3/24/2015	SANITARY	2467	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
3/24/2015	SANITARY	2468	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
3/24/2015	SANITARY	2469	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
4/28/2015	SANITARY	2474	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
4/28/2015	SANITARY	2475	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
4/28/2015	SANITARY	2476	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
4/28/2015	SANITARY	2472	STAMPS	.49 X 20 - $...	MISE_SAN		R	-19.60
5/26/2015	SANITARY	2479	RUTH ANN ...	POST OFF...	MISE_SAN		R	-92.00
5/26/2015	SANITARY	2481	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-80.00
5/26/2015	SANITARY	2482	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-80.00
5/26/2015	SANITARY	2486	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-80.00
5/26/2015	SANITARY	2487	... EDWARD B...	REFUND O...	MISE_SAN		R	-1,036.51
6/23/2015	SANITARY	2488	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-80.00
6/23/2015	SANITARY	2483	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-80.00
6/23/2015	SANITARY	2490	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-80.00
7/28/2015	SANITARY	2494	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
7/28/2015	SANITARY	2495	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
7/28/2015	SANITARY	2496	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
8/25/2015	SANITARY	2500	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-120.00
8/25/2015	SANITARY	2501	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-120.00
8/25/2015	SANITARY	2502	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-120.00
9/15/2015	SANITARY	2507	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
9/15/2015	SANITARY	2508	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00
9/15/2015	SANITARY	2509	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
10/27/2015	SANITARY	2514	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-40.00
10/27/2015	SANITARY	2515	KEN SUTTER	MONTHLY ...	MISE_SAN		R	-40.00

Transaction - YTD

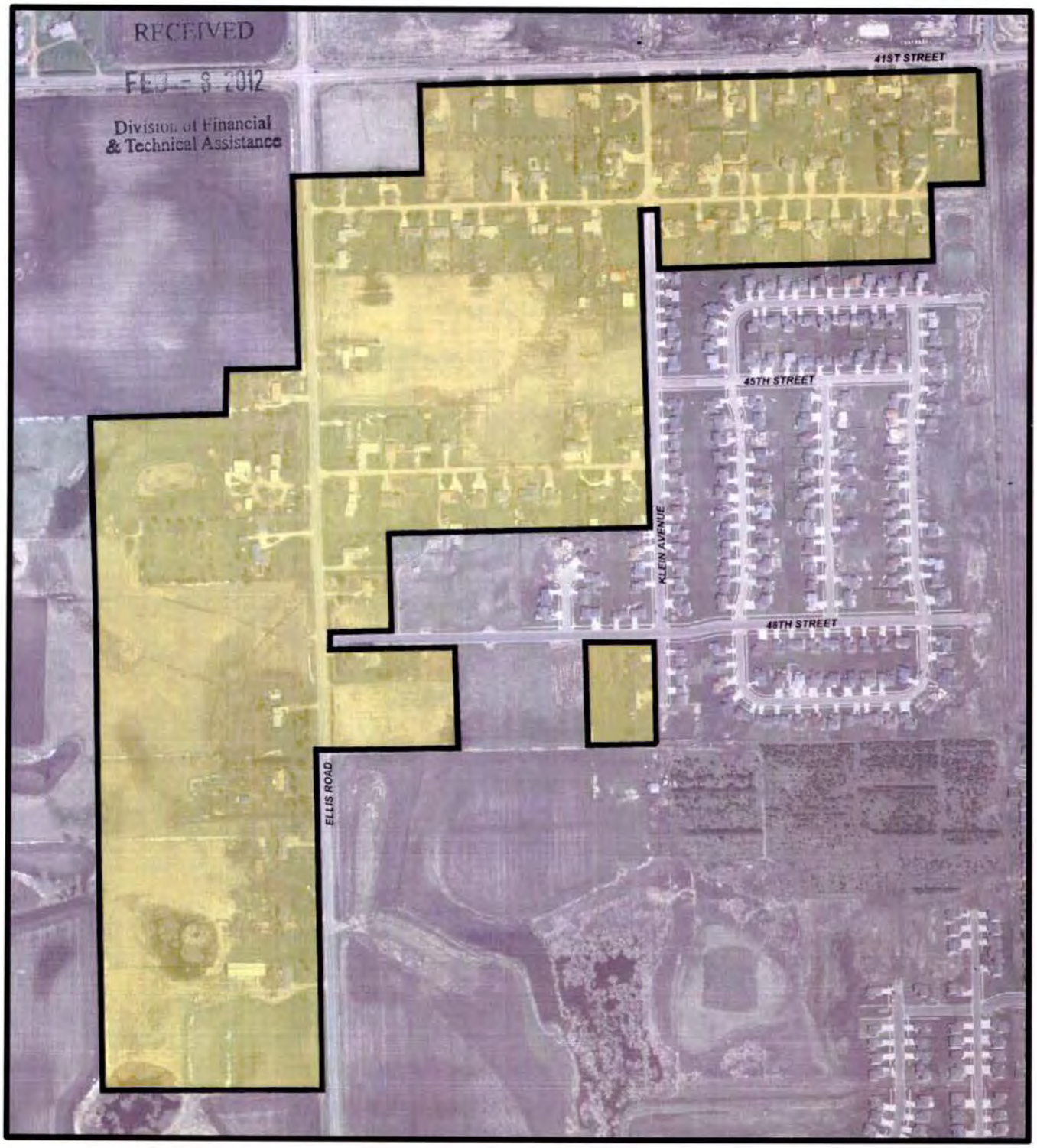
1/1/2015 through 12/15/2015

Date	Account	Num	Description	Memo	Category	Tag	Clr	Amount
10/27/2015	SANITARY	2516	RUTH ANN ...	MONTHLY ...	MISE_SAN		R	-40.00
10/27/2015	SANITARY	2519	RUTH ANN ...	TURNED I...	MISE_SAN		R	-180.00
11/17/2015	SANITARY	2521	MERLYN TI...	MONTHLY ...	MISE_SAN		R	-80.00
11/17/2015	SANITARY	2522	KEN SUTTER	MONTHLY ...	MISE_SAN			-40.00
11/17/2015	SANITARY	2523	RUTH ANN ...	MONTHLY ...	MISE_SAN			-40.00
SAN - ATTORNEY								**-11,880.45**
2/24/2015	SANITARY	2459	WOODS, FU...	ATTORNE...	SAN - ATTO...		R	-5,000.00
8/18/2015	SANITARY	2505	WOOD, FUL...		SAN - ATTO...		R	-4,027.50
9/15/2015	SANITARY	2512	WOOD, FUL...		SAN - ATTO...		R	-2,369.95
11/17/2015	SANITARY	2526	WOOD, FUL...		SAN - ATTO...		R	-483.00
UTILITIES_SAN								**-66,114.44**
1/27/2015	SANITARY	2458	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-10.83
1/27/2015	SANITARY	2457	SIOUX FALL...	11/14	UTILITIES_...		R	-7,000.00
2/24/2015	SANITARY	2465	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-2,000.00
2/24/2015	SANITARY	2464	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.61
3/24/2015	SANITARY	2470	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.58
3/24/2015	SANITARY	2471	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
4/28/2015	SANITARY	2477	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.58
4/28/2015	SANITARY	2478	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
5/26/2015	SANITARY	2484	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.59
5/26/2015	SANITARY	2485	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
6/23/2015	SANITARY	2491	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-11.62
6/23/2015	SANITARY	2492	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
7/28/2015	SANITARY	2497	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-10.36
7/28/2015	SANITARY	2498	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-6,000.00
8/25/2015	SANITARY	2503	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-5.87
8/25/2015	SANITARY	2504	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...		R	-7,000.00
9/15/2015	SANITARY	2510	XCEL ENER...		UTILITIES_...		R	-9.84
9/15/2015	SANITARY	2511	SIOUX FALL...		UTILITIES_...		R	-7,000.00
10/27/2015	SANITARY	2517	XCEL ENER...		UTILITIES_...		R	-9.80
10/27/2015	SANITARY	2518	SIOUX FALL...		UTILITIES_...		R	-7,000.00
11/17/2015	SANITARY	2524	... XCEL ENER...	ACC. 1118-...	UTILITIES_...		R	-9.76
11/17/2015	SANITARY	2525	... SIOUX FALL...	ACCOUNT ...	UTILITIES_...			-6,000.00
					OVERALL TOTAL			**7,389.90**

PRAIRIE MEADOWS SANITARY DISTRICT

SANITARY SEWER, WATER DISTRIBUTION AND COMPREHENSIVE MASTER DRAINAGE FACILITY PLAN

RECEIVED
FEB - 8 2012
Division of Financial
& Technical Assistance



STOCKWELL ENGINEERS
SIOUX FALLS, SD

January 2012

SANITARY SEWER

WATER DISTRIBUTION

AND

COMPREHENSIVE MASTER DRAINAGE FACILITY PLAN

FOR

THE

PRAIRIE MEADOWS SANITARY DISTRICT

JANUARY 2012

SEI NO. 9011, 9111 & 9211

I hereby certify that this report was prepared

by me or under my direct supervision and that

I am a duly Registered Professional Engineer

under the laws of the State of South Dakota.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
9236
GABRIEL G.
LABER
SOUTH DAKOTA
1/31/12

Gabriel G. Laber, P.E.

S.D. Registration No. 9236

STOCKWELL
ENGINEERS

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INTRODUCTION

PURPOSE OF STUDY

The Prairie Meadows Sanitary District contacted Stockwell Engineers, Inc. (SEI) to investigate their wastewater collection, water distribution and drainage systems. The Sanitary District would like to make improvements to the wastewater collection system, install their own water distribution system and improve drainage problems. This study identifies the deficiencies that the systems have based on the South Dakota Design Criteria Manual and the Criteria for Design of Public Water Supply Facilities in South Dakota and presents options to fix these deficiencies. All of the proposed system upgrades would be in accordance with City of Sioux Falls standards. Prairie Meadows Sanitary District will eventually be annexed into the City of Sioux Falls.

This Facility Plan is written to meet the requirements of the Small Community Planning Grant Program. The Prairie Meadows Sanitary District can use this plan to obtain grant and loan funding for the proposed improvements.

SCOPE OF STUDY

The scope of the agreement between the Prairie Meadows Sanitary District and SEI is a follows:

Wastewater Collection

1) Provide existing maps, plans, fund financial records and customer connections.
2) Provide data on existing and future conditions of the district.
3) Provide data on existing sewer.
4) Evaluate sanitary sewer collection based on sewer videos, determine infiltration and inflow rates and create map of existing collection system.
5) Outline need for improvements.
6) Make recommendations for improvements to meet future growth requirements.
7) Prepare "Engineers Estimate" of probable construction cost for the Project.
8) Draft letter to appropriate agencies to obtain environmental clearance.
9) Review and implement agency comments into project.
10) Present "draft" study at Board meeting.
11) Submit "draft" facility plan to DENR for review.
12) Address DENR comments.

13) Submit final study to South Eastern Council of Governments (SECOG), SD Department of Environment and Natural Resources and the district.

Water Distribution

1) Provide map of existing system, existing static and residual fire flow, existing rates and water purchase or production records.
2) Provide data on existing and future conditions of the district.
3) Provide data on existing water main.
4) Evaluate water distribution system to determine water loss, valve and hydrant spacing, pressure and fire flow.
5) Outline need for improvements.
6) Make recommendations for improvements to meet future growth requirements.
7) Prepare "Engineers Estimate" of probable construction cost for the Project.
8) Present "draft" study at Council meeting.
9) Draft letter to appropriate agencies to obtain environmental clearance.
10) Review and implement agency comments into project.
11) Present "draft" study at Board meeting.
12) Submit "draft" facility plan to DENR for review.
13) Address DENR comments.
14) Submit final study to South Eastern Council of Governments (SECOG), SD Department of Environment and Natural Resources and the district.

Comprehensive Master Drainage Plan

1) Perform necessary survey work of above ground features to establish storm sewer system.
2) Identify basin boundaries.
3) Establish present day land use, future growth areas and hydrologic soil group.
4) Identify major drainage ways and controlling structures.
5) Coordinate with property owners to identify drainage problem areas.
6) Develop a hydrologic model of each basin for the 5 and 100-year rainfall events.
7) Identify probable locations and approximate size for flood control detention facilities.
8) Develop hydraulic analysis for all major drainage ways.
9) Prepare Master Drainage Plan to include map of detention facilities, overall drainage map, map of individual basins, basin size and land use, inventory of major structures and maintenance plan.
10) Submit plan to Board and present at meeting.

DISTRICT INFORMATION

GENERAL

Prairie Meadows Sanitary District is located in south central Minnehaha County. Minnehaha County is located in southeastern South Dakota. Prairie Meadows Sanitary District is located on the southwest side of Sioux Falls at the intersection of County Highway148/41st Street and Ellis Road. The Sanitary District is Governed by a Board President, secretary and treasurer. The Sanitary District was established in 1976.

FINANCIAL STATISTICS

Based on the 2000 Census, Minnehaha County has a median household income of $42,566 compared to the state average of $35,282. The 2000 Census also reported that 5.0% of the families in Minnehaha County had incomes below the poverty level compared to the state average of 9.3%.

POPULATION STATISTICS

The sanitary district estimated the current population at 186 people. The district provided the historic number of connections and an assumed population per connection was used. The number of connections has increased since the district was established in 1976. There is still room available for additional housing. It is assumed that the population of the district will continue to increase until all the land in the district is developed. Prairie Meadows close proximity to Sioux Falls should fuel the continued growth. The 2000 census indicated that 11% of the people living in Minnehaha County were over the age of 65 compared to 13.6% for the State of South Dakota.

Table 1 Population Statistics

Year	Population	Connections
1976	104	37
1980	110	40
1990	120	45
2000	136	53
2010	186	78
2020 (proj)	200	80
2030 (proj)	294	85

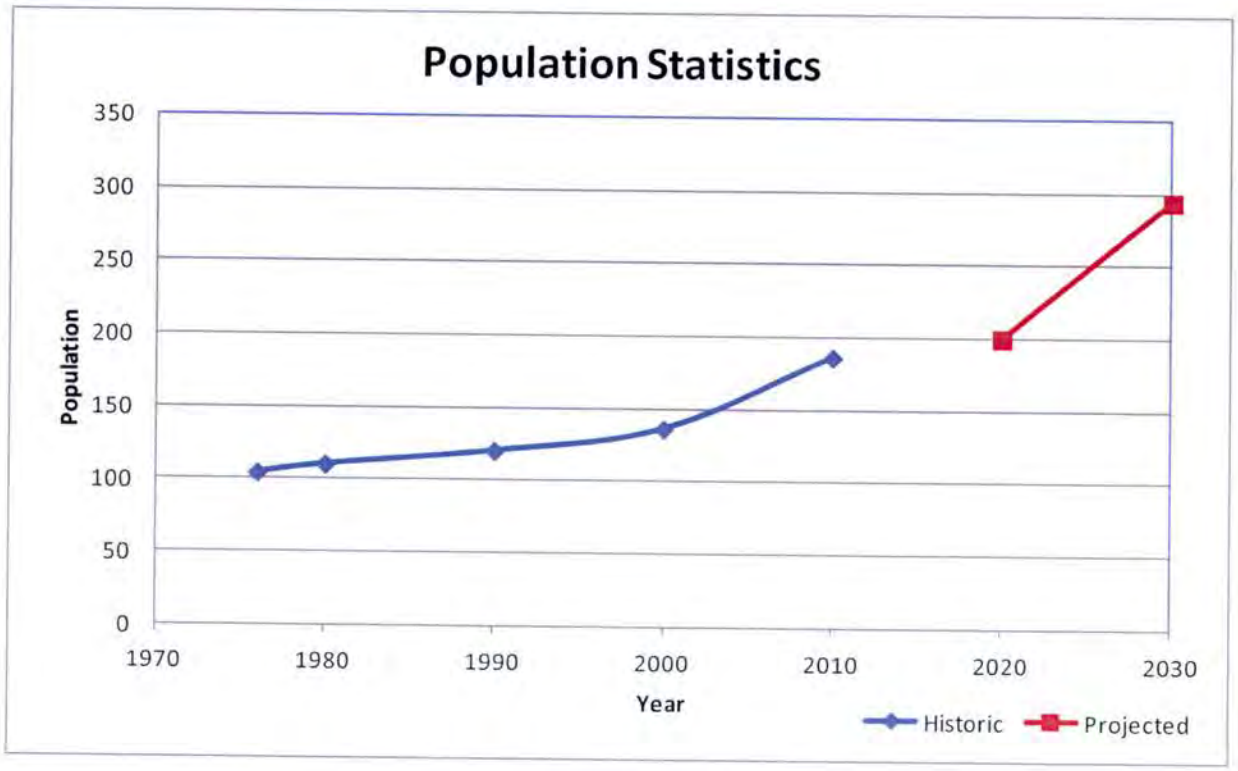


Figure 1 Population Statistics

ENVIRONMENTAL REVIEW

The Small Community Planning Grant requires an environmental review to be completed. The environmental review includes sending comment letters to the agencies listed below. These agencies are asked to determine if the proposed construction will have any adverse affect on the environment. The proposed construction would be replacing existing lines and constructing new lines in areas that have already been disturbed and therefore no adverse impacts are anticipated due to the site being previous disturbed.

HISTORICAL AND ARCHAEOLOGICAL SITES

The State Historical Preservation Office will be contacted for their comments on the proposed construction affecting historic and archaeological sites. Their comments will be placed in Appendix B upon receipt.

FLOODPLAINS AND WETLANDS

The U.S. Army Corps of Engineers will be contacted for their comments on the proposed construction affecting floodplains and wetlands. The U.S. Fish and Wildlife Service and the South

Dakota Game Fish and Parks will be contacted for their comments on the proposed construction affecting wetlands. All comments will be placed in Appendix B upon receipt.

AGRICULTURAL LANDS

The U.S. Department of Agriculture will be contacted for their comments on the proposed construction affecting prime farmland. Their comments will be placed in Appendix B upon receipt.

WILD AND SCENIC RIVERS

There are no wild and scenic rivers in the area. Therefore no comments will be requested.

FISH AND WILDLIFE PROTECTION

The U.S. Fish and Wildlife Service and the South Dakota Game Fish and Parks will be contacted for their comments on the proposed construction affecting fish and wildlife protection. Their comments will be placed in Appendix B upon receipt.

WATER QUALITY AND QUANTITY

The South Dakota Department of Environment and Natural Resources will be contacted for their comments on the proposed construction affecting water quality and quantity. Their comments will be placed in Appendix B upon receipt.

DIRECT AND INDIRECT IMPACTS

With any construction project there are going to be direct and indirect impacts. These impacts include noise pollution, lack of access and traffic congestion. These impacts will only occur during the construction period. The benefits of the improvements outweigh these temporary impacts.

MITIGATING ADVERSE IMPACTS

Adverse impacts from the construction will be mitigated as much as possible. The construction documents will include plans to mitigate any potential impacts. All comments from review agencies for mitigating adverse impacts will be included in the construction plans.

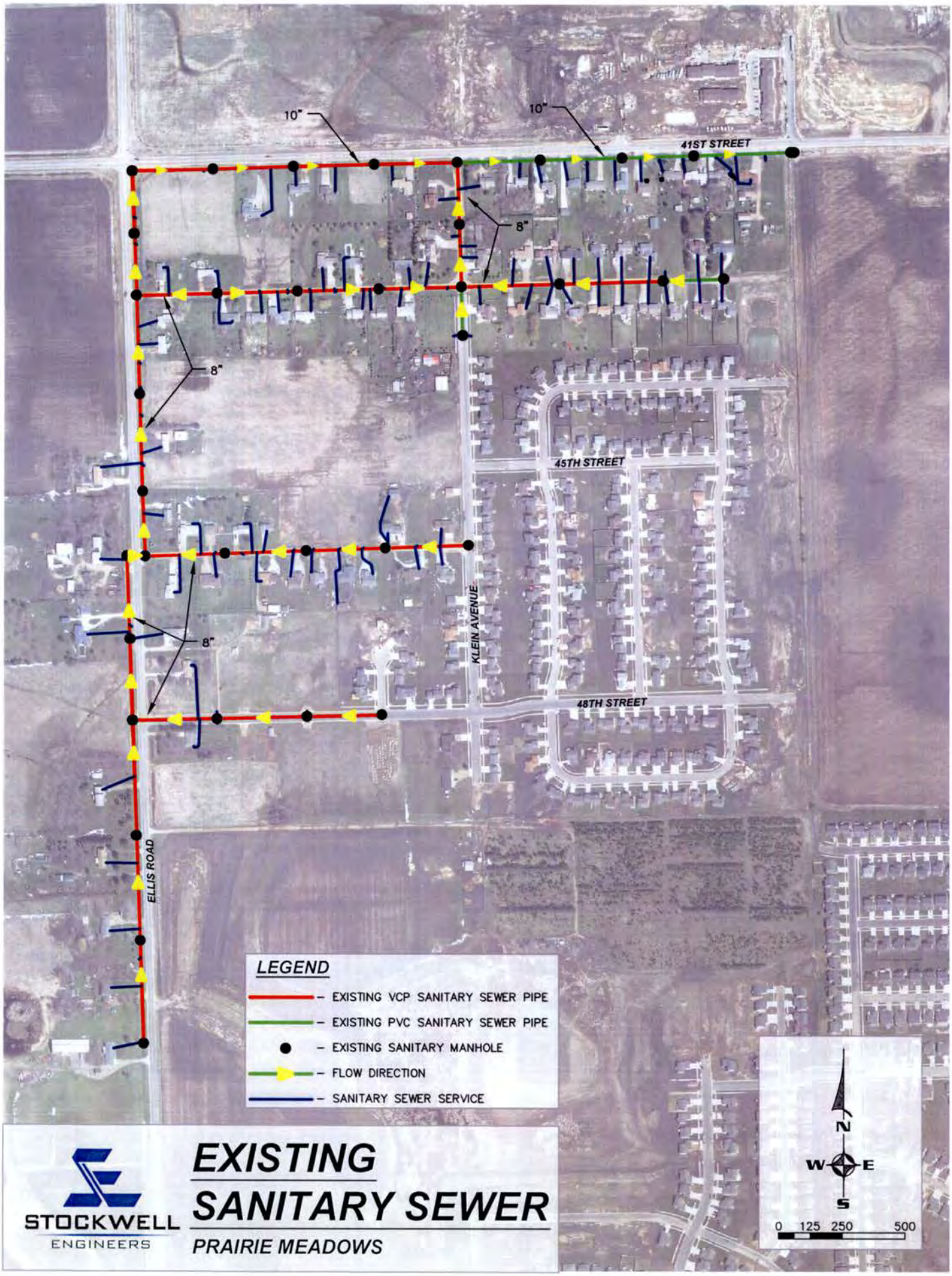
WASTEWATER SYSTEM

GENERAL COLLECTION SYSTEM

Prairie Meadow's collection system was constructed in 1976. It consists of 8,400 ft of 8-inch vitrified clay pipe (VCP), 1,300 ft of 10-inch VCP, 430 of 8-inch polyvinyl chloride pipe (PVC), 1,400 ft of 10-inch PVC and 35 manholes. There are currently 78 users connected to the system with an estimated 5,500 ft of service line. Every customer is connected to the collection system and there are no septic tanks in the district limits. The existing system is shown in Figure 3.

The original collection system included a lift station at the intersection of 41st Street and Klein Avenue. The lift station pumped east to a manhole west of the Holbrook Avenue intersection. In 1994 a new gravity sewer line was installed and the lift station was abandoned. A flow monitor was added to the manhole at Grinnell Aveneue that Prairie Meadows discharges into. The City of Sioux Falls uses the flow monitor to charge Prairie Meadows each month. The lift station has not been removed and is shown in the figure below.

Figure 2 Abandoned Lift Station



STOCKWELL ENGINEERS

EXISTING SANITARY SEWER

PRAIRIE MEADOWS

CLEANING AND TELEVISING

In July of 2009 the City of Sioux Falls televised the entire collection system. The televising revealed several deficiencies in the collection system. These deficiencies include sags, cracks, infiltration at service connections and manholes and mineral deposits. Pictures of the deficiencies are shown below. Copies of the reports from the televising are located in Appendix A.

Figure 4 Infiltration at Service

Figure 5 Mineral Deposits at Service

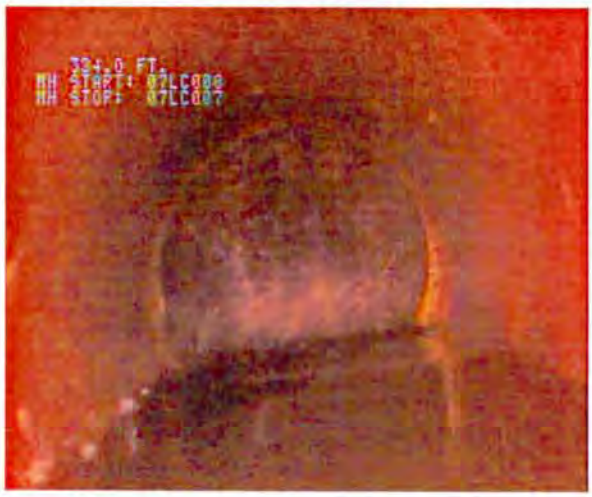


Figure 6 Infiltration in Manhole

WASTEWATER FLOWS

The wastewater flows in a collection system are comprised of domestic water and clear water. Domestic flow comes from homes and businesses. Clear water comes from rain water and ground water. Clear water is also called infiltration and inflow (I&I). Infiltration is ground water leaking through joints, cracks in the pipe and manhole walls. Inflow is sump pumps, roof drains, perforated manhole covers and storm sewer that are connected to the sanitary collection system. Every system is subject to some level of I&I. Sewage backups and flooding of basements are consequences when I&I becomes excessive.

Domestic wastewater flow can be determined using water use records. The SD Design Criteria states that project wastewater flows for a community could be calculated by using 80% of the actual water consumption. This is typically applied to the winter months of December, January and February. These months are used because there is little water usage that does not reach the collection system. The residents of Prairie Meadows are billed directly for their water usage from Minnehaha Community Water Corp. Based on Minnehaha's records the residents of Prairie Meadows use an average of 8,560 gallons per day (gpd). However, there is one connection that utilizes a well and nine connections that Minnehaha CWC didn't provide information for. It is assumed that 100 gpd is added per connection for a total water usage of 9,560 gpd. During these winter months it can be assumed that 100% of the metered water at the homes reaches the collection system.

Based on the billed water records from Minnehaha, the average daily flow is 52 gallons per capita per day (gpcpd) in the winter months. Chapter I.C.2 of the SD Design Criteria states that an alternate method to determine design capacity could be justified by local water consumption records but shall not be less than 60 gpcpd.

Since the lift station was abandoned in 1994, Prairie Meadows has been billed by the total gallons they discharge into the City of Sioux Falls collection system. The flow recording records were provide by Prairie Meadows. During the same period that billed water records was provided, the average wastewater flow was 30,809 gpd. This results in a average infiltration flow rate of 21,249 gpd (30,809 gpd - 9,560 gpd).

Typically infiltration is considered constant during the winter months because the ground is frozen and the water table is stable. During the summer months wet periods and dry periods can affect the ground water table. As the ground water table rises, more of the collection system is submerged and therefore the amount of infiltration increases. The higher the groundwater table, the higher the pressure is on the sewer, forcing more water into the system. In the case of Prairie Meadows, the flow monitoring records show how rainfall and wet periods increase the wastewater flow. Wastewater flow records from 1998 to present are shown in Appendix C. Flow records from 2011 are shown in the figure below.

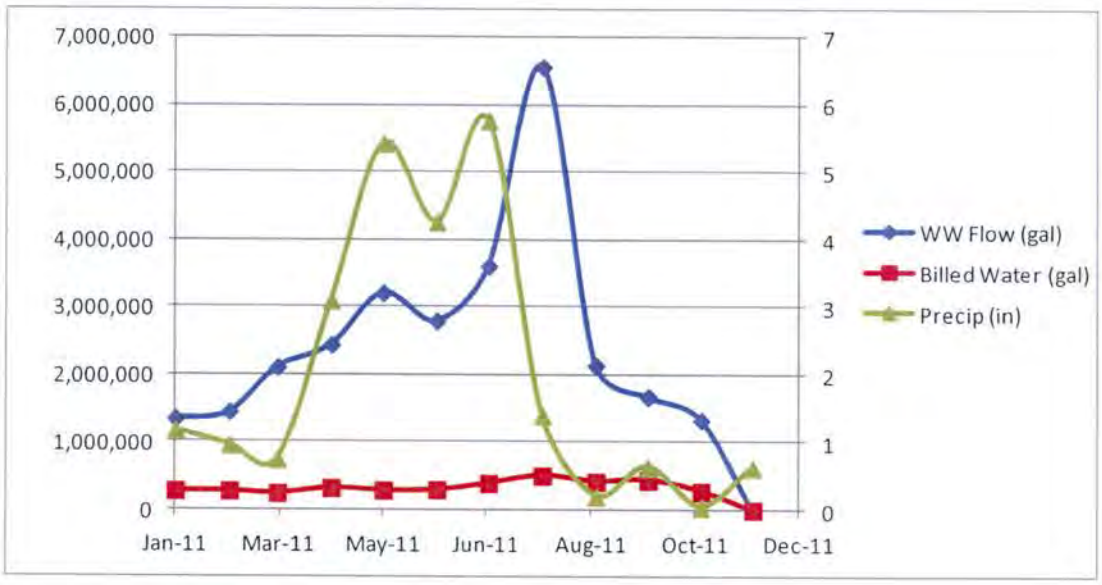


Figure 7 2011 Wastewater Flow

The SD Design Criteria Manual states in section I.C.2 that the design allowance for a sewer system shall be 200 gallons per inch of pipe diameter per mile of pipe per day. Current practice recommends an allowance for PVC of 50 gallons per inch of pipe diameter per mile of pipe per day. Based on this allowance, Prairie Meadow's collection system can have a maximum infiltration rate of 4,013 gpd which is substantially lower than the measured infiltration of 21,249 gpd.

Table 2 Allowable Collection System Infiltration

Sanitary Sewer Dia (in)	Pipe Type	Length (ft)	Diameter-Length (in-mile)	Allowable Infiltration (gpd)
4	Clay	5,460	4.1	827
8	Clay	8,371	12.7	2,537
10	Clay	1,291	2.4	489
8	PVC	432	0.7	33
10	PVC	1,348	2.6	128
			Total =	4,013

The Environmental Protection Agency (EPA) has established guidance to determine dry weather flow and wet weather flow. The dry weather flow is 120 gpcpd and the wet weather flow is 275 gpcpd. Wastewater flows over these amounts are considered excessive. The dry weather period is during the winter months when the collection system is subject to domestic flow and infiltration. The wet weather period is during the summer when the collection system is subject to domestic, infiltration and inflow. Based on these limits Prairie Meadows should not experience flows over 22,320 gpd (120 x 186) during December, January and February. The wet weather flows should not exceed 51,150 gpd (275 x 186). The dry weather flow was exceeded for 25 months and the wet weather flow was exceeded for 50 months during the study period based on the flow monitor recordings.

FUTURE CONDITIONS

Population and connection information for the Prairie Meadows is shown in the District Information Section. Based on that information it is anticipated that the population will show a small increase. The District is land locked on the north, east and south sides by the City of Sioux Falls. Future improvements to the collection system will help to reduce the amount of I&I that the current system is experiencing. This will reduce the total flow to the City of Sioux Falls and reduce the monthly charge.

DEVELOPMENT OF WASTEWATER ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

Each of the following alternatives includes an estimate of the total project cost. Included in the total project cost are the construction cost, contingencies, legal and administration, engineering and testing. It should be noted that these are only estimates and by no means a guarantee of the actual construction costs. Actual field measurements will be taken during the design phase to complete a more accurate estimate. Contract prices can be affected by project location, contractor work load, project size, contract time and the time of year that the project is built. These estimates should be updated on a yearly basis to reflect current industry conditions.

EQUIVALENT UNIFORM ANNUAL COST

When choosing the most cost effective solution to a problem, you have to consider the initial cost and the long term cost. The alternative with the cheapest initial cost may not be the cheapest alternative when operation and maintenance cost are taken into account. The capital cost and equivalent uniform annual cost (EUAC) are both provided for all of the alternatives. The EUAC is evaluated over 20 years and an interest rate of 3.0% to provide the long term costs. The salvage value at the end of 20 years will be 0% or 60%. The EUAC will provide the owner with the best long term solution.

WASTEWATER COLLECTION ALTERNATIVES

The following alternatives were developed to correct the deficiencies listed below:

1) The VCP has cracks and minor sags.
2) Service connection are showing signs of infiltration.
3) There are manholes with infiltration.
4) I&I is excessive.

COLLECTION SYSTEM ALTERNATIVE 1: DO NOTHING

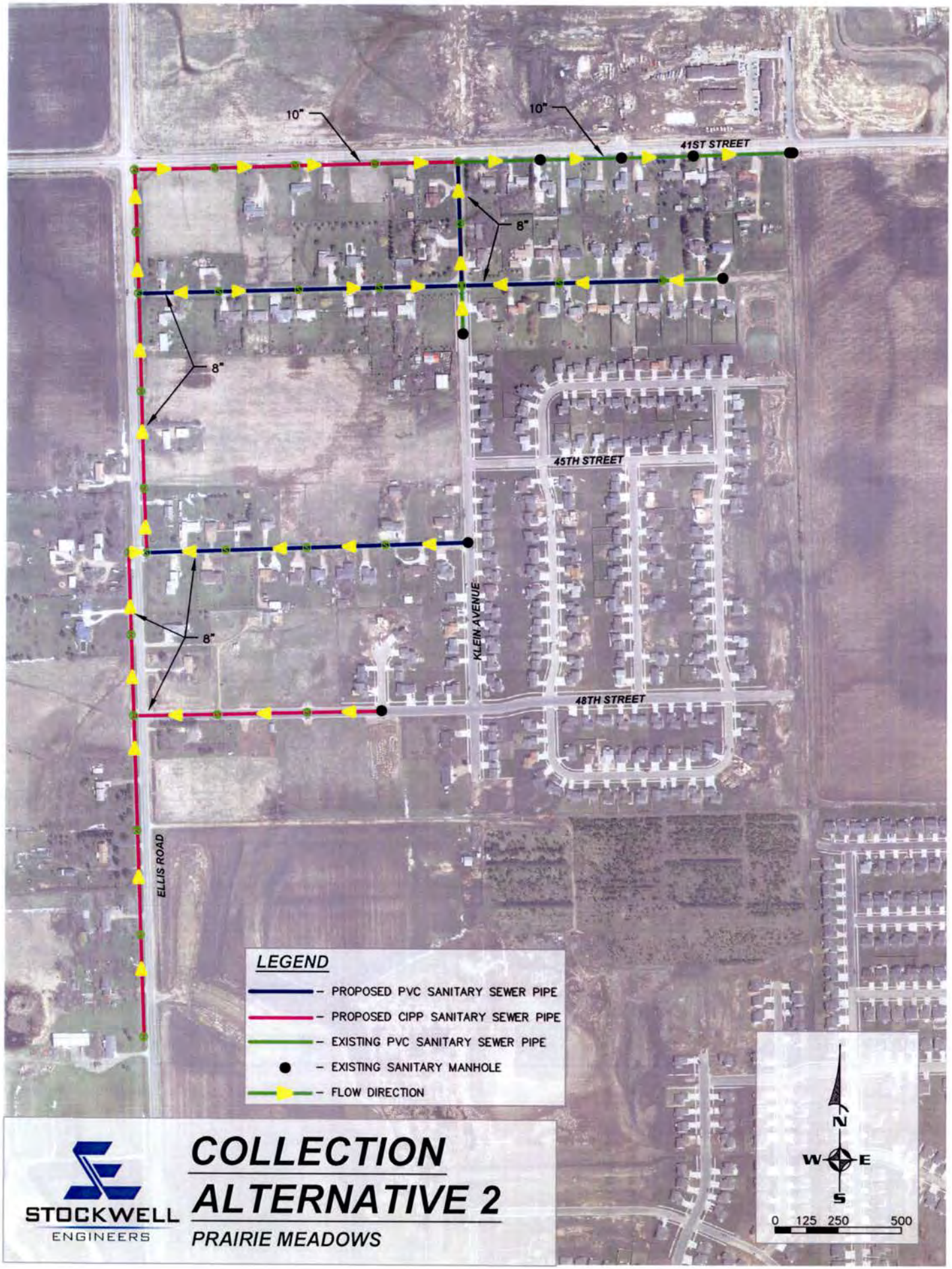
The first collection alternative is the "do nothing" alternative. This alternative is not considered acceptable because it will not address the negative deficiencies.

COLLECTION SYSTEM ALTERNATIVE 2: REHABILITATE VCP

Collection System Alternative 2 recommends rehabilitation of all the VCP with PVC and cured-in-place-pipe (CIPP). The service lines would be replaced to the property line and potentially to the house. The service lines on 41st Street between Grinnell Avenue and Klein Avenue would also be

replaced. The main is PVC in this area but the televising revealed service connections that have infiltration. The televising revealed several other deficiencies in the current system. The largest concern is the extreme amount of I&I. This I&I is increasing the amount that the City of Sioux Falls charges Prairie Meadows.

The video also revealed cracks in the existing pipe which are structural problems that could lead to failure of the pipe. Rehabilitation of the VCP would eliminate the problems that were discovered during the televising. The sanitary sewer under 48th Street is VCP and the street was built in 2006. Therefore, the VCP will be lined on this street. Lining creates one continuous pipe with no joints and the only opening is at the service connections. Manholes will be replaced if PVC is installed and lined along the CIPP sections. The cost estimate for this alternative is shown in the following table.



STOCKWELL ENGINEERS

COLLECTION ALTERNATIVE 2

PRAIRIE MEADOWS

Table 3 Cost Estimate for Collection System Alternative 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$45,000.00	$45,000.00
2	Clearing	1	LS	$2,000.00	$2,000.00
3	Remove Sewer Pipe	4,000	FT	$4.00	$16,000.00
4	Remove Asphalt Concrete	150	SY	$4.00	$600.00
5	Remove Existing Manhole	14	EA	$400.00	$5,600.00
6	Full Depth Saw Cut	180	FT	$5.00	$900.00
7	Unclassified Excavation	5,700	CY	$6.00	$34,200.00
8	Scarify & Recompact Subgrade	16,900	SY	$1.00	$16,900.00
9	Sanitary Sewer Manhole	14	EA	$3,000.00	$42,000.00
10	Reline Sanitary Sewer Manhole	180	VF	$180.00	$32,400.00
11	4" PVC Sanitary Service Line	2,500	FT	$20.00	$50,000.00
12	4" PVC Sanitary Service Line (Private)	2,500	FT	$23.00	$57,500.00
13	8" PVC Sanitary Sewer Pipe	4,000	FT	$30.00	$120,000.00
14	8" CIPP Liner	4,500	FT	$26.00	$117,000.00
15	10" CIPP Liner	1,300	FT	$29.00	$37,700.00
16	8" Sanitary Sewer Pipe Bedding Material	4,000	FT	$5.00	$20,000.00
17	8" x 4" Sewer Wye	63	FT	$200.00	$12,600.00
18	10" x 4" Sewer Wye	4	EA	$200.00	$800.00
19	4" Sewer Fittings	230	EA	$100.00	$23,000.00
20	Cleanout	74	EA	$500.00	$37,000.00
21	Reconnect Sewer Service	74	EA	$250.00	$18,500.00
22	Open CIPP Service	23	EA	$150.00	$3,450.00
23	Salvage & Place Topsoil	3,400	CY	$5.00	$17,000.00
24	Aggregate Base Course (12")	11,100	TON	$15.00	$166,500.00
25	Asphalt Concrete Composite (4")	40	TON	$100.00	$4,000.00
26	Traffic Control	1	LS	$5,000.00	$5,000.00
27	Seeding, Fertilizing & Mulching	20,000	SY	$1.50	$30,000.00
28	Erosion Control	1	LS	$5,000.00	$5,000.00
29	Bypass Pumping	1	LS	$5,000.00	$5,000.00
30	Trench Dewatering	1	LS	$5,000.00	$5,000.00
				Subtotal	$930,650.00
			Contingencies (10%)		$94,000.00
			Total Estimated Construction Costs		**$1,024,650.00**
			ENGINEERING		**$164,000.00**
			LEGAL, ADMINISTRATION & TESTING (4%)		**$41,000.00**
			TOTAL ESTIMATED PROJECT COST		**$1,229,650.00**

Table 4 EUAC for Collection System Alternative 2

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$45,000.00	$0.00	$0.00	$45,000.00
Clearing	$2,000.00	$0.00	$0.00	$2,000.00
Remove Sewer Pipe	$16,000.00	$0.00	$0.00	$16,000.00
Remove Asphalt Concrete	$600.00	$0.00	$0.00	$600.00
Remove Existing Manhole	$5,600.00	$0.00	$0.00	$5,600.00
Full Depth Saw Cut	$900.00	$0.00	$0.00	$900.00
Unclassified Excavation	$34,200.00	$0.00	$0.00	$34,200.00
Scarify & Recompact Subgrade	$16,900.00	$0.00	$0.00	$16,900.00
Sanitary Sewer Manhole	$42,000.00	$25,200.00	$13,952.63	$28,047.37
Reline Sanitary Sewer Manhole	$32,400.00	$19,440.00	$10,763.46	$21,636.54
4" PVC Sanitary Service Line	$50,000.00	$30,000.00	$16,610.27	$33,389.73
4" PVC Sanitary Service Line (Private)	$57,500.00	$34,500.00	$19,101.81	$38,398.19
8" PVC Sanitary Sewer Pipe	$120,000.00	$72,000.00	$39,864.65	$80,135.35
8" CIPP Liner	$117,000.00	$70,200.00	$38,868.04	$78,131.96
10" CIPP Liner	$37,700.00	$22,620.00	$12,524.15	$25,175.85
8" Sanitary Sewer Pipe Bedding Material	$20,000.00	$12,000.00	$6,644.11	$13,355.89
8" x 4" Sewer Wye	$12,600.00	$7,560.00	$4,185.79	$8,414.21
10" x 4" Sewer Wye	$800.00	$480.00	$265.76	$534.24
4" Sewer Fittings	$23,000.00	$13,800.00	$7,640.73	$15,359.27
Cleanout	$37,000.00	$22,200.00	$12,291.60	$24,708.40
Reconnect Sewer Service	$18,500.00	$0.00	$0.00	$18,500.00
Open CIPP Service	$3,450.00	$0.00	$0.00	$3,450.00
Salvage & Place Topsoil	$17,000.00	$0.00	$0.00	$17,000.00
Aggregate Base Course (12")	$166,500.00	$99,900.00	$55,312.21	$111,187.79
Asphalt Concrete Composite (4")	$4,000.00	$2,400.00	$1,328.82	$2,671.18
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Seeding, Fertilizing & Mulching	$30,000.00	$0.00	$0.00	$30,000.00
Erosion Control	$5,000.00	$0.00	$0.00	$5,000.00
Bypass Pumping	$5,000.00	$0.00	$0.00	$5,000.00
Trench Dewatering	$5,000.00	$0.00	$0.00	$5,000.00
Remaining Capital Costs	$299,000.00	$0.00	$0.00	$299,000.00
Total Construction Cost	**$1,229,650.00**	**$432,300.00**	**$239,354.03**	**$990,295.97**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$500.00			$7,438.74
Supplies	$500.00			$7,438.74
Utilities	$0.00			$0.00
Labor	$2,500.00			$37,193.69
Total Annual Cost	**$3,500.00**			**$52,071.16**
			Total Net Present Worth	**$1,042,367.13**
			EUAC	**$70,063.44**

COLLECTION SYSTEM ALTERNATIVE 3: INSPECTION

Collection System Alternative 3 recommends the District Board Members complete work on their own to try to reduce the excessive I&I. This alternative includes inspecting the homes to determine if they have sump pumps and if those sump pumps are connected to the collection system. Sump pumps could be a significant cause of the I&I. If the homes do not have sump pumps then it is possible the foundation drains are connected directly to the sanitary service. The District could hire a plumber to televise the sanitary service lines to determine if foundation drains are connected to the sewer service. This alternative also recommends the District verify the calibration of the flow meter.

SELECTION OF WASTEWATER ALTERNATIVES

WASTEWATER COLLECTION

Collection System Alternative 1 "Do Nothing" is not acceptable because it will not address the I&I problem.

Collection System Alternative 2 "Rehabilitate VCP" is recommended because it will address the negative deficiencies. This alternative will also reduce the amount of I&I the system is experiencing and bring the system up to current standard for being annexed into the City of Sioux Falls.

Collection System Alternative 3 "Inspection" is recommended because this is a low cost option that could have a big impact in reducing that amount of I&I.

IMPACT ON THE OWNER'S BUDGET

A summary of the costs for the recommended alternatives are shown in Table 5.

Table 5 Recommended Alternatives

Collection System Alternative 2 "Rehabilitate VCP":	$1,229,650.00
Collection System Alternative 3 "Inspection":	$0.00
Combined Project Cost	**$1,229,650.00**

Prairie Meadows provided SEI their sewer revenue and expenses for the last two years. SEI evaluated the budget and the cost of the recommended alternatives to determine how Prairie Meadows could fund the project. Based on Prairie Meadow's current revenue and expenses, they will have to obtain grant and loan dollars from various funding agencies to finance the project. The loan is based on an interest rate of 3.0% over 20 years. The owner's sewer fees will be used to make the loan payments. The current monthly sewer rate is a flat fee of $60. It should be noted that if Prairie Meadows is ever annexed into the City of Sioux Falls the current charge for sewer is a base charge of $3.05 and a usage charge of $2.87 per hundred cubic feet of billed water.

Table 6 Funding Proposed Improvements

Revenue	$56,160.00
Expenses	$106,185.02
Current Debt Payment	$0.00
Short Lived Asset Replacement	$0.00
Net Cash From Operations	**-$50,025.02**
New Loan Payment	$82,651.79
Debt Reserves (10%)	$8,265.18
Net Fund Balance	**-$140,941.99**
Monthly Rate Increase	$152.00
Number of Customers	78
Annual Revenue Generated	$142,272.00
Fund Balance After Increase	**$1,330.01**

The above table shows that Prairie Meadows would have to increase their sewer rates substantially to fund the project. The current expenses are putting the Sanitary District further is debt each month. The City of Sioux Falls charges Prairie Meadows $3.36 per 1,000 gallons of wastewater. The calculated I&I during the winter months was determined to be three to four times more than their water usage. During the summer time the I&I is even higher. The annual expenses in the table above could be reduced to $16,000 if Prairie Meadows was only charged for 100% of their domestic water purchased. Obviously it is impossible to have a system with zero I&I but the difference between the two charges is substantial. The revised financial table below shows what would happen if the I&I was reduced by 75%.

Table 7 Revised Funding Proposed Improvements

Revenue	$56,160.00
Expenses	$25,081.68
Current Debt Payment	$0.00
Short Lived Asset Replacement	$0.00
Net Cash From Operations	**$31,078.32**
New Loan Payment	$82,651.79
Debt Reserves (10%)	$8,265.18
Net Fund Balance	**-$59,838.65**
Monthly Rate Increase	$64.00
Number of Customers	78
Annual Revenue Generated	$59,904.00
Fund Balance After Increase	**$65.35**

The District will try to obtain grant dollars to reduce the loan amount. In order to be eligible for grant dollars the DENR has required a minimum monthly water rate of $25 for 5,000 gallons. Prairie Meadows currently meets this requirement.

The District could also apply for a grant and loan from Rural Development. The current interest rate from Rural Development is 3.75% for 40 years. Prairie Meadows would also have to raise their rates substantially with this funding source. This funding source also requires that the owner plan for any equipment replacement that may occur in the future. Prairie Meadows does not have any equipment replacement to plan for because their system is all gravity piping. The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table. These rates are based on no reduction in I&I.

Table 8 Potential Grant/Loan Amounts

Grant/Loan	90/10	80/20	70/30	60/40	50/50	40/60	30/70
Expenses	$106,185	$106,185	$106,185	$106,185	$106,185	$106,185	$106,185
Current Debt	$0	$0	$0	$0	$0	$0	$0
Short Lived Assetts	$0	$0	$0	$0	$0	$0	$0
Project Cost	$1,229,650	$1,229,650	$1,229,650	$1,229,650	$1,229,650	$1,229,650	$1,229,650
Grant Amount	$1,106,685	$983,720	$860,755	$737,790	$614,825	$491,860	$368,895
Loan Amount	$122,965	$245,930	$368,895	$491,860	$614,825	$737,790	$860,755
Annual Loan Payment	$8,265	$16,530	$24,796	$33,061	$41,326	$49,591	$57,856
Debt Reserves	$827	$1,653	$2,480	$3,306	$4,133	$4,959	$5,786
Total Annual Cost	$115,277	$124,368	$133,460	$142,552	$151,644	$160,735	$169,827
Revenue	$56,160	$56,160	$56,160	$56,160	$56,160	$56,160	$56,160
Balance After Project	-$59,117	-$68,208	-$77,300	-$86,392	-$95,484	-$104,575	-$113,667
Minimum Rate Increase	$63.16	$72.87	$82.59	$92.30	$102.01	$111.73	$121.44
Current Rate (5,000 gal)	$60.00	$60.00	$60.00	$60.00	$60.00	$60.00	$60.00
Proposed Monthly Rate	$123.16	$132.87	$142.59	$152.30	$162.01	$171.73	$181.44

The revised grant/loan table below assumes the I&I can be reduced by 75%.

Table 9 Revised Potential Grant/Loan Amounts

Grant/Loan	70/30	60/40	50/50	40/60	30/70	20/80
Expenses	$25,388	$25,388	$25,388	$25,388	$25,388	$25,388
Current Debt	$0	$0	$0	$0	$0	$0
Short Lived Assetts	$0	$0	$0	$0	$0	$0
Project Cost	$1,229,650	$1,229,650	$1,229,650	$1,229,650	$1,229,650	$1,229,650
Grant Amount	$860,755	$737,790	$614,825	$491,860	$368,895	$245,930
Loan Amount	$368,895	$491,860	$614,825	$737,790	$860,755	$983,720
Annual Loan Payment	$24,796	$33,061	$41,326	$49,591	$57,856	$66,121
Debt Reserves	$2,480	$3,306	$4,133	$4,959	$5,786	$6,612
Total Annual Cost	$52,663	$61,755	$70,847	$79,938	$89,030	$98,122
Revenue	$56,160	$56,160	$56,160	$56,160	$56,160	$56,160
Balance After Project	$3,497	-$5,595	-$14,687	-$23,778	-$32,870	-$41,962
Minimum Rate Increase	$0.00	$5.98	$15.69	$25.40	$35.12	$44.83
Current Rate (5,000 gal)	$60.00	$60.00	$60.00	$60.00	$60.00	$60.00
Proposed Monthly Rate	$60.00	$65.98	$75.69	$85.40	$95.12	$104.83

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI has requested comments on the proposed improvements from various agencies. These comments will be placed in Appendix B upon receipt.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

Prairie Meadows will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. Prairie Meadows will work with SEI and SECOG to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies.

SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

This Facility Plan identified several deficiencies with the sewer system that do not meet current SD Design Criteria Standards. The recommended alternatives will bring the system into compliance. These improvements will have to be made before Prairie Meadows can be annexed into the City of Sioux Falls.

DESIGN OF SELECTED PLAN

The proposed alternative will be designed by Prairie Meadow's engineer. All construction plans and specifications will be reviewed and approved by the SD DENR. All state bid laws will be followed for the bidding process.

LAND ACQUISITION

Land acquisition will not be necessary for the proposed improvements. Temporary construction easements may be necessary to complete the improvements. All easements will be obtained before construction is started.

IMPLEMENTATION SCHEDULE

A tentative schedule for the completion of the project is shown in Table 10.

Table 10 Project Schedule

Item to Complete	Date
Facility Plan Submitted to DENR	February 1, 2012
Facility Plan Approved	March 2, 2012
Environmental Review Complete	March 2, 2012
Funding Package Completed	February 1, 2013
Begin Design	February 1, 2013
Design Submitted to Funding Agency	April 2, 2013
Design Approved	May 2, 2013
Advertise for Bids	May 9, 2013
Open Bids	May 24, 2013
Award Bids	May 31, 2013
Begin Construction	June 30, 2013
Construction Completed	October 15, 2013

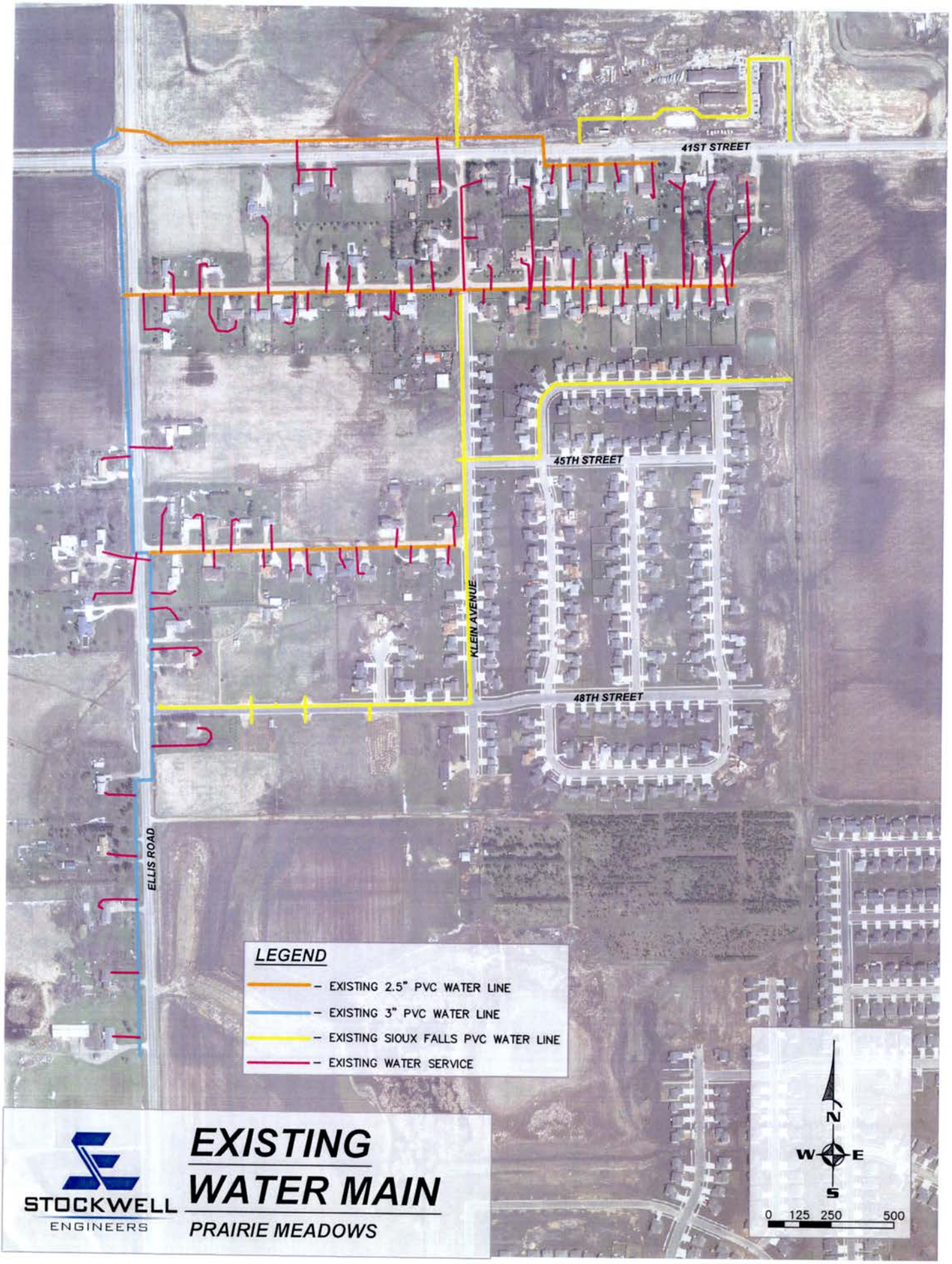
WATER SYSTEM

GENERAL SYSTEM INFORMATION

Prairie Meadows does not own the water distribution system. Minnehaha Community Water Corporation (CWC) owns, operates and bills the customers directly for water. Minnehaha CWC constructed the system in 1978. Currently, Minnehaha CWC system consists of 4,000 feet of three-inch polyvinyl chloride pipe (PVC) and 6,000 feet of 2.5-inch PVC. The City of Sioux Falls has 12-inch and eight-inch water main adjacent to the district. There are currently 74 residential customers that are connected to the system. There is also one resident that has their own well and three customers are disconnected. The existing system is shown in Figure 9.

WATER USAGE

A review of the water Minnehaha CWC billed to the residents of Prairie Meadows for the years of 1999 and 2011 was completed. This review was completed to determine per capita water demand and to compare how precipitation affects water usage. This data can also be used to model the system. The precipitation data was obtained from the National Weather Service, Sioux Falls location.



STOCKWELL ENGINEERS

EXISTING WATER MAIN

PRAIRIE MEADOWS

Table 11 Water Usage

1999		
Month	Billed (gal)	Billed (gpcpd)
January		0
February		0
March		0
April	212,000	62
May	224,000	63
June	257,013	75
July	260,000	74
August	254,000	72
September	347,000	101
October	243,000	69
November	227,000	66
December	237,000	67
Total	2,261,013	
Average Day	8,222	
Average (gpcpd)		72

2000		
Month	Billed (gal)	Billed (gpcpd)
January	271,000	75
February	215,000	64
March	194,000	54
April		0
May		0
June		0
July		0
August		0
September		0
October		0
November		0
December		0
Total	680,000	
Average Day	7,473	
Average (gpcpd)		64

2011			
Month	Billed (gal)	Billed (gpcpd)	Precip (in)
January	280,000	54	1.17
February	274,000	59	0.95
March	243,000	47	0.74
April	315,000	63	3.09
May	283,000	55	5.42
June	294,000	59	4.26
July	392,000	76	5.76
August	489,000	95	1.40
September	422,000	85	0.20
October	434,000	84	0.63
November	276,000	55	0.04
December	0	0	0.62
Total	3,702,000		24.3
Average Day	11,084		
Average (gpcpd)		67	

Average Water Billed per Year -	3,457,007
Average Water Billed per Day -	8,880
Average Water Billed per Capita per Day -	64
Maximum Billed Month -	489,000

Table 11 indicates the average water billed per capita per day (gpcpd) is 64. The Water Distribution Systems Handbook by Mays states typical domestic usage for South Dakota is 81 gpcpd. For purposes of this study a per capita usage of 70 will be utilized. The below average water usage can be attributed to only residential customers living in Prairie Meadows with no commercial or business usage. Many of the residents are older and do not have children living at home. The table also indicates that usage increases during the late summer of 2011 when precipitation declined.

FUTURE WATER USAGE

Prairie Meadows has shown a steady increase in population since 1976. The population is expected to continue to grow and then stabilize because the district is land locked on the north, east and south by the City of Sioux Falls. The future population will be utilized to determine the future water demand. The peak day needs to be calculated to determine the future water demand. Mays states the U.S. range of maximum day to average day is 1.5-3.5:1. It is our recommendation that the peaking factor shall not be less than 2.5 to account for dry periods during the summer with high water usage. Based on the current water usage of 70 gpcpd and the future population of 294 a future water usage of 51,450 gpd (70 x 294 x 2.5) can be assumed.

WATER SOURCE

Minnehaha CWC currently provides water directly to the customers in Prairie Meadows. The City of Sioux Falls would provide water to the district if they were ever annexed. It is not economically feasible for Prairie Meadows to produce their own water source with their small customer base when they are currently connected to Minnehaha CWC. Currently, the District does not have any maintenance staff that could provide the operation and maintenance for a water source. In addition, Prairie Meadows can be provided water by the City of Sioux Falls in the future. Therefore, water source will not be discussed any further in this Facility Plan.

There is one resident in the district that currently has their own well. The City of Sioux Falls requires that wells be disconnected from the house potable water supply when the customers connects to their system. Therefore, there is no possibility of well water back feeding into the City of Sioux Falls system.

WATER TREATMENT

Prairie Meadows does not have a water treatment plant because Minnehaha CWC provides water directly to the residents. The City of Sioux Falls would provide treated water to the district if they were ever annexed. It is not economically feasible for Prairie Meadows to treat their own water

source with their small customer base when they are currently connected to Minnehaha CWC. Currently, the District does not have any maintenance staff that could provide the operation and maintenance for water treatment. In addition, Prairie Meadows can be provided treated water by the City of Sioux Falls in the future. Therefore, water treatment will not be discussed any further in this Facility Plan.

WATER STORAGE

Prairie Meadows does not have any water storage because Minnehaha CWC provides pressure for the system. The City of Sioux Falls would provide the storage to the district if they were ever annexed. The City of Sioux Falls currently has a 1,500,000 gallon elevated storage tank east of Prairie Meadows along 41st Street. It is not economically feasible for Prairie Meadows to construct their own water storage with their small customer base when they have Minnehaha CWC and the City of Sioux Falls. Currently, the District does not have any maintenance staff that could provide the operation and maintenance for water storage. Therefore, water storage will not be discussed any further in this Facility Plan.

Water storage ensures the reliability of supply, maintains pressure, equalizes pumping and treatment rates, reduces the size of transmissions lines, improves operational flexibility and efficiency and provides fire protection. Due to the existing water main sizes and lack of hydrants Prairie Meadows does not have fire protection.

DISTRIBUTION SYSTEM

Minnehaha CWC's water distribution system was originally constructed of polyvinyl chloride (PVC) pipe in 1978. The City of Sioux Falls owns and operates the water main on 48th Street. A summary of all the water mains in the District limits is shown below.

Table 12 Water Mains

Water Main Dia (in)	Pipe Type	Length (ft)
2.5	PVC	5,980
3	PVC	3,960
12	PVC	880
	Total =	**10,820**

The distribution system currently has 4 dead-ends. A total of 3 dead-ends do not have hydrants at the ends for flushing. The 10 States Standards recommend dead ends be minimized to increase reliability of service and reduce head loss. The SD DENR also recommends looping dead-ends to minimize taste and odor and to reduce mineral buildup. Dead ends also increase retention time of the water which decrease disinfection. Dead ends should be equipped with means to provide adequate flushing.

Rural Water Systems were never intended to provide fire protection. Typically these systems serve remote areas with small diameter pipe. The existing lines in Prairie Meadows consist of long dead-end runs of 2.5-inch PVC. There are also five customers on 41st Street that are served from the 2.5-inch line on 42nd Street. Long runs of water mains smaller than six-inch in residential areas is not ideal. The friction loss or pressure loss of small diameter pipe is substantially more than six or eight inch pipe. The pressure loss for a 2.5-inch diameter pipe that is 1,200 feet long with a flow rate of 50 gpm is 10 psi compared to less than one psi for 6-inch. The pressure loss for a 1.5-inch diameter pipe that is 430 feet long with a flow rate of 20 gpm is 9 psi. Current practice and City of Sioux Falls standards recommend the minimum water main size of six-inches with eight inch being preferred.

The City of Sioux Falls made an agreement with Minnehaha CWC in 2005. The City of Sioux Falls agreed to buyout customers that connected to the City's system and disconnected from Minnehaha CWC. The City of Sioux Falls has grown substantially since Minnehaha CWC built their system. The current buyout amount is approximately $3,500. If a resident built a house after the agreement was signed in 2005 then the resident has agreed to reimburse the City any amount they pay Minnehaha CWC. The reimbursement to Minnehaha CWC was established so they can recover the cost to install the system.

HYDRANTS

There is only one hydrant in the District limits and it is connected to the Sioux Falls water main on 48th Street. The 10 States Standards recommends that all fire hydrant leads be located on lines a minimum of six-inch in diameter unless the hydrant is used for flushing. The DENR also recommends that hydrants be spaced at distances no greater than 600 feet depending on the area being served.

HYDRAULIC MODEL

A hydraulic model was completed for Minnehaha CWC water distribution system within the Sanitary District. The program used for the hydraulic model was WaterCAD version 6.0. The existing pipe size, type, age, water pressure information and number of customers was inputted into the model. Two simulations were completed to determine the system pressure and fire flow.

PRESSURES FOR EXISTING SYSTEM

There are minimum pressures that should be provided in a water distribution system. If these minimum pressures are not provided then the customers can experience flow reductions when more than one faucet is running. In addition, a system can provide too much pressure. Mays states that a minimum of 30 psi should be provided for the consumer. The Uniform Plumbing Code requires the pressure not to exceed 80 psi at the customers connection. However, based on previous experience a minimum pressure of 40 psi is recommended. Recommended pressures from Mays are shown in the table below.

Table 13 Typical Service Pressure Criteria

Condition	Service Pressure Criteria (psi)
Maximum Pressure	65-75
Minimum pressure during maximum day	30-40
Minimum pressure during peak hour	25-35
Minimum pressure during fires	20

The pressure analysis is completed using the peak hour flows. Typically a system can have adequate pressure during the winter when water usage is low. However, during the summer when water usage is high pipe velocities increase and therefore the head loss in the pipe also increase reducing the pressures for the consumer. Mays states that the peak hour to average day ratio is 2.0-7.0:1. It is our opinion that the peak hour ratio should be 7. This number was determined by multiplying the peak day by 190% and dividing by the minutes in a day and the average day produced per minute (1.9 x 51,450 gpd / 1440 / 8,880 gpd * 1440). The calculation determines the peak hour to be 11. However, this is over the maximum ratio of 7.

Typically water usage is limited during the night. The peak hour demand is calculated by multiplying the population by the average per capita produced by the peak hour ratio and dividing by 16 hours in a day and 60 minutes per hour. The peak hour demand for Prairie Meadows is determined to be 150 gpm (70 gpcpd x 294 x 7.0 / 16 / 60). This peak hour flow will be used for the pressure model.

An aerial photograph was used to input the approximate location of the customers. The peak hour flow needs to be converted to a usage per customers to input into the model. The per customer demand was determined to be 2.0 gpm (150 gpm / 74 customers). The existing pressures for the water distribution system is shown in the following figure. The model determined that the operating pressures in the existing system are below the recommended minimum of 40 psi. This can be attributed to the small diameter pipe sizes and long dead-end runs. The velocities in the pipes create a substantial pressure loss during the peak day demand.

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EXISTING SYSTEM PRESSURE

PRAIRIE MEADOWS

FIRE FLOWS FOR EXISTING SYSTEM

The fire flow model will be completed using the peak day demand. The peak day demand flow is determined to be 54 gpm (51,450 gpd / 16 / 60). The peak day demand per customer is determined to be 0.73 gpm (54 gpm / 74 customers). This peak day demand flow will be used for the fire flow model. The minimum residual pressure according to Mays will be set at 20 psi.

The International Standards Organization (ISO) establishes minimum fire flow requirements. For one- and two-family dwellings not exceeding two stories in height, ISO uses the following needed fire flows:

Table 14 ISO Minimum Fire Flow

Distance Between Buildings	Needed Fire Flow
More than 100 feet	500 gpm
31 to 100 feet	750 gpm
11 to 30 feet	1,000 gpm
10 feet or less	1,500 gpm

The fire flow analysis is shown in the following figure. The analysis determined the minimum fire flow of 500 gpm is not provided throughout the system. This can be attributed to the existing water main size.

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EXISTING FIRE FLOW

PRAIRIE MEADOWS

DEVELOPMENT OF WATER ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

Each of the following alternatives includes an estimate of the total project cost. Included in the total project cost are the construction cost, contingencies, legal and administration, engineering and testing. It should be noted that these are only estimates and by no means a guarantee of the actual construction costs. Actual field measurements will be taken during the design phase to complete a more accurate estimate. Contract prices can be affected by project location, contractor work load, project size, contract time and the time of year that the project is built. These estimates should be updated on a yearly basis to reflect current industry conditions.

WATER SOURCE ALTERNATIVES

There are no alternatives necessary for water source because Prairie Meadows does not produce their own water. Water is being provided by the Minnehaha CWC or water will be provided by the City of Sioux Falls in the future.

WATER TREATMENT ALTERNATIVES

There are no alternatives necessary for water treatment because Prairie Meadows does not treat their own water. Treated water is being provided by the Minnehaha CWC or water will be treated by the City of Sioux Falls in the future.

WATER STORAGE

There are no alternatives necessary for water storage because Prairie Meadows does not store their own water. Water storage is being provided by the Minnehaha CWC or water storage will be provided by the City of Sioux Falls in the future.

WATER DISTRIBUTION ALTERNATIVES

The following are the negative characteristics that were discussed in Water Distribution Section.

1) There are dead-ends in the distribution system.
2) The existing line sizes have a higher rate of pressure loss.
3) The existing line sizes are not designed to provide fire flow.
4) There are not enough hydrants to provide adequate coverage.
5) The existing system does not meet City of Sioux Falls standards.

DISTRIBUTION SYSTEM ALTERNATIVE 1: DO NOTHING

The first distribution alternative is the "do nothing" alternative. This alternative is not considered acceptable because it will not address any of the negative characteristics identified above.

DISTRIBUTION SYSTEM ALTERATIVE 2: NEW PVC SYSTEM

Distribution System Alternative 2 recommends a new PVC system be installed for Prairie Meadows. The water mains will reduce the head loss and increase the flow capacity. Dead ends will also be looped adjacent to the project. The line on 41st Street will be connected to a future Sioux Falls water main. The proposed pressures and fire flows will increase along the proposed project. The fire flow shows a more dramatic increase. This can be expected due to the reduced head loss and increased size with the new PVC pipe. Fire hydrants will be added to provide adequate coverage. Currently, there are homes that are served by water mains a block away. All homes will be served by the main in front of their house. The proposed improvements will bring the system up to current standards and allow them to be annexed into the City of Sioux Falls. The locations of the proposed improvements are shown on the following page.

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DISTRIBUTION ALTERNATIVE 2

PRAIRIE MEADOWS

Table 15 Cost Estimate for Distribution Alternative 2

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$33,000.00	$33,000.00
2	Clearing	1	LS	$2,000.00	$2,000.00
3	Remove Asphalt Concrete Pavement	100	SY	$4.00	$400.00
4	Remove Valve & Box	3	EA	$200.00	$600.00
5	Remove Water Main	100	LF	$10.00	$1,000.00
6	Full Depth Saw Cut	200	LF	$5.00	$1,000.00
7	Unclassified Excavation	3,300	CY	$6.00	$19,800.00
8	Scarify & Recompact Subgrade	9,900	SY	$1.00	$9,900.00
9	Salvage & Replace Topsoil	2,500	CY	$5.00	$12,500.00
10	Aggregate Base Course (12")	6,500	TN	$15.00	$97,500.00
11	Asphalt Concrete Composite (4")	30	TN	$100.00	$3,000.00
12	Valve Box Adjustment	32	EA	$150.00	$4,800.00
13	Seed, Fertilize & Mulch	27,400	SY	$1.50	$41,100.00
14	6" CL 200 Water Main	400	LF	$23.00	$9,200.00
15	8" CL 200 Water Main	9,700	LF	$25.00	$242,500.00
16	6" MJ Gate Valve w/Box	12	EA	$950.00	$11,400.00
17	8" MJ Gate Valve w/Box	20	EA	$1,300.00	$26,000.00
18	8" x 6" MJ Tee	12	EA	$400.00	$4,800.00
19	8" x 8" MJ Tee	6	EA	$450.00	$2,700.00
20	8" MJ Cross	2	EA	$500.00	$1,000.00
21	6" MJ Restraints	36	EA	$75.00	$2,700.00
22	8" MJ Restraints	90	EA	$100.00	$9,000.00
23	Fire Hydrant	12	EA	$2,750.00	$33,000.00
24	Cut & Tie to Existing Watermain	3	EA	$750.00	$2,250.00
25	8" x 1" Tapping Saddle	36	EA	$250.00	$9,000.00
26	8" x 1.5" Tapping Saddle	41	EA	$300.00	$12,300.00
27	8" x 2" Tapping Saddle	1	EA	$350.00	$350.00
28	1" Corporation Stop	36	EA	$125.00	$4,500.00
29	1.5" Corporation Stop	41	EA	$150.00	$6,150.00
30	2" Corporation Stop	1	EA	$175.00	$175.00
31	1" PE Service Line	1,200	LF	$18.00	$21,600.00
32	1.5" PE Service Line	1,400	LF	$19.00	$26,600.00
33	2" PE Service Line	40	LF	$22.00	$880.00
34	1" Curb Stop w/Box	36	EA	$300.00	$10,800.00
35	1.5" Curb Stop w/Box	41	EA	$350.00	$14,350.00

36	2" Curb Stop w/Box	1	EA	$450.00	$450.00
37	Erosion Control	1	LS	$5,000.00	$5,000.00
38	Traffic Control	1	LS	$5,000.00	$5,000.00
				Subtotal	$688,305.00
				Contingencies (10%)	$69,000.00
				Total Estimated Construction Costs	**$757,305.00**
				ENGINEERING	**$130,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$31,000.00**
				TOTAL ESTIMATED PROJECT COST	**$918,305.00**

Table 16 EUAC for Distribution Alternative 2

Capital Cost		**Salvage**	**Present Worth**	**Net Present**
Description	**Price**	**Value**	**of Salvage Value**	**Worth**
Mobilization	$33,000.00	$0.00	$0.00	$33,000.00
Clearing	$2,000.00	$0.00	$0.00	$2,000.00
Remove Asphalt Concrete Pavement	$400.00	$0.00	$0.00	$400.00
Remove Valve & Box	$600.00	$0.00	$0.00	$600.00
Remove Water Main	$1,000.00	$0.00	$0.00	$1,000.00
Full Depth Saw Cut	$1,000.00	$0.00	$0.00	$1,000.00
Unclassified Excavation	$19,800.00	$0.00	$0.00	$19,800.00
Scarify & Recompact Subgrade	$9,900.00	$0.00	$0.00	$9,900.00
Salvage & Replace Topsoil	$12,500.00	$0.00	$0.00	$12,500.00
Aggregate Base Course (12")	$97,500.00	$58,500.00	$32,390.03	$65,109.97
Asphalt Concrete Composite (4")	$3,000.00	$1,800.00	$996.62	$2,003.38
Valve Box Adjustment	$4,800.00	$0.00	$0.00	$4,800.00
Seed, Fertilize & Mulch	$41,100.00	$0.00	$0.00	$41,100.00
6" CL 200 Water Main	$9,200.00	$5,520.00	$3,056.29	$6,143.71
8" CL 200 Water Main	$242,500.00	$145,500.00	$80,559.82	$161,940.18
6" MJ Gate Valve w/Box	$11,400.00	$6,840.00	$3,787.14	$7,612.86
8" MJ Gate Valve w/Box	$26,000.00	$15,600.00	$8,637.34	$17,362.66
8" x 6" MJ Tee	$4,800.00	$2,880.00	$1,594.59	$3,205.41
8" x 8" MJ Tee	$2,700.00	$1,620.00	$896.95	$1,803.05
8" MJ Cross	$1,000.00	$600.00	$332.21	$667.79
6" MJ Restraints	$2,700.00	$1,620.00	$896.95	$1,803.05
8" MJ Restraints	$9,000.00	$5,400.00	$2,989.85	$6,010.15
Fire Hydrant	$33,000.00	$19,800.00	$10,962.78	$22,037.22
Cut & Tie to Existing Watermain	$2,250.00	$0.00	$0.00	$2,250.00

8" x 1" Tapping Saddle	$9,000.00	$5,400.00	$2,989.85	$6,010.15
8" x 1.5" Tapping Saddle	$12,300.00	$7,380.00	$4,086.13	$8,213.87
8" x 2" Tapping Saddle	$350.00	$210.00	$116.27	$233.73
1" Corporation Stop	$4,500.00	$2,700.00	$1,494.92	$3,005.08
1.5" Corporation Stop	$6,150.00	$3,690.00	$2,043.06	$4,106.94
2" Corporation Stop	$175.00	$105.00	$58.14	$116.86
1" PE Service Line	$21,600.00	$12,960.00	$7,175.64	$14,424.36
1.5" PE Service Line	$26,600.00	$15,960.00	$8,836.67	$17,763.33
2" PE Service Line	$880.00	$528.00	$292.34	$587.66
1" Curb Stop w/Box	$10,800.00	$6,480.00	$3,587.82	$7,212.18
1.5" Curb Stop w/Box	$14,350.00	$8,610.00	$4,767.15	$9,582.85
2" Curb Stop w/Box	$450.00	$270.00	$149.49	$300.51
Erosion Control	$5,000.00	$0.00	$0.00	$5,000.00
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Remaining Capital Costs	$230,000.00	$0.00	$0.00	$230,000.00
Total Construction Cost	**$918,305.00**	**$329,973.00**	**$182,698.05**	**$735,606.95**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$250.00			$3,719.37
Supplies	$100.00			$1,487.75
Utilities	$0.00			$0.00
Labor	$500.00			$7,438.74
Total Annual Cost	**$850.00**			**$12,645.85**
			Total Net Present Worth	**$748,252.80**
			EUAC	**$50,294.34**

STOCKWELL ENGINEERS

DIST ALT 2
PRESSURE ANALYSIS

PRAIRIE MEADOWS

STOCKWELL ENGINEERS

DIST ALT 2 FIRE FLOW ANALYSIS

PRAIRIE MEADOWS

SELECTION OF WATER ALTERNATIVES

WATER DISTRIBUTION

Distribution System Alternative 1 "Do Nothing" is not acceptable because it will not address any of the negative characteristics.

Distribution System Alternative 2 "New PVC System" is recommended because Prairie Meadows needs to have a system that reduces pressure loses, increases fire flow and loops dead-ends. This alternative will bring the system up to current standards and allow Prairie Meadows to be annexed into the City of Sioux Falls.

IMPACT ON THE OWNER'S BUDGET

A summary of the costs for the recommended alternatives are shown in the table below.

Table 17 Recommended Alternatives

Distribution System Alternative 2 "New PVC System":	$918,305.00
Combined Project Cost	**$918,305.00**

Currently, Prairie Meadows does not have a water charge because they do not provide water to their customers. Prairie Meadows could establish a water utility to pay for the project. Prairie Meadows would need to obtain grant and loan dollars from various funding agencies to finance the construction of a new water system. The loan is based on an interest rate of 3.0% over 20 years. The owner's future water fees will be used to make the loan payments. It should be noted that if Prairie Meadows is ever annexed into the City of Sioux Falls the current charge for a residential 5/8" meter water service is a base charge of $2.90 and a usage charge of $3.33 per hundred cubic feet (CCF) of billed water under seven CCF. Minnehaha CWC current residential charge is a base charge of $25 plus a usage charge of $3.25 per thousand gallons under 10,000 gallons.

Table 18 Funding Proposed Improvements

Revenue	$0.00
Expenses	$0.00
Current Debt Payment	$0.00
Short Lived Asset Replacement	$0.00
Net Cash From Operations	**$0.00**
New Loan Payment	$61,724.52
Debt Reserves (10%)	$6,172.45
Net Water Fund Balance	**-$67,896.97**
Monthly Water Rate Increase	$78.00
Number of Customers	74
Annual Revenue Generated	$69,264.00
Water Fund Balance After Increase	**$1,367.03**

The District will try to obtain grant dollars to reduce the loan amount. In order to be eligible for grant dollars the DENR has required a minimum monthly water rate of $25 for 5,000 gallons.

The District could also apply for a grant and loan from Rural Development. The current interest rate from Rural Development is 3.75% for 40 years. This funding source requires that the owner plan for any equipment replacement that may occur in the future. There are no "short lived asset replacement" to plan for because Prairie Meadows would only own the distribution system. There would be no pumps or wells to maintain. The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table. It should be noted that the following table does not include any cost for purchasing water. The proposed rate increase would only address debt payment.

Table 19 Potential Grant/Loan Amounts

Grant/Loan	90/10	80/20	70/30	60/40	50/50	40/60	30/70
Expenses	$0	$0	$0	$0	$0	$0	$0
Current Debt	$0	$0	$0	$0	$0	$0	$0
Short Lived Assetts	$0	$0	$0	$0	$0	$0	$0
Project Cost	$918,305	$918,305	$918,305	$918,305	$918,305	$918,305	$918,305
Grant Amount	$826,475	$734,644	$642,814	$550,983	$459,153	$367,322	$275,492
Loan Amount	$91,831	$183,661	$275,492	$367,322	$459,153	$550,983	$642,814
Annual Loan Payment	$6,172	$12,345	$18,517	$24,690	$30,862	$37,035	$43,207
Debt Reserves	$617	$1,234	$1,852	$2,469	$3,086	$3,703	$4,321
Total Annual Cost	$6,790	$13,579	$20,369	$27,159	$33,948	$40,738	$47,528
Revenue	$0	$0	$0	$0	$0	$0	$0
Balance After Project	-$6,790	-$13,579	-$20,369	-$27,159	-$33,948	-$40,738	-$47,528
Minimum Rate Increase	$7.65	$15.29	$22.94	$30.58	$38.23	$45.88	$53.52
Current Rate (5,000 gal)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Proposed Monthly Rate	$7.65	$15.29	$22.94	$30.58	$38.23	$45.88	$53.52

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI has requested comments on the proposed improvements from various agencies. These comments will be placed in Appendix B upon receipt.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

Prairie Meadows will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. Prairie Meadows will work with SEI and the SECOG to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies.

SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

This Facility Plan identified several deficiencies with the water system that do not meet current SD Design Criteria Standards. The recommended alternatives will bring the system into compliance. These improvements will have to be made before Prairie Meadows can be annexed into the City of Sioux Falls.

DESIGN OF SELECTED PLAN

The proposed alternative will be designed by Prairie Meadow's engineer. All construction plans and specifications will be reviewed and approved by the SD DENR. All state bid laws will be followed for the bidding process.

LAND ACQUISITION

Land acquisition will not be necessary for the proposed improvements. Temporary construction easements may be necessary to complete the improvements. All easements will be obtained before construction is started.

IMPLEMENTATION SCHEDULE

A tentative schedule for the completion of the project is shown in Table 20.

Table 20 Project Schedule

Item to Complete	Date
Facility Plan Submitted to DENR	February 1, 2012
Facility Plan Approved	March 2, 2012
Environmental Review Complete	March 2, 2012
Funding Package Completed	December 1, 2012
Begin Design	December 1, 2012
Design Submitted to Funding Agency	February 1, 2013
Design Approved	March 3, 2013
Advertise for Bids	March 10, 2013
Open Bids	March 25, 2013
Award Bids	April 1, 2013
Begin Construction	May 1, 2013
Construction Completed	September 1, 2013

DRAINAGE SYSTEM

GENERAL DRAINAGE SYSTEM INFORMATION

In 2011 SEI conducted a study of the 41st Street Drainage Basin which included Prairie Meadows. Prairie Meadows was identified as the West Basin. The West Basin is comprised of 89 acres of single family residential, rural residential and agricultural land. Runoff in the basin is conveyed by ditches and culverts. The West Basin discharges across 41st Street through an existing 36" RCP at a location approximately 1590' west of the intersection of Grinnell Avenue and 41st Street. The existing basin is shown in Figure 16.

The West Basin is on the upstream end of a larger basin called the Silver Creek Watershed that discharges to Skunk Creek. SEI performed the Silver Creek Watershed Analysis in 1989. The Silver Creek analysis details the allowable flow across 41st to prevent the downstream segments from being overloaded. The maximum flow that is allowed across 41st Street from the West Basin is 45 cubic feet per second (cfs).

The West Basin has been broken down into 10 sub-areas and major culvert crossings analyzed using XP-SWMM 2010 modeling software. The existing terrain is such that many areas upstream of culverts provide natural detention. A majority of the watershed is comprised of Type B Hydrologic Soil Grouping with minimal random areas of Type C and D soils. The silty clay loams slope gently from the south to the north and are generally well drained. Composite Curve Numbers were calculated for each sub-basin and are listed in the Table below.

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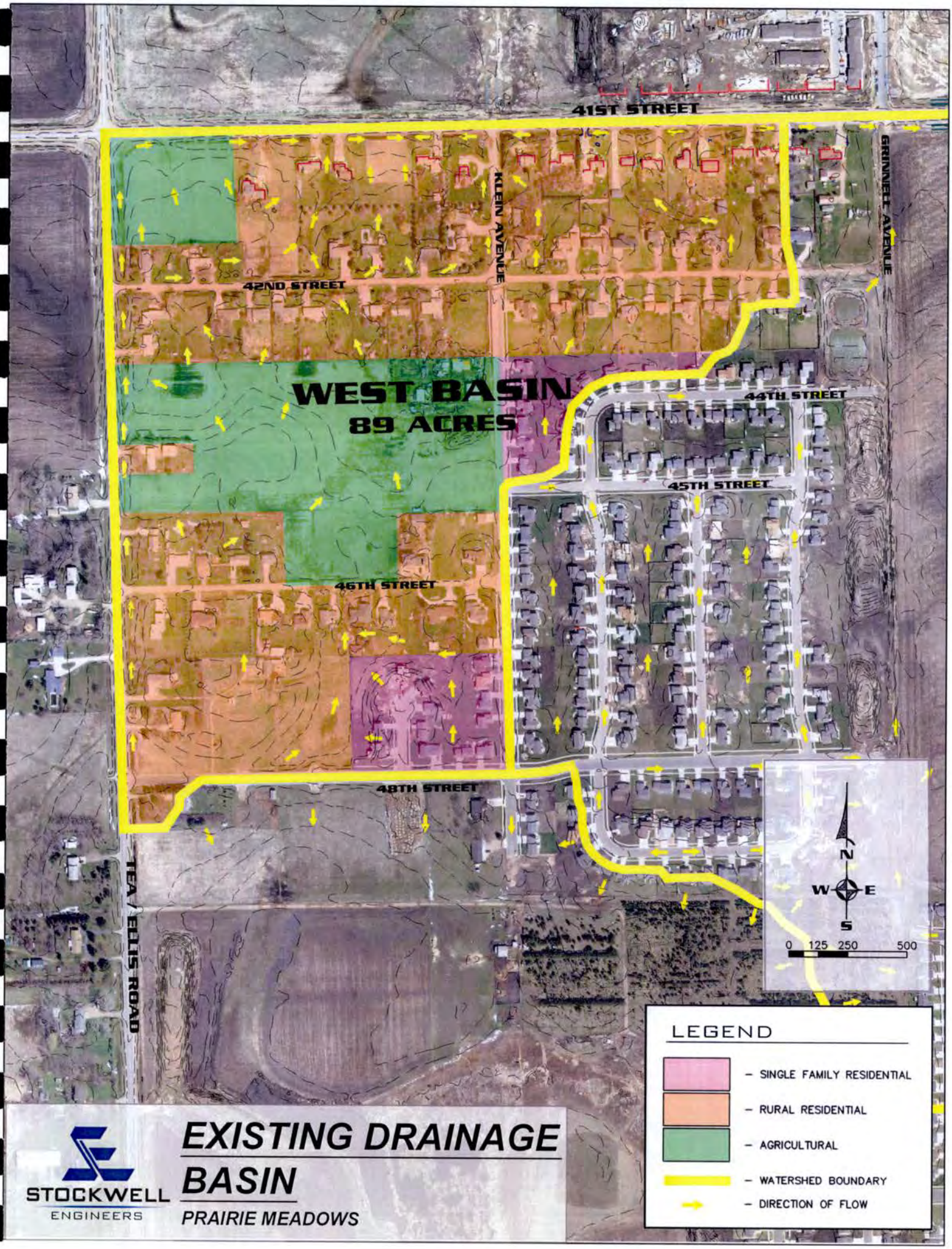
EXISTING CULVERTS

PRAIRIE MEADOWS



STOCKWELL ENGINEERS

EXISTING DRAINAGE BASIN

PRAIRIE MEADOWS

Table 21 Sub-Basins

Sub Areas		AREA				Composite CN
		TOTAL AREA	Commercial (CN = 92)	Single Family Residential 1/4 acre Lots (CN = 75)	Rural Residential 1/2 acre Lots (CN = 70)	
WEST BASIN	AREA A	16	3.8	0.0	12.2	75.2
	AREA B	11.9	0	0.0	11.9	70
	AREA C	8.6	0	4.4	4.2	72.6
	AREA D	20.4	0	12.3	8.1	73
	AREA E	6.5	0	3.5	3.0	72.7
	AREA F	3.4	0	1.8	1.6	72.6
	AREA G	3.3	0	0.5	2.8	70.8
	AREA H	3.4	0	0.0	3.4	70
	AREA I	14.2	0	3.0	11.2	71.1
	AREA J	0.7	0	0.0	0.7	70

Peak flows were developed using XP-SWMM for the 5 and 100-Year simulated storms using the SCS Hydrology Method. The SCS Type II 24 hour rainfall distribution was used using a multiplier of 3.5 for the 5-year event and 5.95 for the 100-year event.

There are problems with the current drainage system. The existing ditches need to be regraded. Over time the ditch bottom has silted in causing water to pond. There are several culverts that are not set at the correct elevation or do not slope the right way to drain the ditches. During rain events water ponds in the ditches and in residents backyards. The water ponds in the ditch until it evaporates or seeps away. In addition, the culverts are not sized properly to convey the runoff. Pictures of the water ponding are shown in the following figures.

Figure 17 Ditch Ponding

Figure 18 Backyard Drainage

FUTURE CONDITIONS

It is assumed that Prairie Meadows will eventually be annexed into the City of Sioux Falls and become an urban development. There is agricultural land that is available for development within Prairie Meadows. The proposed alternatives assume that the agricultural areas will eventually develop into single-family residential and commercial land uses.

DEVELOPMENT OF DRAINAGE ALTERNATIVES

GENERAL ALTERNATIVE INFORMATION

Each of the following alternatives includes an estimate of the total project cost. Included in the total project cost are the construction cost, contingencies, legal and administration, engineering and testing. It should be noted that these are only estimates and by no means a guarantee of the actual construction costs. Actual field measurements will be taken during the design phase to complete a more accurate estimate. Contract prices can be affected by project location, contractor work load, project size, contract time and the time of year that the project is built. These estimates should be updated on a yearly basis to reflect current industry conditions.

DRAINAGE ALTERNATIVES

The following are the negative characteristics that were discussed in the Drainage Section.

1) The existing ditches are not graded properly and water ponds.
2) There are existing culverts that slope the wrong way.
3) There are existing culverts that are set at the wrong elevation.
4) There are existing culverts that are undersized.

DRAINAGE ALTERNATIVE 1: DO NOTHING

The first drainage alternative is the "do nothing" alternative. This alternative is not considered acceptable because it will not correct the drainage problems.

DRAINAGE ALTERNATIVE 2: RURAL STREET SECTION

In the case where the Prairie Meadows remains a rural section, the natural detention that exists throughout the basin will remain. However, once the basin is fully developed and agricultural areas upstream of the rural residences develop into single-family land uses, portions of the natural storage will be eliminated. The existing 36" RCP has the potential to convey 74 cfs across 41st Street during the 100-year rainfall event and would overload the downstream system. Additional detention is required on the south side of 41st Street to provide enough storage to detain the 100-year event and release at a rate of 45 cfs. Preliminary design indicates that the amount of storage needed if this area is to remain a rural section is 5.5 acre-ft. There are several empty lots located south of 41st Street that would need to be acquired to construct a series of interconnected storage facilities, discharge storm sewer pipe and drainage way. The finalized layout and design of the detention facility will vary dependent upon which properties are able to be acquired. The volume of

storage is limited due to preliminary grades set on 41st Street and the elevation of the existing system downstream that the pond discharge will be connected to.

The following figure depicts a possible layout for a series of 2 ponds constructed on several lots located between 41st and 42nd Streets within Prairie Meadows. The design of the storage facility posed challenges that included the following:

1) Limited area in which to construct a pond.

2) Limited depth available for storage.

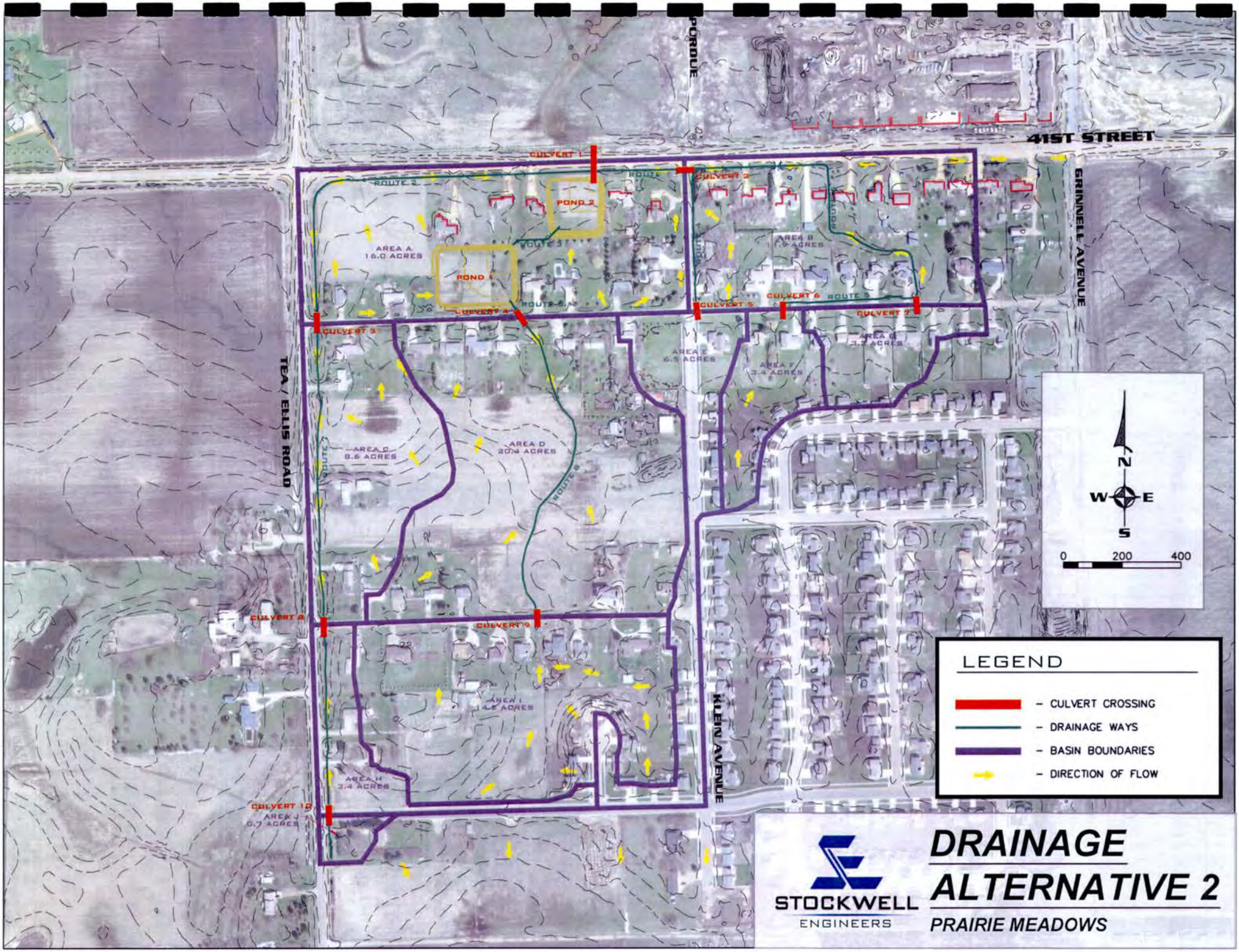
3) Discharge must be received from the entire basin.

To achieve the 5.5 acre-feet of storage volume required for a rural section, a series of 2 ponds was developed. The proposed pond configuration includes acquiring property for two pond cells and an easement to connect the cells. Pond 1 is 6 ft deep and provides 4.8 ac-ft of storage. Pond 2 is limited to 4 feet deep and provides 1.2 ac-ft of storage for a total of 6.0 ac-ft of storage with both ponds providing for an addition 1' of freeboard. Separating the ponds allowed for a greater depth in Pond 1 while maintaining a realistic slope on the bottom of both ponds and providing a discharge pipe to connect to the existing system on Purdue Avenue. Pond 2 is located along the 41st Street ROW that will allow for runoff from the east side of Klein Avenue to be discharged into via an enclosed system located within the 41st ROW. The two cells are interconnected with a 15" RCP and together, the ponds will discharge through a proposed 27" pipe under 41st Street at a rate of 43.9 cfs during the 100-year event, corresponding with the Silver Creek Drainage Study.

The performance of the pond and the associated enclosed storm sewer system will be designed in accordance with City Design Standards for arterial roadways that restrict the amount of ponding within the street that is allowed during the major event. This alternative provides for 6 acre-feet of storage, accounting for the necessary storage needed for the fully developed basin in the scenario that Prairie Meadows were to remain a rural section. It would be possible to move one of the detention basins to the south side of 42nd Street in the agricultural area if land can't be acquired north of 42nd Street. Discussions with the City of Sioux Falls indicated that Prairie Meadows will not be annexed if they remain a rural street section. Therefore, a cost estimate will not be completed for this alternative. The flow data from the XP-SWMM model is shown in the following table.

Table 22 Rural Section Storm Flows

Node Name	Area (acres)	Tc (min)	Pervious Area Curve Number	5-YEAR Max Flow (cfs)	100-YEAR Max Flow (cfs)
ARA/POND2	16	66.6	75.2	9.5	25.5
AREA C	8.6	70	72.6	4.2	12.1
AREA D	20.4	73.4	73	9.8	28.0
AREA B	11.9	68.2	70	4.9	15.5
AREA E	6.5	32.3	72.7	5.6	15.7
AREA F	3.4	73.2	73.2	1.6	4.6
AREA G	3.3	58.4	70.8	1.6	5.0
AREA H	3.4	65.7	70	1.4	4.5
AREA J	0.7	26.1	70	0.6	1.8
AREA I	14.2	61	71.1	6.9	20.9


41ST STREET
PURDUE
GRINNELL AVENUE
TEA / ELLIS ROAD
KLEIN AVENUE
CULVERT 1
CULVERT 2
CULVERT 3
CULVERT 4
CULVERT 5
CULVERT 6
CULVERT 7
CULVERT 8
CULVERT 9
CULVERT 10
POND 1
POND 2
ROUTE 1
ROUTE 2
ROUTE 3
ROUTE 4
ROUTE 5
ROUTE 6
ROUTE 7
ROUTE 8
AREA A 16.0 ACRES
AREA B 1.9 ACRES
AREA C 8.6 ACRES
AREA D 20.4 ACRES
AREA E 6.5 ACRES
AREA F 3.4 ACRES
AREA G 3.2 ACRES
AREA H 3.4 ACRES
AREA I 14.8 ACRES
AREA J 0.7 ACRES
N
W
E
S
0
200
400
LEGEND
- CULVERT CROSSING
- DRAINAGE WAYS
- BASIN BOUNDARIES
- DIRECTION OF FLOW
STOCKWELL ENGINEERS
DRAINAGE ALTERNATIVE 2
PRAIRIE MEADOWS

DRAINAGE ALTERNATIVE 3: URBAN STREET SECTION

Drainage Alternative 3 evaluates if Prairie Meadows is brought into the City Limits and becomes a development that includes an urban street section, additional detention will need to be provided for as the areas within Prairie Meadows where natural detention occurs will also be eliminated. Once Prairie Meadows becomes an urban section, all of the natural detention that exists at the upstream ends of the driveway and roadway crossings will need to be mitigated. A total of 8 ac-ft of storage would need to be provided for within the basin while maintaining the same release across 41st Street as described in the Silver Creek Drainage Analysis.

The following figure depicts a similar series of ponds that would require additional property acquisition and will provide an additional 2 ac-ft of storage in comparison to Drainage Alternative 2. In this scenario, pond 1 provides the same amount of storage, 4.8 ac-ft at 6 feet deep and pond 2 would provide 3.2 ac-ft of storage at 4 feet deep for a total of 8 ac-ft of storage. Again, both ponds include an additional 1 foot of freeboard.

In the event that additional properties cannot be acquired for the ponds and Prairie Meadows develops into an Urban Section with only 6 ac-ft of storage provided for in Prairie Meadows, a separate storage facility will need to be provided for upstream of Prairie Meadows as part of the development plans for the property to the south. The rate of release and amount of storage will depend directly on what is able to be constructed within Prairie Meadows. The cost estimate for this alternative is shown in the following table. The cost for constructing the detention basins and purchasing the land has not been included in this estimate. Conversations with the City of Sioux Falls indicated this cost would be paid by the Regional BMP money. The flow data from the XP-SWMM model is shown in the following table.

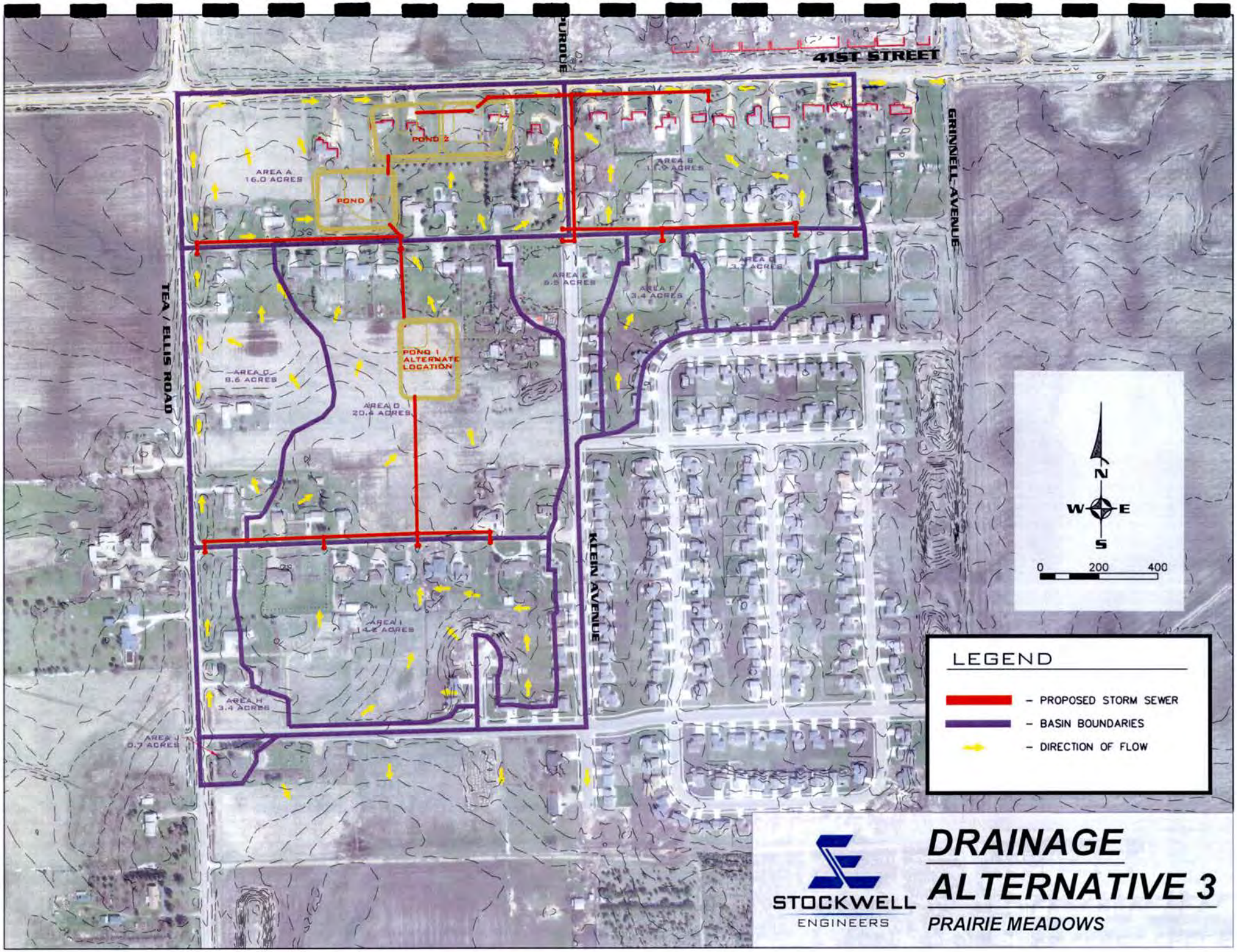

41ST STREET
PUROCE
GRINNELL AVENUE
TEA / ELLIS ROAD
KLEIN AVENUE
POND 2
POND 1
POND 1 ALTERNATE LOCATION
AREA A 16.0 ACRES
AREA B
AREA C
AREA D 9.6 ACRES
AREA D 20.4 ACRES
AREA E 6.5 ACRES
AREA F 3.4 ACRES
AREA G
AREA H 3.4 ACRES
AREA I
AREA J 0.7 ACRES
N
W
E
S
0
200
400
LEGEND
- PROPOSED STORM SEWER
- BASIN BOUNDARIES
- DIRECTION OF FLOW
STOCKWELL ENGINEERS
DRAINAGE ALTERNATIVE 3
PRAIRIE MEADOWS

Table 23 Urban Section Storm Flows

Node Name	Area (acres)	Tc (min)	Pervious Area Curve Number	5-YEAR Max Flow (cfs)	100-YEAR Max Flow (cfs)
ARA/POND2	16	66.6	75.2	9.5	25.5
AREA C	8.6	70	72.6	4.2	12.1
AREA D	20.4	73.4	73	9.8	28.0
AREA B	11.9	68.2	70	4.9	15.5
AREA E	6.5	32.3	72.7	5.6	15.7
AREA F	3.4	73.2	72.6	1.6	4.6
AREA G	3.3	58.4	70.8	1.6	5.0
AREA H	3.4	65.7	70	1.4	4.5
AREA J	0.7	26.1	70	0.6	1.8
AREA I	14.2	61	71.1	6.9	20.9

Sump pump collection lines have been included in this alternative where storm sewer lines are not proposed. There is some existing sump pump collection lines adjacent to residents on 42nd Street and 46th Street. However, they are not allowed to connect to these lines until they are annexed into the City. Connecting sump pumps to the storm sewer or sump pump collection line would reduce the inflow to the sanitary sewer.

Table 24 Cost Estimate for Drainage Alternative 3

Item No.	Description	Quantity	Unit	Unit Price	Price
1	Mobilization	1	LS	$31,000.00	$31,000.00
2	Clearing	1	LS	$2,000.00	$2,000.00
3	Remove Pipe Culvert	5,300	FT	$3.00	$15,900.00
4	Select Trench Backfill	100	TN	$12.00	$1,200.00
5	Unclassified Excavation	2,500	CY	$6.00	$15,000.00
6	Scarify & Recompact Subgrade	7,400	SY	$1.00	$7,400.00
7	Aggregate Base Course (12")	4,830	TN	$15.00	$72,450.00
8	Concrete Curb & Gutter	8,900	FT	$12.00	$106,800.00
9	6" PCC Fillet Section	150	SY	$45.00	$6,750.00
10	6" Concrete Valley Gutter	60	SY	$45.00	$2,700.00
11	Salvage & Replace Topsoil	2,000	CY	$5.00	$10,000.00
12	Seeding, Fertilizing & Mulching	11,800	SY	$1.50	$17,700.00
13	Inlet Protection	26	EA	$100.00	$2,600.00
14	15" RCP Class 3, Furnish	3,017	FT	$19.00	$57,323.00
15	15" RCP, Install	3,017	FT	$16.00	$48,272.00
16	18" RCP Class 3, Furnish	1,030	FT	$21.00	$21,630.00
17	18" RCP, Install	1,030	FT	$17.00	$17,510.00
18	24" RCP Class 3, Furnish	1,220	FT	$25.00	$30,500.00
19	24" RCP, Install	1,220	FT	$20.00	$24,400.00
20	15" Storm Sewer Bedding Material	3,017	FT	$2.00	$6,034.00
21	18" Storm Sewer Bedding Material	1,030	FT	$2.50	$2,575.00
22	24" Storm Sewer Bedding Material	1,220	FT	$3.00	$3,660.00
23	4" Sump Pump Collection Line	2,640	FT	$15.00	$39,600.00
24	Connect Sump Pump Line	78	EA	$300.00	$23,400.00
25	Class M6 Concrete	90	CY	$500.00	$45,000.00
26	Reinforcing Steel	11,800	LBS	$1.50	$17,700.00
27	Type Y Manhole Frame & Lid	22	EA	$250.00	$5,500.00
28	Special Frame & Grate Neenah 3402-E	3	EA	$300.00	$900.00
29	Special Manhole Cover Neenah R-1733	3	EA	$350.00	$1,050.00
30	Traffic Control	1	LS	$5,000.00	$5,000.00
31	Erosion Control	1	LS	$5,000.00	$5,000.00
32	Locating Utility	5	EA	$150.00	$750.00
				Subtotal	$647,304.00
				Contingencies (10%)	$65,000.00
				Total Estimated Construction Costs	**$712,304.00**
				ENGINEERING	**$124,000.00**
				LEGAL, ADMINISTRATION & TESTING (4%)	**$29,000.00**
				TOTAL ESTIMATED PROJECT COST	**$865,304.00**

Table 25 EUAC for Drainage Alternative 3

Capital Cost Description	Price	Salvage Value	Present Worth of Salvage Value	Net Present Worth
Mobilization	$31,000.00	$0.00	$0.00	$31,000.00
Clearing	$2,000.00	$0.00	$0.00	$2,000.00
Remove Pipe Culvert	$15,900.00	$0.00	$0.00	$15,900.00
Select Trench Backfill	$1,200.00	$0.00	$0.00	$1,200.00
Unclassified Excavation	$15,000.00	$0.00	$0.00	$15,000.00
Scarify & Recompact Subgrade	$7,400.00	$0.00	$0.00	$7,400.00
Aggregate Base Course (12")	$72,450.00	$43,470.00	$24,068.29	$48,381.71
Concrete Curb & Gutter	$106,800.00	$64,080.00	$35,479.54	$71,320.46
6" PCC Fillet Section	$6,750.00	$4,050.00	$2,242.39	$4,507.61
6" Concrete Valley Gutter	$2,700.00	$1,620.00	$896.95	$1,803.05
Salvage & Replace Topsoil	$10,000.00	$0.00	$0.00	$10,000.00
Seeding, Fertilizing & Mulching	$17,700.00	$0.00	$0.00	$17,700.00
Inlet Protection	$2,600.00	$1,560.00	$863.73	$1,736.27
15" RCP Class 3, Furnish	$57,323.00	$34,393.80	$19,043.01	$38,279.99
15" RCP, Install	$48,272.00	$0.00	$0.00	$48,272.00
18" RCP Class 3, Furnish	$21,630.00	$12,978.00	$7,185.60	$14,444.40
18" RCP, Install	$17,510.00	$0.00	$0.00	$17,510.00
24" RCP Class 3, Furnish	$30,500.00	$18,300.00	$10,132.27	$20,367.73
24" RCP, Install	$24,400.00	$0.00	$0.00	$24,400.00
15" Storm Sewer Bedding Material	$6,034.00	$3,620.40	$2,004.53	$4,029.47
18" Storm Sewer Bedding Material	$2,575.00	$1,545.00	$855.43	$1,719.57
24" Storm Sewer Bedding Material	$3,660.00	$2,196.00	$1,215.87	$2,444.13
4" Sump Pump Collection Line	$39,600.00	$23,760.00	$13,155.34	$26,444.66
Connect Sump Pump Line	$23,400.00	$14,040.00	$7,773.61	$15,626.39
Class M6 Concrete	$45,000.00	$27,000.00	$14,949.25	$30,050.75
Reinforcing Steel	$17,700.00	$10,620.00	$5,880.04	$11,819.96
Type Y Manhole Frame & Lid	$5,500.00	$3,300.00	$1,827.13	$3,672.87
Special Frame & Grate Neenah 3402-E	$900.00	$540.00	$298.98	$601.02
Special Manhole Cover Neenah R-1733	$1,050.00	$630.00	$348.82	$701.18
Traffic Control	$5,000.00	$0.00	$0.00	$5,000.00
Erosion Control	$5,000.00	$0.00	$0.00	$5,000.00
Locating Utility	$750.00	$0.00	$0.00	$750.00
Remaining Capital Costs	$218,000.00	$0.00	$0.00	$218,000.00
Total Construction Cost	**$865,304.00**	**$267,703.20**	**$148,220.77**	**$717,083.23**
Annual Operation and Maintenance Cost				
Description	**Annual Cost**			**Net Present Worth**
Equipment	$500.00			$7,438.74
Supplies	$500.00			$7,438.74
Utilities	$0.00			$0.00
Labor	$2,500.00			$37,193.69
Total Annual Cost	**$3,500.00**			**$52,071.16**
			Total Net Present Worth	**$769,154.39**
			EUAC	**$51,699.26**

SELECTION OF DRAINAGE ALTERNATIVES

DRAINAGE SYSTEM

Drainage System Alternative 1 "Do Nothing" is not acceptable because it will not address any of the current drainage problems.

Drainage System Alternative 2 "Rural Section" is not recommended because the ditches will always require cleaning and grading. In addition, the City of Sioux Falls will not allow Prairie Meadows to be annexed with a rural section.

Drainage System Alternative 3 "Urban Section" is recommended. This alternative will address the drainage problems. In will also allow Prairie Meadows to be annexed into the City of Sioux Falls.

IMPACT ON THE OWNER'S BUDGET

A summary of the costs for the recommended alternatives are shown in Table 26.

Table 26 Recommended Alternatives

Drainage System Alternative 3 "Urban Section":	$865,304.00
Combined Project Cost	**$865,304.00**

Currently, Prairie Meadows does not have a storm sewer charge because they do not have a storm sewer system. Prairie Meadows could establish a storm sewer utility that had a monthly charge or established an annual assessment to property owners taxes. Other communities have set up an assessment based on the square feet that is owned and the type of property use. The area and property type is multiplied by the charge per square foot. Prairie Meadows would need to obtain grant and loan dollars from various funding agencies to finance the construction of a storm sewer system. The loan is based on an interest rate of 3.0% over 20 years. The owner's future storm fees will be used to make the loan payments.

Table 27 Funding Proposed Improvements

Revenue	$0.00
Expenses	$0.00
Current Debt Payment	$0.00
Short Lived Asset Replacement	$0.00
Net Cash From Operations	**$0.00**
New Loan Payment	$58,162.02
Debt Reserves (10%)	$5,816.20
Net Fund Balance	**-$63,978.22**
Monthly Rate Increase	$70.00
Number of Customers	78
Annual Revenue Generated	$65,520.00
Fund Balance After Increase	**$1,541.78**

The above table shows that Prairie Meadows would have to obtain grant dollars to reduce the loan amount. The District could also apply for a grant and loan from Rural Development. The current interest rate from Rural Development is 3.75% for 40 years. Prairie Meadows would have to raise their rates with this funding source. This funding source also requires that the owner plan for any equipment replacement that may occur in the future. The storm sewer system would not have any short lived assets to replace because there are no pumps. The potential project grant/loan percentages and how those amounts affect user rates are shown in the following table.

Table 28 Potential Grant/Loan Amounts

Grant/Loan	90/10	80/20	70/30	60/40	50/50	40/60	30/70
Expenses	$0	$0	$0	$0	$0	$0	$0
Current Debt	$0	$0	$0	$0	$0	$0	$0
Short Lived Assetts	$0	$0	$0	$0	$0	$0	$0
Project Cost	$865,304	$865,304	$865,304	$865,304	$865,304	$865,304	$865,304
Grant Amount	$778,774	$692,243	$605,713	$519,182	$432,652	$346,122	$259,591
Loan Amount	$86,530	$173,061	$259,591	$346,122	$432,652	$519,182	$605,713
Annual Loan Payment	$5,816	$11,632	$17,449	$23,265	$29,081	$34,897	$40,713
Debt Reserves	$582	$1,163	$1,745	$2,326	$2,908	$3,490	$4,071
Total Annual Cost	$6,398	$12,796	$19,193	$25,591	$31,989	$38,387	$44,785
Revenue	$0	$0	$0	$0	$0	$0	$0
Balance After Project	-$6,398	-$12,796	-$19,193	-$25,591	-$31,989	-$38,387	-$44,785
Minimum Rate Increase	$6.84	$13.67	$20.51	$27.34	$34.18	$41.01	$47.85
Current Rate (5,000 gal)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Proposed Monthly Rate	$6.84	$13.67	$20.51	$27.34	$34.18	$41.01	$47.85

ENVIRONMENTAL EVALUATION

Funding agencies will require an environmental review to be completed for the proposed improvements before funding can be obtained. SEI has requested comments on the proposed improvements from various agencies. These comments will be placed in Appendix B upon receipt.

VIEWS OF THE PUBLIC AND CONCERNED INTEREST GROUPS

Prairie Meadows will hold a public hearing to discuss the proposed improvements with residents that are affected by the project. Prairie Meadows will work with SEI and the SECOG to schedule this meeting and keep minutes of the meeting. These minutes will be provided to the funding agencies.

SELECTED PLAN, DESCRIPTION AND IMPLEMENTATION ARRANGEMENTS

JUSTIFICATION AND DESCRIPTION OF SELECTED PLAN

This Facility Plan identified several deficiencies with the drainage system that do not meet current Design Standards. The recommended alternatives will bring the system into compliance.

DESIGN OF SELECTED PLAN

The proposed alternative will be designed by Prairie Meadow's engineer. All construction plans and specifications will be reviewed and approved by the SD DENR. All state bid laws will be followed for the bidding process.

LAND ACQUISITION

Land acquisition will be necessary for the construction of the detention basins. The City of Sioux Falls will purchase the land. Temporary construction easements may be necessary to complete the improvements. All easements will be obtained before construction is started.

IMPLEMENTATION SCHEDULE

A tentative schedule for the completion of the project is shown in Table 29.

Table 29 Project Schedule

Item to Complete	Date
Facility Plan Submitted to DENR	February 1, 2012
Facility Plan Approved	March 2, 2012
Environmental Review Complete	March 2, 2012
Funding Package Completed	December 1, 2012
Begin Design	December 1, 2012
Design Submitted to Funding Agency	February 1, 2013
Design Approved	March 3, 2013
Advertise for Bids	March 10, 2013
Open Bids	March 25, 2013
Award Bids	April 1, 2013
Begin Construction	May 1, 2013
Construction Completed	September 1, 2013

DEBT REPAYMENT

Prairie Meadows will have loans to repay if they proceed with the recommended sanitary, water main and drainage alternatives. The City of Sioux Falls has indicated that they would be willing to put a surcharge on the customers in Prairie Meadows if they were to be annexed. Another option for payment of the loans is to assess the property along the project. The District would use the money from the annual assessments to make the loan payments. Prairie Meadows is working with an attorney to determine their options for loan repayment.

INELIGIBLE COSTS

It should be noted that there are items that will not be eligible for funding from the DENR. These items include service lines on private property, asphalt surfacing on streets that are currently gravel, sidewalk and street lights. The asphalt surfacing, sidewalk and street lights are improvements that

will be required before Prairie Meadows can be annexed. The approximate cost for these improvements on 42nd Street, 46th Street and Klein Avenue is $670,000.

REFERENCES

Condon, Heidi., (2011). 41st Street Drainage Basin, (Sioux Falls, SD: Stockwell Engineers).

Mays, Larry W., (2000). Water Distribution Systems Handbook, (New York, NY: McGraw Hill), pp.

National Weather Service Forecast Office, Sioux Falls, SD, 3 May 2011 <http://www.weather.gov/climate/index.php?wfo=fsd>.

South Dakota Department of Environment and Natural Resources, (July 1979). *Criteria for Design of Public Water Supply Facilities in South Dakota*, Albany, New York

Appendix A
Sewer Televising Reports

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:26 PM **Submitted By**

Inspection # 186386 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC004 **To** SMH 07LC003 **#** **Length** 321.00

Started 07/14/2009 00:00
Completed 07/14/2009 00:00
Comp By 5227
Project
Crew COLL COLLECTION

Crew Leader 1368
Operator 4727
Weather DRY
Flow Depth 0.00
Pipe Det

Reverse Setup ☐ **Prior History** ☐
Sketch ☐

Media
Format **Media #**
Index **To**

Surveyed Length 321.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET MH SE CORNER AT ELLIS ROAD TO 1ST MH EAST OF ELLIS ROAD 8" VCP

Observations

07LC004

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						
Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	41	0-25% FLOW		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	283.00	To	283.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	05	CR/CROWN		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	283.00	To	283.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	321.00	To	321.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						
Setup	U	From	321.00	To	321.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LC003

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
05	CR/CROWN	1	0.0000
41	0-25% FLOW	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:27 PM **Submitted By**

Inspection # 186387 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC003 **To** SMH 07LC002 **#** **Length** 320.00

Started	07/14/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/14/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 320.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET 1ST MH EAST ELLIS ROAD TO 2ND MH WEST OF KLIEN AVE 8" VCP

Observations

07LC003

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	137.00	**To**	137.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	65	REPAIRED		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	6' PVC REPAIR						

Setup	U	**From**	230.00	**To**	230.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	230.00	**To**	230.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	267.00	**To**	267.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC002

Observations

07LC003

Setup	U	From	267.00	To	267.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	320.00	To	320.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	320.00	To	320.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LC002

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	2	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	1	0.0000
65	REPAIRED	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:28 PM **Submitted By**

Inspection # 186390 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC002 **To** SMH 07LC001 **#** **Length** 322.00

Started	07/14/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/14/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 322.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
IN SOUTH DITCH OF 41ST STREET MH AT 8217 TO MH AT 8109 WEST 41ST STREET 8" VCP

Observations

07LC002

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						
Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	6.00	**To**	6.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	6.00	**To**	6.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	6.00	**To**	6.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	38.00	**To**	38.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	38.00	**To**	38.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC001

Observations

07LC002

Setup	U	From	162.00	To	162.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	162.00	To	162.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	46	BREAK-IN CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	240.00	To	240.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	240.00	To	240.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	322.00	To	322.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	322.00	To	322.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LC001

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:28 PM **Submitted By**

Inspection # 186002 **Work Order #** 249462 **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC001 **To** SMH 07LB006 **#** **Length** 330.90

Started	07/08/2009 00:00	Crew Leader	1368	Reverse Setup ☐	Prior History ☐
Completed	07/08/2009 00:00	Operator	4727	Sketch ☐	
Comp By	5446	Weather	DRY	Media	
Project		Flow Depth	0.00	Format	Media #
Crew	COLL COLLECTION	Pipe Det		Index	To

Surveyed Length 330.00 **Surveyed Diam** 10.00 **Surveyed Height** 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET MH AT KLIEN AVE TO 1ST MH WEST OF KLIEN AVE BY 8109 WEST 41ST STREET 10" VCP

Observations

07LC001

Setup	D	From	330.00	To	330.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	D	From	330.00	To	330.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	257.00	To	257.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	257.00	To	257.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	19	INFILTRATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	ALITTLE CLEAR WATER IN SERVICE						

Setup	D	From	257.00	To	257.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	46	BREAK-IN CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	3.00	To	3.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	40	CHANGE IN PIPE MATERIAL		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	PVC TO VCP						

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

07LB006

Observations

07LC001

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LB006

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
08	LT/LEFT	1	0.0000
11	REVERSE SET-UP	1	0.0000
19	INFILTRATION	1	0.0000
40	CHANGE IN PIPE MATERIAL	1	0.0000
41	0-25% FLOW	1	0.0000
46	BREAK-IN CONNECTION	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:28 PM **Submitted By**

Inspection # 186001 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB006 **To** SMH 07LB005 **#** **Length** 330.00

Started	07/08/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/08/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5446	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 328.00 **Surveyed Diam** 10.00 **Surveyed Height** 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET MH AT KLIEN AVE TO MH BY 8001 WEST 41ST STREET 10" TRUSS

Observations

07LB006

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	246.00	**To**	246.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	246.00	**To**	246.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	ALOT OF CLEAR WATER IN SERVICE						

Setup	U	**From**	246.00	**To**	246.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	310.00	**To**	310.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB005

Observations

07LB006

Setup	U	From	310.00	To	310.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	328.00	To	328.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	328.00	To	328.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB005

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	2	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:29 PM **Submitted By**

Inspection # 186004 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB005 **To** SMH 07LB004 **#** **Length** 330.00

Started	07/08/2009 00:00	Crew Leader	1368	Reverse Setup ☐	Prior History ☐
Completed	07/08/2009 00:00	Operator	4727	Sketch ☐	
Comp By	5446	Weather	DRY	Media	
Project		Flow Depth	0.00	Format	Media #
Crew	COLL COLLECTION	Pipe Det		Index	To

Surveyed Length 330.00 **Surveyed Diam** 10.00 **Surveyed Height** 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET MH BY 8001 TO MH BY 7901 WEST 41ST STREET 10" TRUSS

Observations

07LB005

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	41	0-25% FLOW		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	95.00	To	95.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	95.00	To	95.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	19	INFILTRATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	CLEAR WATER IN SERVICE						

Setup	U	From	95.00	To	95.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	190.00	To	190.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LB004

Observations

07LB005

Setup	U	From	190.00	To	190.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	299.00	To	299.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	299.00	To	299.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	330.00	To	330.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	330.00	To	330.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB004

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:29 PM **Submitted By**

Inspection # 184038 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB004 **To** SMH 07LB003 **#** **Length** 284.00

Started	07/02/2009 00:00	**Crew Leader**	4973	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/02/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 285.00 **Surveyed Diam** 10.00 **Surveyed Height** 0.00

Comments
SOUTH SIDE 41ST STREET MH BY 7901 TO MH BY 7801 WEST 41ST STREET 10" TRUSS

Observations

07LB004

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						
Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	8.00	**To**	8.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	70.00	**To**	70.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	70.00	**To**	70.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	150.00	**To**	150.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	150.00	**To**	150.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	256.00	**To**	256.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB003

Observations

07LB004

Setup	U	From	256.00	To	256.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	285.00	To	285.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	285.00	To	285.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB003

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:29 PM **Submitted By**

Inspection # 184039 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT

From ID SMH 07LB003 **To** SMH 07LB001 **#** **Length** 385.00

Started	07/02/2009 00:00	Crew Leader	4973	Reverse Setup ☐	Prior History ☐
Completed	07/02/2009 00:00	Operator	4727	Sketch ☐	
Comp By	5227	Weather	DRY	Media	
Project		Flow Depth	0.00	Format	Media #
Crew	COLL COLLECTION	Pipe Det		Index	To

Surveyed Length 386.00 Surveyed Diam 10.00 Surveyed Height 0.00

Comments
SOUTH DITCH OF WEST 41ST STREET MH BY 7801 WEST 41ST STREET TO MH WEST SIDE GRINELL AVE 10" TRUSS

Observations

07LB003

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	41	0-25% FLOW		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	145.00	To	145.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	145.00	To	145.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	165.00	To	165.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	165.00	To	165.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	19	INFILTRATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	INFILLTRATION IN SERVICE						

07LB001

Observations

07LB003

Setup	U	From	165.00	To	165.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	347.00	To	347.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	347.00	To	347.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	19	INFILTRATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	INFILLTRATION IN SERVICE						

Setup	U	From	347.00	To	347.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	386.00	To	386.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH WITH WIER						

Setup	U	From	386.00	To	386.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB001

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
19	INFILTRATION	2	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:30 PM **Submitted By**

Inspection # 185978 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB008D **To** SMH 07LB008 **#** **Length** 195.00

Started	07/07/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/07/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 195.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON KLIEN AVE 1ST MH SOUTH OF 42ND STREET TO MH AT 42ND STREET 8" PVC

Observations

07LB008D

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	3.00	**To**	3.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	3.00	**To**	3.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	5.00	**To**	5.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	5.00	**To**	5.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	9.00	**To**	9.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	80.00	**To**	80.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB008

Observations

07LB008D

Setup	U	From	80.00	To	80.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	194.00	To	194.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	194.00	To	194.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB008

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	2	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:30 PM Submitted By

Inspection # 186014 Work Order # Activity 714 TELEVISE LINE SEGMENT
From ID SMH 07LB008 To SMH 07LB007 # Length 245.00

Started 07/08/2009 00:00
Completed 07/08/2009 00:00
Comp By 5446
Project
Crew COLL COLLECTION

Crew Leader 1368
Operator 4727
Weather DRY
Flow Depth 0.00
Pipe Det

Reverse Setup ☒ Prior History ☐
Sketch ☐

Media
Format Media #
Index To

Surveyed Length 245.00 Surveyed Diam 8.00 Surveyed Height 0.00

Comments
ON KLIEN AVE 1ST MH SOUTH OF 42ND STREET TO MH AT 42ND STREET 8" VCP

Observations

07LB008

Setup	D	From	245.00	To	245.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						
Setup	D	From	245.00	To	245.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	128.00	To	128.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	128.00	To	128.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	46	BREAK-IN CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MAYBE ALITTLE CLEAR WATER HERE						
Setup	D	From	83.00	To	83.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	83.00	To	83.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MAYBE ALITTLE CLEAR WATER HERE						
Setup	D	From	42.00	To	42.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LB007

Observations

07LB008

Setup	D	**From**	42.00	**To**	42.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LB007

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	2	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000
46	BREAK-IN CONNECTION	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:31 PM **Submitted By**

Inspection # 186013 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB007 **To** SMH 07LB006 **#** **Length** 242.00

Started	07/08/2009 00:00	**Crew Leader**	1368	**Reverse Setup**	☒
Completed	07/08/2009 00:00	**Operator**	4727	**Sketch**	☐
Comp By	5446	**Weather**	DRY	**Prior History**	☐
Project		**Flow Depth**	0.00	**Media**	
Crew	COLL COLLECTION	**Pipe Det**		**Format** / **Media #**	
				Index / **To**	

Surveyed Length 245.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON KLIEN AVE MH SOUTH SIDE 41ST STREET TO 1ST MH SOUTH KLIEN AVE 8" VCP

Observations

07LB007

Setup	D	**From**	242.00	**To**	242.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	242.00	**To**	242.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	134.00	**To**	134.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	134.00	**To**	134.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	104.00	**To**	104.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	104.00	**To**	104.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	51.00	**To**	51.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	51.00	**To**	51.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB006

Observations

07LB007

Setup	D	From	3.00	To	3.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	40	CHANGE IN PIPE MATERIAL		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	TRUSS TO VCP						

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	11	REVERSE SET-UP		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	41	0-25% FLOW		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB006

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	2	0.0000
11	REVERSE SET-UP	1	0.0000
40	CHANGE IN PIPE MATERIAL	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:37 PM | Submitted By |

Inspection # 186000 | Work Order # | Activity 714 TELEVISE LINE SEGMENT

From ID SMH 07LB008C | To SMH 07LB008B | # | Length 242.00

Started	07/08/2009 00:00	Crew Leader	1368	Reverse Setup	☒
Completed	07/08/2009 00:00	Operator	4727	Sketch	☐
Comp By	5446	Weather	DRY	Prior History	☐
Project		Flow Depth	0.00	Media	
Crew	COLL COLLECTION	Pipe Det		Format / Media #	
				Index / To	

Surveyed Length 242.00 | Surveyed Diam 8.00 | Surveyed Height 0.00

Comments
2ND MH EAST TO 3RD MH EAST KLIEN AVE ON 42ND STREET 8" PVC

Observations

07LB008C

Setup	D	From	242.00	To	242.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	D	From	242.00	To	242.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	234.00	To	234.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	234.00	To	234.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	232.00	To	232.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	232.00	To	232.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	140.00	To	140.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	140.00	To	140.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LB008B

Observations

07LB008C

Setup	D	**From**	138.00	**To**	138.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	138.00	**To**	138.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LB008B

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	2	0.0000
08	LT/LEFT	2	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	4	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:38 PM **Submitted By**

Inspection # 185986 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB008B **To** SMH 07LB008A **#** **Length** 414.00

Started	07/08/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/08/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 415.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
2ND MH EAST TO 1ST MH EAST KLIEN AVE ON 42ND STREET 8" PVC

Observations

07LB008B

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	9.00	**To**	9.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	60.00	**To**	60.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	60.00	**To**	60.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	63.00	**To**	63.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	63.00	**To**	63.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	clear water in service						

07LB008A

Observations

07LB008B

Setup	U	From	63.00	To	63.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	164.00	To	164.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	164.00	To	164.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	167.00	To	167.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	167.00	To	167.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	255.00	To	255.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	255.00	To	255.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	257.00	To	257.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	257.00	To	257.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	359.00	To	359.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	359.00	To	359.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LB008A

Observations

07LB008B

Setup	U	**From**	414.00	**To**	414.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	414.00	**To**	414.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	SERVICE IN MH RUNNING CLEAR WATER!!						

End of Observations

07LB008A

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
08	LT/LEFT	3	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	7	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:38 PM **Submitted By**

Inspection # 185985 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB008A **To** SMH 07LB008 **#** **Length** 392.10

Started	07/07/2009 00:00	**Crew Leader**	1368	**Reverse Setup**	☒	**Prior History**	☐
Completed	07/07/2009 00:00	**Operator**	4727	**Sketch**	☐		
Comp By	5227	**Weather**	DRY	**Media**			
Project		**Flow Depth**	0.00	**Format**		**Media #**	
Crew	COLL COLLECTION	**Pipe Det**		**Index**		**To**	

Surveyed Length 394.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON 42ND STREET MH AT KLIEN AVE TO 1ST MH EAST OF KLIEN AVE 8" VCP

Observations

07LB008A

Setup	D	**From**	392.00	**To**	392.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	392.00	**To**	392.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	333.00	**To**	333.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	333.00	**To**	333.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	302.00	**To**	302.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	302.00	**To**	302.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB008

Observations

07LB008A

Setup	D	From	300.00	To	300.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	300.00	To	300.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	282.00	To	282.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	282.00	To	282.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	199.00	To	199.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	199.00	To	199.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	IN 2' OF PVC						

Setup	D	From	141.00	To	141.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	65	REPAIRED		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	5' PVC REPAIR						

Setup	D	From	67.00	To	67.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	67.00	To	67.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	9.00	To	9.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

07LB008

Observations

07LB008A

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	11	REVERSE SET-UP		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	41	0-25% FLOW		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB008

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
08	LT/LEFT	3	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
46	BREAK-IN CONNECTION	2	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000
65	REPAIRED	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:39 PM **Submitted By**

Inspection # 186043 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB011 **To** SMH 07LB010 **#** **Length** 322.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	SHOWERS	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 322.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON 42ND STREET 3RD MH WEST TO 2ND MH WEST KLIEN AVE 8" VCP

Observations

07LB011

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						
Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	5.00	**To**	5.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	5.00	**To**	5.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	10.00	**To**	10.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	10.00	**To**	10.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	U	**From**	12.00	**To**	12.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB010

Observations

07LB011

Setup	U	From	12.00	To	12.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	174.00	To	174.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	174.00	To	174.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	46	BREAK-IN CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	287.00	To	287.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	287.00	To	287.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	289.00	To	289.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	289.00	To	289.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	19	INFILTRATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	CLEAR WATER IN SERVICE						
Setup	U	From	289.00	To	289.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	U	From	322.00	To	322.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						
Setup	U	From	322.00	To	322.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LB010

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
08	LT/LEFT	2	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:39 PM | Submitted By |

Inspection # 186042 | Work Order # | Activity 714 TELEVISE LINE SEGMENT
From ID SMH 07LB011 | To SMH 07LC006 | # | Length 320.00

Started	07/09/2009 00:00	Crew Leader	1368	Reverse Setup	☒
Completed	07/09/2009 00:00	Operator	4727	Sketch	☐
Comp By	5227	Weather	SHOWERS	Prior History	☐
Project		Flow Depth	0.00	Media	
Crew	COLL COLLECTION	Pipe Det		Format / Index	Media # / To

Surveyed Length 320.00 | Surveyed Diam 8.00 | Surveyed Height 0.00

Comments
ON 42ND STREET MH EAST SIDE ELLIS ROAD TO 3RD MH WEST KLIEN AVE 8"VCP

Observations

07LB011

Setup	D	From	320.00	To	320.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	D	From	320.00	To	320.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	128.00	To	128.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	08	LT/LEFT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	128.00	To	128.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	9.00	To	9.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	03	BEGIN OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	D	From	0.00	To	0.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	11	REVERSE SET-UP		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LC006

Observations

07LB011

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC006

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
08	LT/LEFT	1	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:40 PM **Submitted By**

Inspection # 186078 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC006 **To** SMH 07LC005 **#** **Length** 245.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	SHOWERS	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 245.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
EAST DITCH OF SOUTH ELLIS ROAD MH AT 42ND STREET TO 1ST MH SOUT H41ST STREET 8" VCP

Observations

07LC006

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	9.00	**To**	9.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	207.00	**To**	207.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	207.00	**To**	207.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	245.00	**To**	245.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	245.00	**To**	245.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC005

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
41	0-25% FLOW	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:40 PM **Submitted By**

Inspection # 186079 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC005 **To** SMH 07LC004 **#** **Length** 243.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DAMP	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 243.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
EAST DITCH OF SOUTH ELLIS ROAD 1ST MH SOUTH OF 41ST STREET TO MH SE CORNER AT 41ST STREET 8" VCP

Observations

07LC005

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	243.00	**To**	243.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	243.00	**To**	243.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC004

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
41	0-25% FLOW	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:41 PM **Submitted By**

Inspection # 186090 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC007 **To** SMH 07LC006 **#** **Length** 388.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 388.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
EAST DITCH OF SOUTH ELLIS ROAD 1ST MH SOUTH 42ND STREET TO MH AT 42ND STREET 8" VCP

Observations

07LC007

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	22.00	**To**	22.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	22.00	**To**	22.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	119.00	**To**	119.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	119.00	**To**	119.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	191.00	**To**	191.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC006

Observations

07LC007

Setup	U	From	191.00	To	191.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	259.00	To	259.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	259.00	To	259.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

Setup	U	From	388.00	To	388.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	02	DOWNSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						

Setup	U	From	388.00	To	388.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

End of Observations

07LC006

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:41 PM **Submitted By**

Inspection # 186081 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT

From ID SMH 07LC008 **To** SMH 07LC007 **#** **Length** 388.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 388.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
EAST DITCH SOUTH ELLIS ROAD 1ST MH NORTH 46TH STREET TO 1ST MH SOUTH 42ND STREET 8" VCP

Observations

07LC008

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH SMALL LEAK IN MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	108.00	**To**	108.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	108.00	**To**	108.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	115.00	**To**	115.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	115.00	**To**	115.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	151.00	**To**	151.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC007

Observations

07LC008

Setup	U	**From**	151.00	**To**	151.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	305.00	**To**	305.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	305.00	**To**	305.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	388.00	**To**	388.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	388.00	**To**	388.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	388.00	**To**	388.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH LEAKING ALOT!! OF WATER						

End of Observations

07LC007

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
08	LT/LEFT	1	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
48	ABANDONED CONNECTION (CAPPED)	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:43 PM **Submitted By**

Inspection # 186080 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC009 **To** SMH 07LC008 **#** **Length** 255.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 255.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
EAST DITCH OF SOUTH ELLIS ROAD MH AT 46TH STREET TO 1ST MH NORTH 46TH STREET 8" VCP

Observations

07LC009

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	9.00	**To**	9.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	166.00	**To**	166.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	166.00	**To**	166.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	255.00	**To**	255.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	255.00	**To**	255.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC008

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:43 PM **Submitted By**

Inspection # 186358 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LF010 **To** SMH 07LC009C **#** **Length** 330.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 330.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON 46TH STREET 3RD MH EAST ELLIS ROAD TO MH AT KLIEN AVE 8" VCP

Observations

07LF010

Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	326.00	**To**	326.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	40	CHANGE IN PIPE MATERIAL		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	VCP TO PVC						

Setup	D	**From**	256.00	**To**	256.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	256.00	**To**	256.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	212.00	**To**	212.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	212.00	**To**	212.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC009C

Observations

07LF010

Setup	D	**From**	210.00	**To**	210.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	210.00	**To**	210.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	113.00	**To**	113.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	113.00	**To**	113.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	111.00	**To**	111.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	111.00	**To**	111.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	11.00	**To**	11.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	11.00	**To**	11.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	SERVICE IN 4' PVC REPAIR						

Setup	D	**From**	4.00	**To**	4.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	4.00	**To**	4.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

07LC009C

Observations

07LF010

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC009C

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
08	LT/LEFT	4	0.0000
11	REVERSE SET-UP	1	0.0000
40	CHANGE IN PIPE MATERIAL	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:43 PM **Submitted By**

Inspection # 185988 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB010 **To** SMH 07LB009 **#** **Length** 321.00

Started	07/07/2009 00:00	**Crew Leader**	1368	**Reverse Setup**	☒ **Prior History** ☐
Completed	07/07/2009 00:00	**Operator**	4727	**Sketch**	☐
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 323.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
1ST MH WEST TO 2ND MH WEST OF KLIEN AVE ON 42ND STREET 8" VCP

Observations

07LB010

Setup	D	**From**	321.00	**To**	321.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	321.00	**To**	321.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	269.00	**To**	269.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	269.00	**To**	269.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	266.00	**To**	266.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	266.00	**To**	266.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	216.00	**To**	216.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	216.00	**To**	216.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB009

Observations

07LB010

Setup	D	**From**	169.00	**To**	169.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	169.00	**To**	169.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	136.00	**To**	136.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	136.00	**To**	136.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	60.00	**To**	60.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	60.00	**To**	60.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	38.00	**To**	38.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	38.00	**To**	38.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB009

Observations

07LB010

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LB009

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
08	LT/LEFT	4	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:44 PM **Submitted By**

Inspection # 185987 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LB009 **To** SMH 07LB008 **#** **Length** 329.70

Started 07/07/2009 00:00
Completed 07/07/2009 00:00
Comp By 5227
Project
Crew COLL COLLECTION

Crew Leader 1368
Operator 4727
Weather DRY
Flow Depth 0.00
Pipe Det

Reverse Setup ☒ **Prior History** ☐
Sketch ☐

Media
Format **Media #**
Index **To**

Surveyed Length 330.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON 42ND STREET MH AT KLIEN AVE TO 1ST MH WEST KLIEN AVE 8" VCP

Observations

07LB009

Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						
Setup	D	**From**	330.00	**To**	330.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	302.00	**To**	302.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	302.00	**To**	302.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	240.00	**To**	240.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	240.00	**To**	240.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	203.00	**To**	203.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	203.00	**To**	203.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LB008

Observations

07LB009

Setup	D	**From**	150.00	**To**	150.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	150.00	**To**	150.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	53.00	**To**	53.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	53.00	**To**	53.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						
Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LB008

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
08	LT/LEFT	1	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:44 PM **Submitted By**

Inspection # 186333 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC009C **To** SMH 07LC009B **#** **Length** 320.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 322.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
3RD MH EAST TO 2ND MH EAST ELLIS ROAD ON 46TH STREET 8" VCP

Observations

07LC009C

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	96.00	**To**	96.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	96.00	**To**	96.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	98.00	**To**	98.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	98.00	**To**	98.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	188.00	**To**	188.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC009B

Observations

07LC009C

Setup	U	**From**	188.00	**To**	188.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	CLEAR WATER RUNNING IN SERVICE						

Setup	U	**From**	188.00	**To**	188.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	46	BREAK-IN CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	190.00	**To**	190.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	190.00	**To**	190.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	192.00	**To**	192.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	192.00	**To**	192.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	294.00	**To**	294.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	294.00	**To**	294.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	296.00	**To**	296.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	296.00	**To**	296.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	298.00	**To**	298.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	40	CHANGE IN PIPE MATERIAL		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	VCP TO PVC						

07LC009B

Observations

07LC009C

Setup	U	**From**	301.00	**To**	301.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	301.00	**To**	301.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	302.00	**To**	302.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	40	CHANGE IN PIPE MATERIAL		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	PVC TO VCP						

Setup	U	**From**	312.00	**To**	312.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	40	CHANGE IN PIPE MATERIAL		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	VCP TO PVC						

Setup	U	**From**	322.00	**To**	322.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	322.00	**To**	322.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC009B

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
08	LT/LEFT	5	0.0000
19	INFILTRATION	1	0.0000
40	CHANGE IN PIPE MATERIAL	3	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000
46	BREAK-IN CONNECTION	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	5	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:45 PM **Submitted By**

Inspection # 186351 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC009B **To** SMH 07LC009A **#** **Length** 320.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 320.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
2ND MH EAST TO 1ST MH EAST ELLIS ROAD ON 46TH STREET 8" VCP

Observations

07LC009B

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	48.00	**To**	48.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	48.00	**To**	48.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	50.00	**To**	50.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	50.00	**To**	50.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	167.00	**To**	167.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC009A

Observations

07LC009B

Setup	U	**From**	167.00	**To**	167.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	194.00	**To**	194.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	194.00	**To**	194.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	253.00	**To**	253.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation				**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	253.00	**To**	253.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	320.00	**To**	320.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	320.00	**To**	320.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC009A

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
		1	0.0000
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	2	0.0000
08	LT/LEFT	2	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:45 PM **Submitted By**

Inspection # 186357 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC009A **To** SMH 07LC009 **#** **Length** 320.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 320.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
1ST MH EAST ELLIS ROAD TO MH EAST SIDE ELLIS ROAD ON 46TH STREET 8" VCP (DEPOSITS IN MIDDLE HAD TO GO FROM BOTH MH'S)

Observations

07LC009A

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	46.00	**To**	46.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	46.00	**To**	46.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	48.00	**To**	48.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	48.00	**To**	48.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	109.00	**To**	109.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC009

Observations

07LC009A

Setup	U	**From**	109.00	**To**	109.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	152.00	**To**	152.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	152.00	**To**	152.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	37	DEPOSITS		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	152.00	**To**	152.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	152.00	**To**	152.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	61	CANNOT GET THROUGH		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	CANT GET PAST DEPOSITS WILL COME FROM OTHER WAY						

Setup	D	**From**	167.00	**To**	167.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	61	CANNOT GET THROUGH		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	CAME THIS FAR FRON OTHER WAY						

Setup	D	**From**	135.00	**To**	135.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	135.00	**To**	135.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	COMING FROM OTHER WAY						

07LC009

Observations

07LC009A

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC009

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	2	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	3	0.0000
08	LT/LEFT	1	0.0000
37	DEPOSITS	1	0.0000
41	0-25% FLOW	2	0.0000
45	SERVICE CONNECTION	3	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000
61	CANNOT GET THROUGH	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:45 PM **Submitted By**

Inspection # 186148 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC010 **To** SMH 07LC009 **#** **Length** 72.00

Started	07/09/2009 00:00	**Crew Leader**	1368	**Reverse Setup**	☒ **Prior History** ☐
Completed	07/09/2009 00:00	**Operator**	4727	**Sketch**	☐
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 72.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
AT 46TH STREET MH EAST SIDE TO MH IN WEST DITCH ELLIS ROAD 8" VCP

Observations

07LC010

Setup	D	**From**	72.00	**To**	72.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	72.00	**To**	72.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	12.00	**To**	12.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC009

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:45 PM **Submitted By**

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:46 PM **Submitted By**

Inspection # 186382 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC011 **To** SMH 07LC010 **#** **Length** 327.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 327.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
WEST DITCH OF ELLIS ROAD 1ST MH SOUTH 46TH STREET TO MH AT 46TH STREET 8" VCP

Observations

07LC011

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	19	INFILTRATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH BOWL AND LID LEAKING						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	9.00	**To**	9.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	25.00	**To**	25.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	25.00	**To**	25.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	37.00	**To**	37.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC010

Observations

07LC011

Setup	U	**From**	37.00	**To**	37.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	316.00	**To**	316.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	316.00	**To**	316.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	327.00	**To**	327.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	327.00	**To**	327.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC010

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	2	0.0000
19	INFILTRATION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	3	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:46 PM **Submitted By**

Inspection # 186381 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC012 **To** SMH 07LC011 **#** **Length** 324.00

Started	07/13/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/13/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 324.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
WEST DITCH OF ELLIS ROAD MH AT 48TH STREET TO 1ST MH SOUTH OF 46TH STREET 8" VCP

Observations

07LC012

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	324.00	**To**	324.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	324.00	**To**	324.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC011

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:46 PM **Submitted By**

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
41	0-25% FLOW	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:46 PM **Submitted By**

Inspection # 186383 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC013 **To** SMH 07LC012 **#** **Length** 457.00

Started 07/13/2009 00:00
Completed 07/13/2009 00:00
Comp By 5227
Project
Crew COLL COLLECTION

Crew Leader 1368
Operator 4727
Weather DRY
Flow Depth 0.00
Pipe Det

Reverse Setup ☒ **Prior History** ☐
Sketch ☐

Media
Format **Media #**
Index **To**

Surveyed Length 457.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
WEST DITCH OF ELLIS ROAD MH AT 48TH STREET TO 1ST MH SOUTH 48TH STREET 8" VCP

Observations

07LC013

Setup	D	**From**	457.00	**To**	457.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	457.00	**To**	457.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	228.00	**To**	228.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	228.00	**To**	228.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC012

Observations

07LC013

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC012

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:46 PM **Submitted By**

Inspection # 186395 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC014 **To** SMH 07LC013 **#** **Length** 417.00

Started	07/15/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/15/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 417.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
WEST DITCH OF ELLIS ROAD 2ND MH SOUTH TO 1ST MH SOUTH OF 48TH STREET 8" VCP

Observations

07LC014

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	40.00	**To**	40.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	40.00	**To**	40.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	308.00	**To**	308.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	308.00	**To**	308.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	358.00	**To**	358.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	28	BROKEN		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	PIPE BROKEN ON BOTTOM						

07LC013

Observations

07LC014

Setup	U	**From**	367.00	**To**	367.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	65	REPAIRED		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	5' PVC REPAIR						

Setup	U	**From**	417.00	**To**	417.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	417.00	**To**	417.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC013

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
08	LT/LEFT	2	0.0000
28	BROKEN	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000
65	REPAIRED	1	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:47 PM **Submitted By**

Inspection # 186396 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC015 **To** SMH 07LC014 **#** **Length** 413.00

Started 07/15/2009 00:00
Completed 07/15/2009 00:00
Comp By 5227
Project
Crew COLL COLLECTION

Crew Leader 1368
Operator 4727
Weather DRY
Flow Depth 0.00
Pipe Det

Reverse Setup ☒ **Prior History** ☐
Sketch ☐

Media
Format **Media #**
Index **To**

Surveyed Length 413.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
WEST DITCH OF ELLIS ROAD 2ND MH SOUTH TO 3RD MH SOUTH 48TH STREET 8"VCP

Observations

07LC015

Setup	D	From	413.00	To	413.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	01	UPSTREAM MANHOLE		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Comments	MH						
Setup	D	From	413.00	To	413.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	04	END OBSERVATION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	396.00	To	396.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	396.00	To	396.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	293.00	To	293.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	293.00	To	293.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	48	ABANDONED CONNECTION (CAPPED)		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	186.00	To	186.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	07	RT/RIGHT		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		
Setup	D	From	186.00	To	186.00	Width	0.00
Position		To		Offset	0.00	Index	
Observation	45	SERVICE CONNECTION		Measurement	0.000	Rating	0.0000
Degree/Severity				Grouted	N		

07LC014

Observations

07LC015

Setup	D	**From**	73.00	**To**	73.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	73.00	**To**	73.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	D	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC014

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/10/2012 04:47 PM **Submitted By**

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	4	0.0000
11	REVERSE SET-UP	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/12/2012 09:27 AM **Submitted By**

Inspection # 129887 **Work Order #** **Activity** CONVMN CONVERSION MAIN
From ID SMH 07LC012B **To** SMH 07LC012A **#** **Length** 340.00

Started 05/13/2005 01:01
Completed
Comp By 5112
Project
Crew

Crew Leader
Operator
Weather
Flow Depth 9.00
Pipe Det

Reverse Setup ☐ **Prior History** ☐
Sketch ☐

Media
Format **Media #** 050005
Index 0:46:0 **To** 0:56:2

Surveyed Length 343.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
REMARKS: SANITARY, TRANSPORTER, MARK PERRY

Observations

07LC012B

Setup	U	**From**	343.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	343.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	299.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	301.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

07LC012A

Observations

07LC012B

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	11	REVERSE SET-UP		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	110.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	33	SAG BEGIN		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 4 REPAIR_CODE_LENGTH: 5						

Setup	U	**From**	110.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	39	SAG ENDS		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	299.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

Setup	U	**From**	301.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	48	ABANDONED CONNECTION (CAPPED)		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity	0			**Grouted**	N		
Comments	REPAIR_CODE: 1 REPAIR_CODE_LENGTH: 0						

End of Observations

07LC012A

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	1	0.0000
11	REVERSE SET-UP	1	0.0000
33	SAG BEGIN	1	0.0000
39	SAG ENDS	1	0.0000
41	0-25% FLOW	1	0.0000
48	ABANDONED CONNECTION (CAPPED)	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

City of Sioux Falls
City Hall 224 W 9th St
Sioux Falls, SD 95124

Sewer Main Formula-Based TV Inspection Detail

Report Date 01/12/2012 09:28 AM **Submitted By**

Inspection # 186385 **Work Order #** **Activity** 714 TELEVISE LINE SEGMENT
From ID SMH 07LC012A **To** SMH 07LC012 **#** **Length** 340.00

Started	07/14/2009 00:00	**Crew Leader**	1368	**Reverse Setup** ☐	**Prior History** ☐
Completed	07/14/2009 00:00	**Operator**	4727	**Sketch** ☐	
Comp By	5227	**Weather**	DRY	**Media**	
Project		**Flow Depth**	0.00	**Format**	**Media #**
Crew	COLL COLLECTION	**Pipe Det**		**Index**	**To**

Surveyed Length 340.00 **Surveyed Diam** 8.00 **Surveyed Height** 0.00

Comments
ON 48TH STREET 1ST MH EAST ELLIS ROAD TO MH WEST DITCH OF ELLIS ROAD 8" VCP

Observations

07LC012A

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	01	UPSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	03	BEGIN OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	0.00	**To**	0.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	41	0-25% FLOW		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	73.00	**To**	73.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	08	LT/LEFT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	73.00	**To**	73.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	IN 3' OF PVC REPAIR						

Setup	U	**From**	80.00	**To**	80.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	07	RT/RIGHT		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	80.00	**To**	80.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	45	SERVICE CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

07LC012

Observations

07LC012A

Setup	U	**From**	337.00	**To**	337.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	34	DROP CONNECTION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

Setup	U	**From**	340.00	**To**	340.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	02	DOWNSTREAM MANHOLE		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		
Comments	MH						

Setup	U	**From**	340.00	**To**	340.00	**Width**	0.00
Position		**To**		**Offset**	0.00	**Index**	
Observation	04	END OBSERVATION		**Measurement**	0.000	**Rating**	0.0000
Degree/Severity				**Grouted**	N		

End of Observations

07LC012

Observation Summary

Observation	Description	# of Observations	Sum of Ratings
01	UPSTREAM MANHOLE	1	0.0000
02	DOWNSTREAM MANHOLE	1	0.0000
03	BEGIN OBSERVATION	1	0.0000
04	END OBSERVATION	1	0.0000
07	RT/RIGHT	1	0.0000
08	LT/LEFT	1	0.0000
34	DROP CONNECTION	1	0.0000
41	0-25% FLOW	1	0.0000
45	SERVICE CONNECTION	2	0.0000

Overall Summary

Rating Label	Rating

There are no overall ratings for this inspection

End of Report

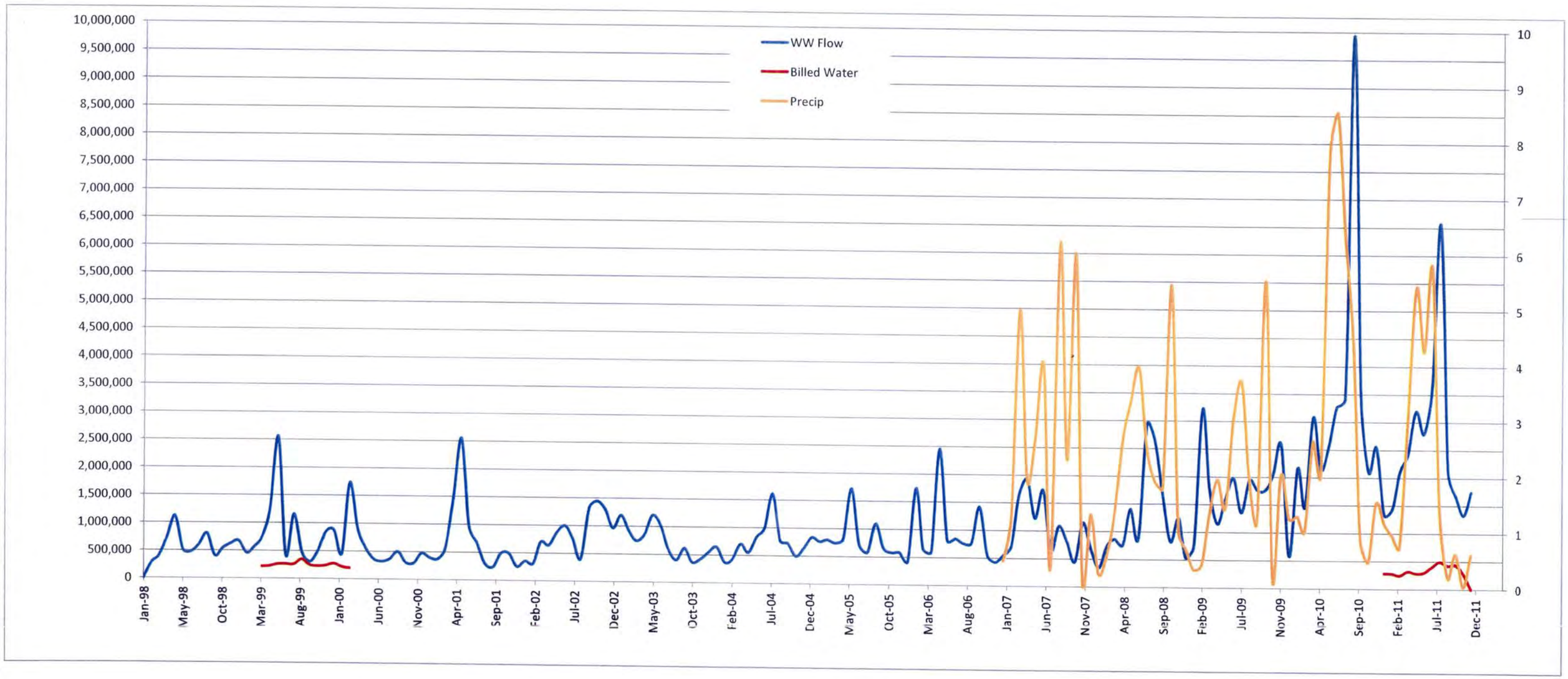
Appendix B
Environmental Review Comment Letters

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com

Appendix C
Wastewater Flow Records

STOCKWELL
ENGINEERS

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com


WW Flow
Billed Water
Precip
10,000,000
9,500,000
9,000,000
8,500,000
8,000,000
7,500,000
7,000,000
6,500,000
6,000,000
5,500,000
5,000,000
4,500,000
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
10
9
8
7
6
5
4
3
2
1
0
Jan-98
May-98
Oct-98
Mar-99
Aug-99
Jan-00
Jun-00
Nov-00
Apr-01
Sep-01
Feb-02
Jul-02
Dec-02
May-03
Oct-03
Feb-04
Jul-04
Dec-04
May-05
Oct-05
Mar-06
Aug-06
Jan-07
Jun-07
Nov-07
Apr-08
Sep-08
Feb-09
Jul-09
Nov-09
Apr-10
Sep-10
Feb-11
Jul-11
Dec-11

	1998			1999				
Month	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	Billed Water (gal)	Billed Water (gpcpd)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)
January		0			0	676,464	162	
February	282,933	76			0	459,300	122	
March	407,100	99			0	566,800	135	
April	747,000	187		212,000	52	747,000	184	
May	1,119,400	272		224,000	54	1,260,224	301	
June	514,200	129		257,013	63	2,553,400	630	
July	477,200	116		260,000	62	429,600	103	
August	605,400	147		254,000	61	1,159,457	277	
September	806,500	202		347,000	86	481,400	119	
October	408,100	99		243,000	58	304,800	73	
November	545,200	137		227,000	56	504,600	125	
December	625,566	152		237,000	57	846,377	202	
Total	6,538,599		0.0	2,261,013		9,989,422		0.0
Average Day	19,577			8,222		27,368		
Average (gpcpd)		147			61		203	

	2000					2001			2002		
Month	Billed Water (gal)	Billed Water (gpcpd)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)
January	271,000	64	874,590	207		399,000	91		353,000	78	
February	215,000	55	458,335	116		375,000	95		311,000	76	
March	194,000	46	1,737,000	412		559,000	128		700,000	155	
April		0	914,500	224		1,457,000	344		643,300	147	
May		0	567,900	135		2,551,000	584		870,800	192	
June		0	367,956	90		967,000	229		997,000	228	
July		0	322,000	76		677,000	155		772,800	171	
August		0	367,000	87		301,000	69		403,750	89	
September		0	502,000	123		239,000	57		1,317,970	301	
October		0	304,000	72		490,000	112		1,445,142	319	
November		0	297,000	73		488,000	115		1,302,000	297	
December		0	476,000	113		251,000	57		965,000	213	
Total	680,000		7,188,281		0.0	8,754,000		0.0	10,081,762		0.0
Average Day	7,473		19,640			23,984			27,621		
Average (gpcpd)		55		144			170			189	

	2003			2004			2005		
Month	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)
January	1,198,000	256		647,000	134		837,000	168	
February	912,000	216		368,000	81		763,000	169	
March	741,000	158		431,000	89		798,000	160	
April	859,000	190		703,000	150		741,000	153	
May	1,202,264	257		555,000	115		814,000	163	
June	1,026,305	227		835,000	178		1,724,000	357	
July	599,000	128		989,000	205		720,000	144	
August	404,000	86		1,610,000	333		580,000	116	
September	617,000	136		778,000	166		1,097,000	227	
October	365,000	78		726,560	150		655,000	131	
November	426,000	94		495,000	106		579,686	120	
December	547,000	117		638,000	132		581,000	116	
Total	8,896,569		0.0	8,775,560		0.0	9,889,686		0.0
Average Day	24,374			23,977			27,095		
Average (gpcpd)		161			154			168	

	2006			2007			2008			2009		
Month	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)
January	424,000	82		552,000	104	0.45	343,000	63	0.23	754,000	134	0.32
February	1,745,000	375		732,000	153	1.29	746,000	146	0.57	3,222,000	636	0.41
March	655,000	127		1,643,000	310	4.97	863,000	158	1.34	1,780,000	317	1.31
April	606,000	122		1,930,000	376	1.93	761,000	144	2.68	1,153,000	212	1.95
May	2,453,000	477		1,223,000	231	2.63	1,408,000	258	3.34	1,608,000	287	1.43
June	803,000	161		1,731,000	337	3.98	881,000	167	3.95	1,975,000	364	3.07
July	843,000	164		647,000	122	0.32	2,931,000	537	2.52	1,357,000	242	3.71
August	757,000	147		1,091,125	206	6.18	2,641,000	484	1.91	1,940,330	346	1.93
September	767,000	154		807,000	157	2.27	1,652,000	313	1.78	1,762,000	324	1.21
October	1,419,000	276		446,000	84	5.98	825,000	151	5.44	1,762,000	314	5.52
November	552,000	111		1,152,000	225	0.04	1,252,000	237	1.01	2,047,000	377	0.17
December	426,000	83		691,000	130	1.30	538,000	99	0.70	2,580,000	460	2.03
Total	11,450,000		0.0	12,645,125		31.3	14,841,000		25.5	21,940,330		23.1
Average Day	31,370			34,644			40,549			60,110		
Average (gpcpd)		189			203			230			332	

	2010					2011				
Month	Billed Water (gal)	Billed Water (gpcpd)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)	Billed Water (gal)	Billed Water (gpcpd)	WW Flow (gal)	WW Flow (gpcpd)	Precip (in)
January	271,000	47	582,000	101	1.25	280,000	49	1,341,000	233	1.17
February			2,164,000	416	1.29	274,000	53	1,442,000	277	0.95
March			1,463,000	254	1.02	243,000	42	2,105,000	365	0.74
April			3,083,560	553	2.65	315,000	56	2,436,000	437	3.09
May			2,148,000	373	2.03	283,000	49	3,203,000	555	5.42
June			2,555,000	458	7.83	294,000	53	2,791,000	500	4.26
July			3,275,000	568	8.55	392,000	68	3,608,000	626	5.76
August			3,419,000	593	6.26	489,000	85	6,561,000	1138	1.40
September			9,939,000	1781	4.46	422,000	76	2,135,000	383	0.20
October			3,476,000	603	0.91	434,000	75	1,672,000	290	0.63
November			2,105,000	377	0.47	276,000	49	1,329,000	238	0.04
December			2,551,000	442	1.54		0	1,746,000	303	0.62
Total	271,000		36,760,560		38.3	3,702,000		30,369,000		24.3
Average Day	8,742		100,714			11,084		83,203		
Average (gpcpd)		47		541			60		447	

Average Billed Water (Jan, Feb, Dec) - 9,560 gpd
Average Wastewater Flow (Jan, Feb, Dec) - 30,809 gpd
Average Wastewater Flow - 38,873 gpd

Appendix D
Original Wastewater Collection As-builts

STOCKWELL
ENGINEERS

600 N. Main Ave, Suite 100
Sioux Falls, SD 57104
Ph. (605) 338-6668
Fax. (605) 338-8750
www.stockwellengineers.com

SANITARY SEWER SYSTEM

PRAIRIE MEADOWS SANITARY DISTRICT

MINNEHAHA COUNTY, SOUTH DAKOTA

1977

BOARD OF TRUSTEES

CAL LAMMERS PRESIDENT
WILLIAM DEVRIES TRUSTEE
DENNIS BARTLING TRUSTEE

CLERK
WILLIAM DEVRIES

ATTORNEY
MRS. LEE BURD

AS-BUILT PLANS

DEP-EPA PROJECT C460264

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

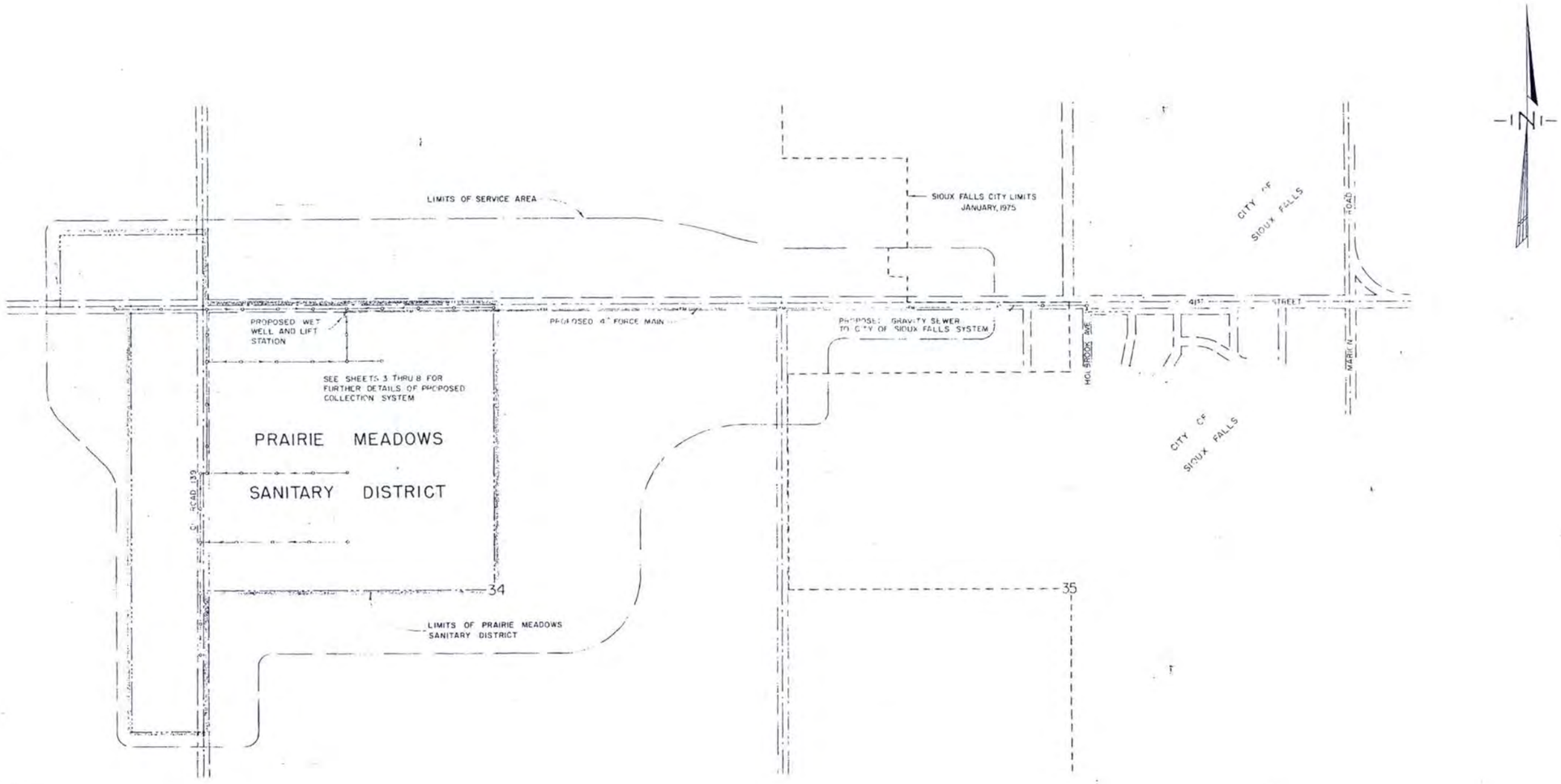
TITLE SHEET

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS SIOUX FALLS, S. DAK.

DATE	ITEM	REMARKS	BY
8-5-77	AS-BUILT PLANS		DCH

REVISIONS

DESIGNED BY D C K	DRAWN BY D D H M O P	SCALE —	DATE 6/20/75
CHECKED BY D C K	CD DATA D W O	SHEET 1 OF 8 SHEETS	FILE NO. A



DATE	ITEM	REMARKS	BY
8-25-77	As-Built Plans		D.L.H.

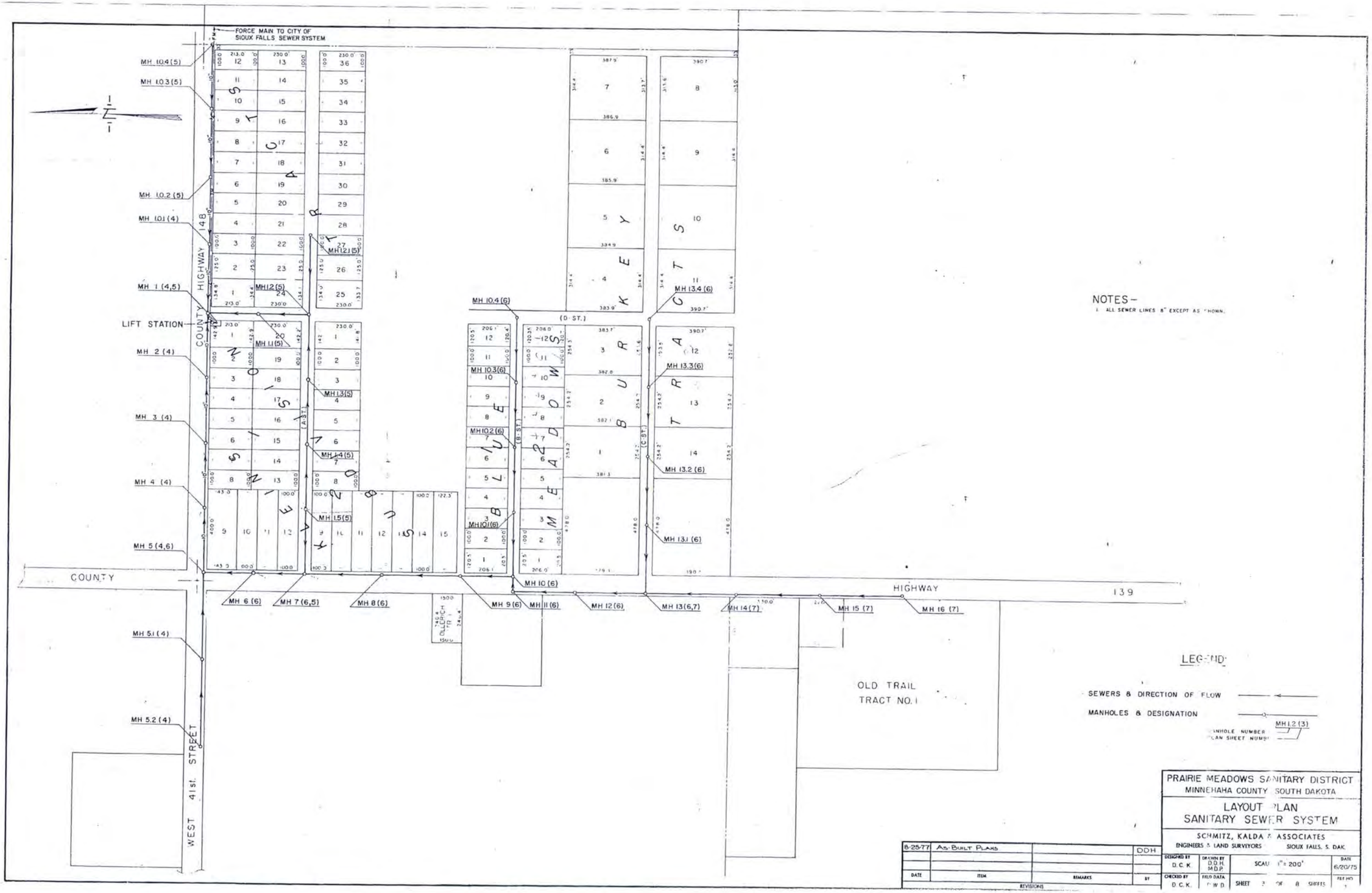
REVISIONS

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

LOCATION PLAN
SANITARY SEWER SYSTEM

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS SIOUX FALLS, S. DAK.

DESIGNED BY	DRAWN BY	SCALE 1"=500'	DATE
D.C.K.	D.D.H.		6/20/75
CHECKED BY	FIELD DATA	SHEET 2 OF 8 SHEETS	FILE NO.
D.C.K.	D.W.D.		4



NOTES –
1. ALL SEWER LINES 8" EXCEPT AS SHOWN.

DATE	ITEM	REMARKS	BY
8-25-77	As-Built Plans		DDH

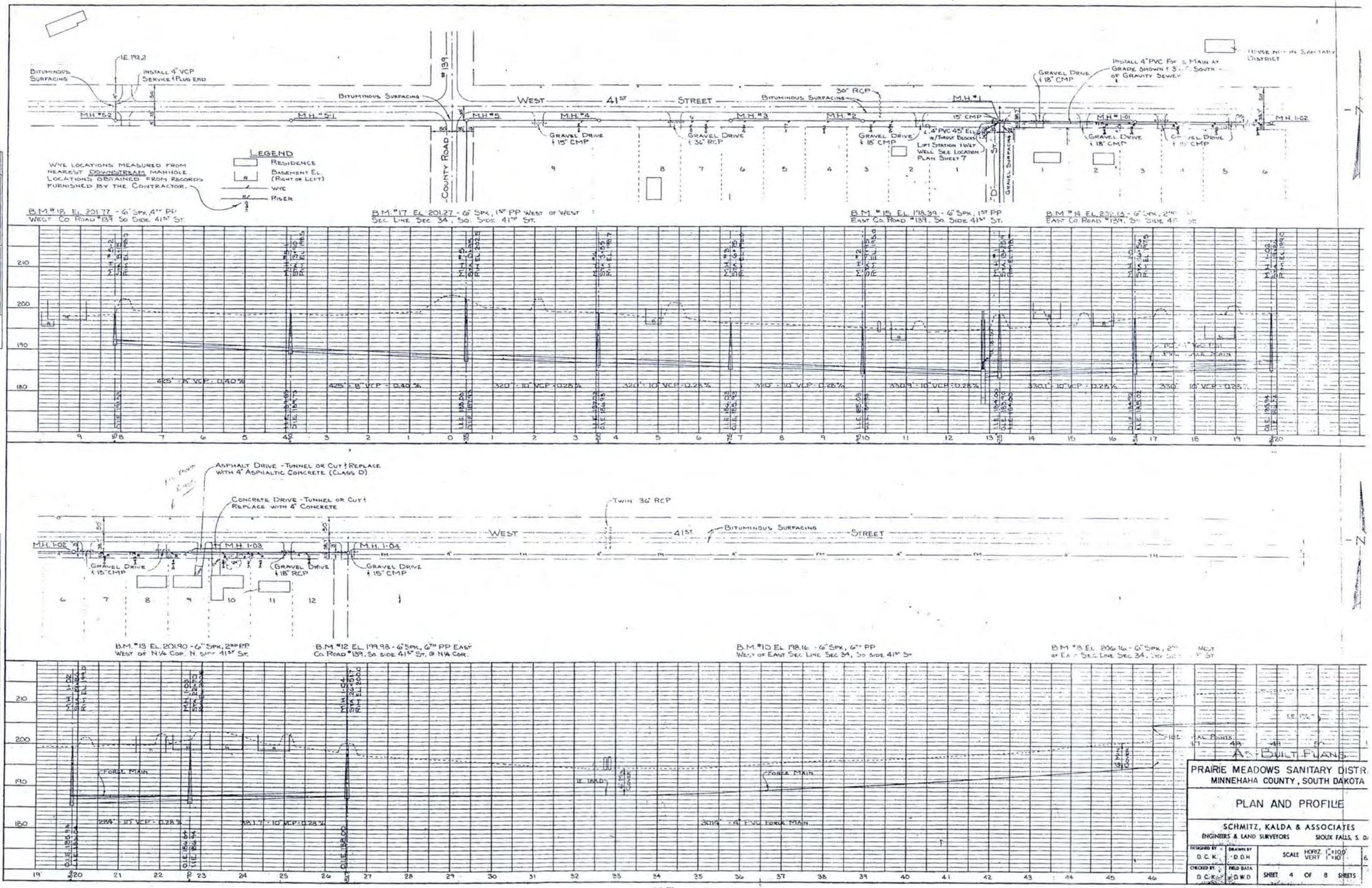
REVISIONS

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY SOUTH DAKOTA

LAYOUT PLAN
SANITARY SEWER SYSTEM

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS SIOUX FALLS, S. DAK.

DESIGNED BY	DRAWN BY	SCALE	DATE
D.C.K.	D.D.H. M.D.P.	1" = 200'	6/20/75
CHECKED BY	FIELD DATA	SHEET 3 OF 8 SHEETS	FILE NO.
D.C.K.	F.W.D.		



PLAN — Surveyed; Plotted; Alignment Checked; Rt. of Way Checked; Note Book; No.

PROFILE — Surveyed; Plotted; Grades Checked; B.M. Noted; No. 1-1-1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46; By; Date

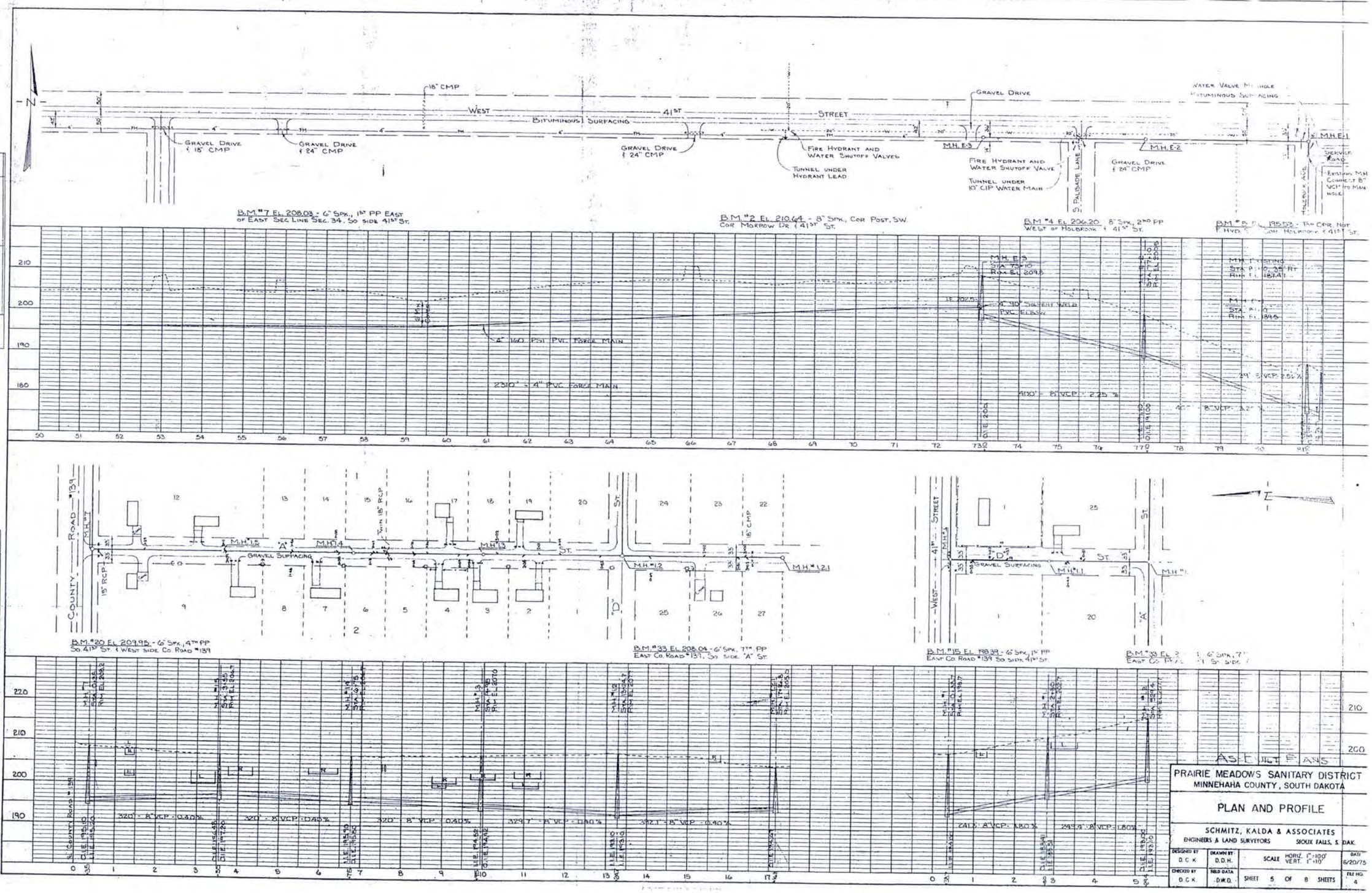
As-Built Plans

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

PLAN AND PROFILE

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS — SIOUX FALLS, S. DAK.

Designed By	Drawn By	Scale	
D. C. K.	D. D. H.	Horiz. 1" = 100'	
Checked By	Field Data	Vert. 1" = 10'	
D. C. K.	D. W. D.	Sheet 4 of 8 Sheets	



PLAN — SURVEYED, PLOTTED, ALIGNMENT CHECKED, B.S. OF MKS CHECKED — NOTE BOOK NO. — BY — DATE

PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, B.S. NOTED — NOTE BOOK NO. — BY — DATE

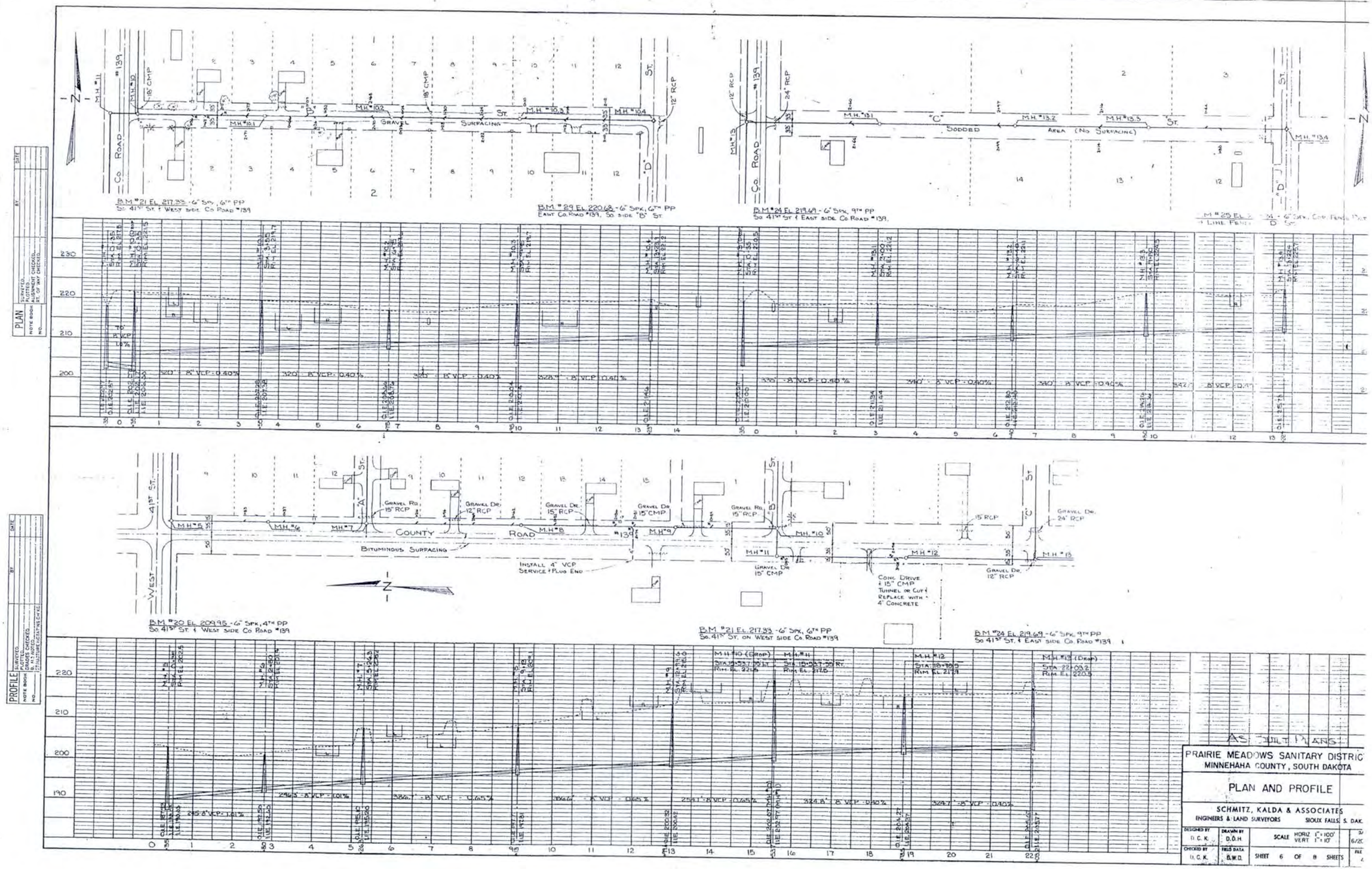
AS BUILT PLANS

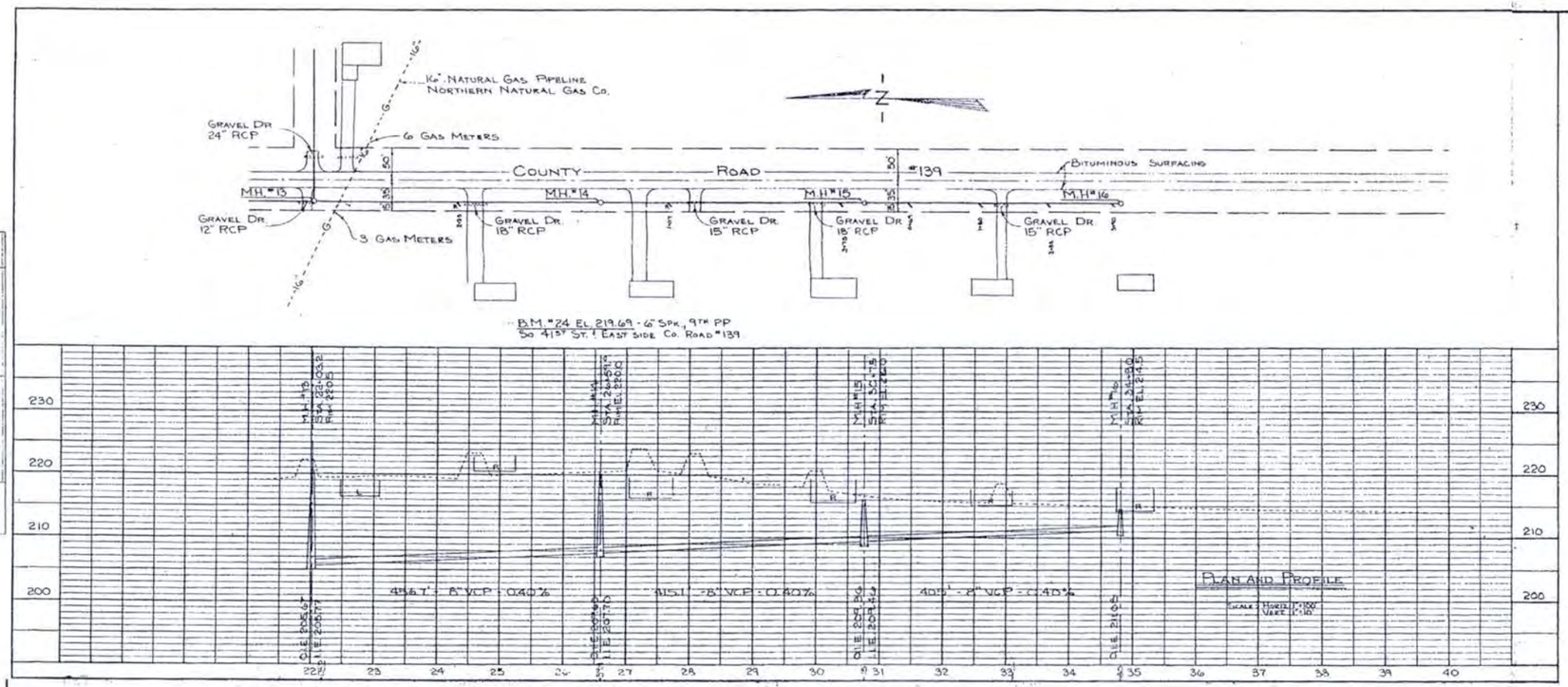
PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

PLAN AND PROFILE

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS — SIOUX FALLS, S. DAK.

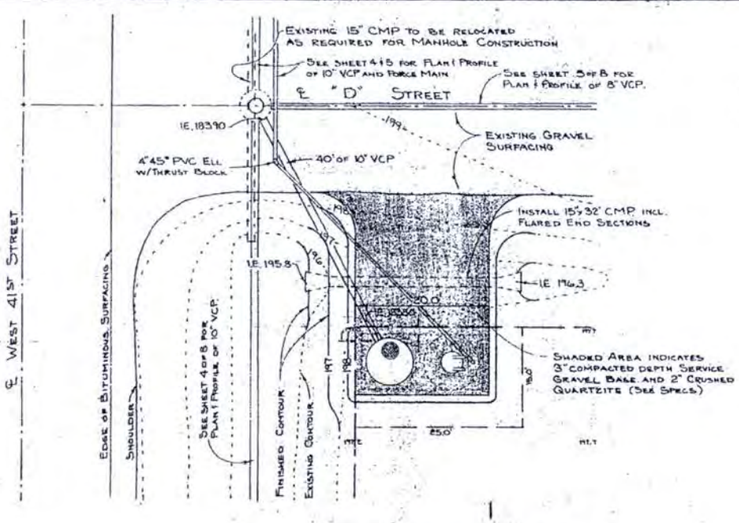
DESIGNED BY	DRAWN BY	SCALE	DATE
D. C. K.	D.D.H.	HORIZ. 1"=100' VERT. 1"=10'	6/20/75
CHECKED BY	FIELD DATA	SHEET 5 OF 8 SHEETS	FILE NO.
D. C. K.	D.W.D.		4


PLAN
PROFILE
Co. Road #139
41st St.
West
County Road #139
Bituminous Surfacing
Gravel Surfacing
Sodded Area (No Surfacing)
B.M. #21 El. 217.33 - 6" Spk., 6th PP
So. 41st St. & West side Co. Road #139
B.M. #29 El. 220.68 - 6" Spk., 6th PP
East Co. Road #139, So. side "B" St.
B.M. #24 El. 219.69 - 6" Spk., 9th PP
So. 41st St. & East side Co. Road #139.
B.M. #20 El. 209.95 - 6" Spk., 4th PP
So. 41st St. & West side Co. Road #139
B.M. #21 El. 217.33 - 6" Spk., 6th PP
So. 41st St. on West side Co. Road #139
B.M. #24 El. 219.69 - 6" Spk., 9th PP
So. 41st St. & East side Co. Road #139
Install 4" VCP Service & Plug End
Conc. Drive & 15" CMP Tunnel or Cut & Replace with 4" Concrete
AS BUILT PLANS
PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA
PLAN AND PROFILE
SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS
SIOUX FALLS, S. DAK.
DESIGNED BY D. C. K.
DRAWN BY D.D.H.
CHECKED BY D. C. K.
FIELD DATA B.W.D.
SCALE HORIZ 1" = 100' VERT 1" = 10'
SHEET 6 OF 8 SHEETS



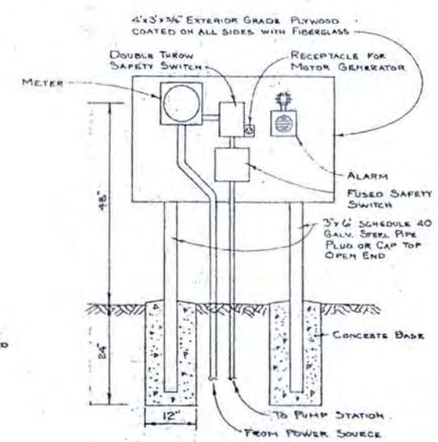
Construction Notes

1. Contractor shall contact Northwestern Bell Telephone Company, Sioux Falls, S.D. and Northern Natural Gas Company, Harrisburg, S.D. for location of underground utilities.
2. Topsoil shall be replaced to a compacted depth of 6 inches on all disturbed areas within the highway R/W (County Road 139 & West 41st Street).
3. Driveway culverts disturbed during construction shall be replaced to original condition with existing culvert or new culvert of same type and size.
4. Driveway surfacing shall be replaced with gravel surfacing to a compacted depth of 3 inches, or as shown on the plans. Payment shall be made for special surfacing. Cost of replacement of bituminous and concrete drives shall be included in the price bid for sanitary sewer.
5. Gravel surfaced streets shall receive gravel surfacing to a compacted depth of 6 inches for an average width of 24 feet.
6. Final location of service wyes to be determined during construction.



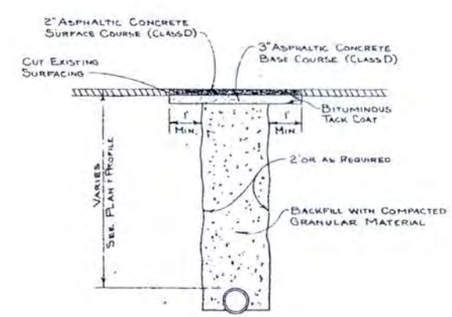
Layout Plan - Lift Station

Scale 1"=10'



Detail - Lift Station Electrical Panel

Scale ¾"=1'



Detail - Bituminous Surfaced Road Crossing

Scale ½"=1'

As-Built Plans

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

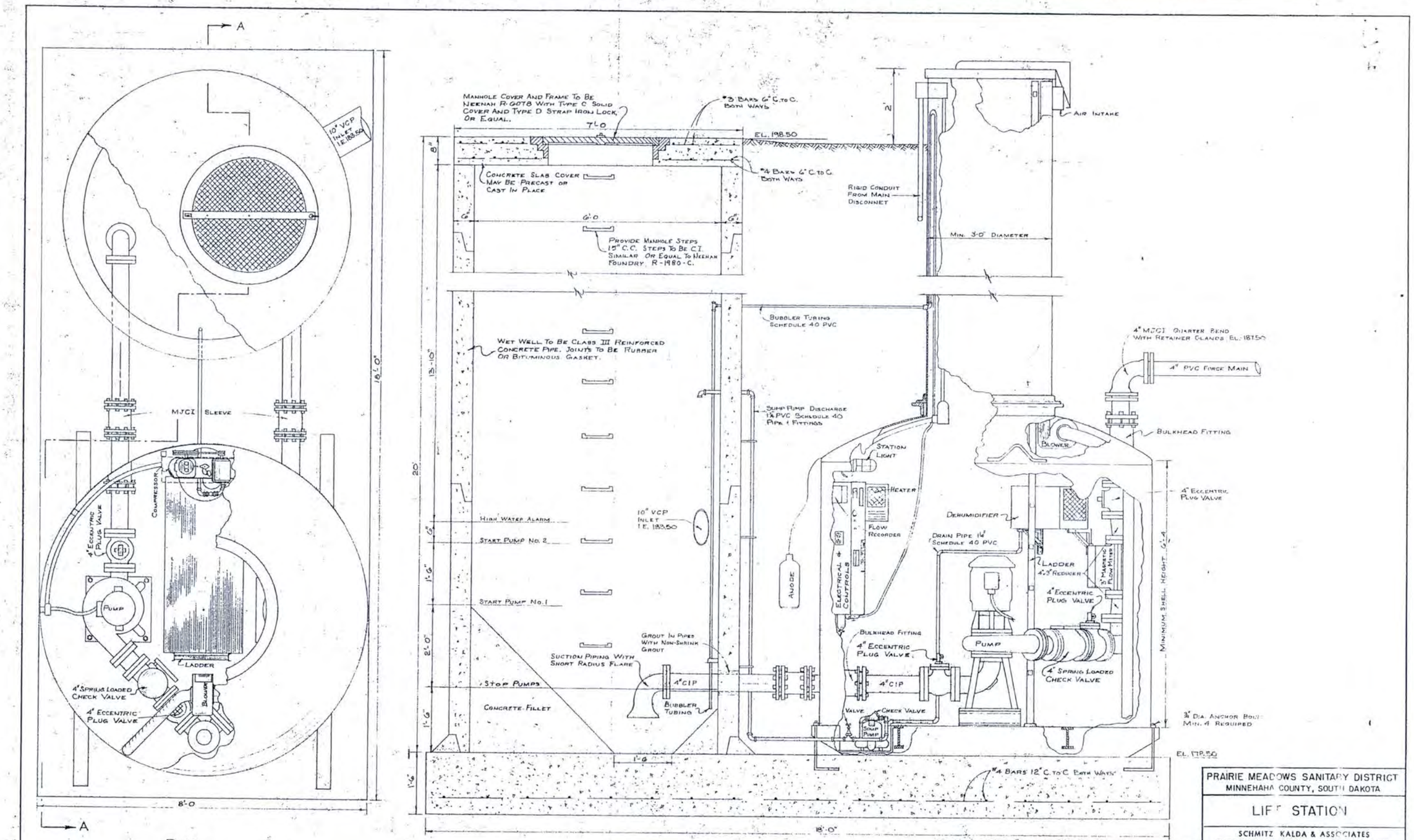
PLAN AND PROFILE
CONSTRUCTION DETAILS

SCHMITZ, KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS — SIOUX FALLS, S. DAK.

Designed by	Drawn by	Scale	Date
D.C.K.	D.H.	As Shown	6/20/75
Checked by	Reviewed by	Sheet 7 of 8 Sheets	File No.
D.C.K.	D.H.B.		4

Date	Item	Remarks	By

Revisions



DATE	ITEM	REMARKS	BY
8-25-78	As-Built Plans		D.D.H.

REVISIONS

PRAIRIE MEADOWS SANITARY DISTRICT
MINNEHAHA COUNTY, SOUTH DAKOTA

LIFT STATION

SCHMITZ KALDA & ASSOCIATES
ENGINEERS & LAND SURVEYORS SIOUX FALLS, S. DAK.

DESIGNED BY	DRAWN BY	SCALE	DATE
D.C.K.	M.D.P. D.D.H.	1" = 1'	6/20/75
CHECKED BY	FIELD DATA	SHEET 8 OF SHEETS	REF. DWG.
D.C.K.	D.W.D.		4

WRAP Review Sheet
Sanitary/Strom Sewer Facilities Funding Application
Applicant: Town of Yale

Project Title:	Wastewater Treatment Facility Riprap
Funding Requested:	$327,000
Other Proposed Funding:	$100,000 – James River WDD Grant $16,000 – Remaining amount from CWSRF-01 loan
Total Project Cost:	$443,000
Project Description:	In June of 2011, the Board awarded the town of Yale a Clean Water SRF loan to construct a 5-acre, two-cell total retention stabilization pond and repair the collection system and lift stations. At that time, there was not enough funding to riprap the new wastewater treatment cells. Since then there has been considerable erosion of the berms. This project will regrade the inner pond embankment and install geotextile fabric and riprap.
Alternatives Evaluated:	No additional alternatives were considered for this project. This project will regrade the inner pond embankment and install geotextile fabric and riprap.
Implementation Schedule:	The town of Yale plans to advertise bids for this project in July 2016 with a completion date of December 2016.
Service Population:	108
Current Domestic Rate:	$40.00 flat rate

Interest Rate: 3.25% Term: 30 Security: Project Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If funding is provided as 100% loan, Yale would have to enact a surcharge of approximately $29.25. When added to current rate of $40/month residents would be paying $69.25/month.

25% Funding Subsidy:	$81,750 subsidy with a loan of $245,250.
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $245,250, Yale would have to enact a surcharge of approximately $21.80 thereby paying a rate of $61.80/month.

50% Funding Subsidy:	$163,500 subsidy with a loan of $163,500.
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $163,500, Yale would have to enact a surcharge of approximately $14.55thereby paying a rate of $54.55/month.

75% Funding Subsidy:	$245,250 subsidy with a loan of $81,750.
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $81,750, Yale would have to enact a surcharge of approximately $7.30thereby paying a rate of $47.30/month.

ENGINEERING REVIEW COMPLETED BY: CLAIRE PESCHONG

FINANCIAL REVIEW COMPLETED BY: DAVE RUHNKE

RECEIVED
JAN 04 2015
Division of Financial
& Technical Assistance

TOWN OF YALE, SOUTH DAKOTA

WASTEWATER IMPROVEMENTS

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION

PREPARED BY:
NORTHEAST COUNCIL OF GOVERNMENTS
DECEMBER 2015

Sanitary/Storm Sewer Facilities Funding Application

Clean Water State Revolving Fund Program (CWSRF)
Consolidated Water Facilities Construction Program (CWFCP)

Applicant: Town of Yale	Proposed Funding Package	
Address: 104 Main Ste. A Yale, SD 57386	Requested Funding	$327,000
	Local Cash	
	Other: Previous CWSRF	$16,569
Subapplicant:	Other: JRWDD	$100,000
DUNS Number: 833105120	Other:	
	TOTAL	$443,569

Project Title: Yale Lagoon Project

Description:

The Town of Yale is proposing to place rip-rap at the lagoon.

The Applicant Certifies That:

I declare and affirm under the penalties of perjury that this application has been examined by me and, to the best of my knowledge and belief, is in all things true and correct.

Dennis Decker	Dennis S. Decker	12-22-15
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: NECOG

Contact Person: Ted Dickey

Mailing Address: 416 Production Street N. Suite 1

City, State, and Zip: Aberdeen, SD 57401

Telephone Number: (605) 626-2595 Fax: (605) 626-2975

Email address: ted@necog.org

Consulting Engineering Firm: Banner Associates

Contact Person: Dennis Rebelein

Mailing Address: PO Box 298

City, State, and Zip: Brookings, SD 57006

Telephone Number: (605) 692-6342 Fax: (605) 692-5714

Email address: dennisr@bannerassociates.com

Legal Counsel's Firm: Kaufman Law Office

Contact Person: Gerald Kaufman

Mailing Address: 239 Wisconsin Avenue

City, State, and Zip: Huron, SD 57350

Telephone Number: (605) 352-9398 Fax:

Email address:

Bond Counsel's Firm: Meierhenry Sargent

Contact Person: Todd Meierhenry

Mailing Address: 315 S. Phillips Avenue

City, State, and Zip: Sioux Falls, SD 57104

Telephone Number: (605) 336-3075 Fax:

Email address: todd@meierhenrylaw.com

Budget Sheet

Cost Classification	A CWSRF/ CWFCP	B Existing CWSRF	C JRWDD	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal & Bond Counsel	$3,270					$3,270
D. Other						
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$40,600					$40,600
B. Project Inspection Fees	$21,500					$21,500
C. Other						
4. Construction & Improvements	$227,078	$16,569	$100,000			$343,647
5. Equipment						
6. Contractual Services						
7. Other						
8. Other						
9. Subtotal (Lines 1-8)	$292,448	$16,569	$100,000			$409,017
10. Contingencies	$34,552					$34,552
11. Total (Lines 9 and 10)	$327,000	$16,569	$100,000			$443,569
12. Total %	73.72%	3.74%	22.54%	0.00%	0.00%	100.00%

Proposed Method of Financing

	Secured Funds	Unsecured Funds	Date Unsecured Funds Anticipated
Local Cash(Identify Source)			
Other (Explain) Existing CWSRF	$16,569		
Other (Explain) James River Water Development District	$100,000		
Other (Explain)			
Total	$116,569		$116,569

Other Funds to be Borrowed

	Amount	Rate	Term	Annual Debt Service	Security or Collateral Pledged
Other CWSRF	$327,000	3.25%	30	$17,077	Wastewater Revenue Surcharge Bond
Other					
Other					

Please attach copies of commitment letters that contain specific terms and conditions for each source of financing.

General Information

The month and day your fiscal year begins: January 1

Population Served Current: 108 2010 108 2000 118

Top three employers within 30 miles	Number of Employees	Type of Business
Dakota Provisions	850	Turkey Processing Plant
Huron Public School System	365	School
Huron Hospital	290	Hospital

Repayment Information

Interest rate you are applying for: 3.25% Term: 30

What security is being pledged toward the repayment of this loan?
(Political Subdivisions Only)

- ☐ 1. General Obligation Bond (Requires Bond Election)
- ☐ 2. Revenue Bond
- ☒ 3. Project Surcharge Revenue Bond
- ☐ 4. Sales Tax Revenue Bond

Documents That Must Be Submitted With The Application

Financial Documents

1. Most recent audited or unaudited financial statements to include specific accounting for the wastewater fund.
2. Current year's budget for the wastewater fund.
3. Amortization schedules for all existing debt secured by proposed revenue pledged.

Planning and Legal Documents

1. Current governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of the Sanitary/Storm Sewer Facilities Funding application and signing of payment requests. This resolution must also include the maximum amount requested and description of proposed project.
3. Documentation that the applicant has an active registration on the Federal System for Award Management (SAM) database.

   (https://www.sam.gov)
4. Facilities Plan.
5. Cultural Resources Effects Assessment Summary.

Items 6-8 apply to Non-profit Entities only

6. By-laws.
7. Articles of Incorporation.
8. Certificate of Good Standing from Secretary of State.

Wastewater Fund Debt Information

Year	2014					
Purpose	New Lagoon and Wastwater Lin					
Security Pledged	Wastewater Surcharge Bond					
Amount	$258,983					
Maturity Date (mmm/yyyy)	11/44					
Debt Holder	First National Bank					
Debt Coverage Requirement	110%					
Avg. Annual Required Payment	$13,683					
Outstanding Balance	$256,339					

Comments:

Wastewater Fund Cash Flow Information

Negative cash should be in (Decrease) format	Prior Year	Prior Year	Current Year	Future Year	Future Year	Future Year
Fiscal Year	2013	2014	2015	2016	2017	2018
Operating Revenue						
Base Fees	$11,442	$9,559	$9,900	$9,900	$9,900	$9,900
Surcharge Fees	$10,307	$15,506	$16,500	$16,500	$35,300	$35,300
Other (Explain)						
Operating Expenses						
Personal Services	$7		($538)			
Chemical, Material & Supplies			($3,600)	($3,668)	($3,600)	($3,600)
Electric & Other Utilities			($600)	($600)	($600)	($600)
Other (Explain)			($662)	($1,132)	($700)	($700)
Operating Net Cash	$21,756	$25,065	$21,000	$21,000	$40,300	$40,300
Nonoperating Cash Flow						
Interest Revenue						
Transfers In (Explain)	$525,359	$844,939		$443,000		
Fixed Asset Purchases			($4,000)	($3,000)	($2,000)	($2,000)
Transfers Out (Explain)	($521,831)	($822,692)		($443,000)		
Principal Debt Payments		($1,895)	($6,000)	($6,000)	($14,000)	($14,000)
Interest Debt Payments		($3,000)	($9,000)	($9,000)	($21,300)	($21,300)
Other (Explain)						
Nonoperating Net Cash	$3,528	$17,352	($19,000)	($18,000)	($37,300)	($37,300)
Increase (Decrease) Cash	$25,284	$42,417	$2,000	$3,000	$3,000	$3,000
Beginning Cash Balance	$13,742	$39,026	$81,443	$83,443	$86,443	$89,443
Ending Cash Balance	$39,026	$81,443	$83,443	$86,443	$89,443	$92,443
Restricted Balance						
Unrestricted Balance	$39,026	$81,443	$83,443	$86,443	$89,443	$92,443

Additional Comments (Explanations)

2013 was the first year of the new lagoon project. The $500,000+ income and expenses is the lagoon project.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber

Wastewater Fees:

** Attach current and proposed rate ordinances or resolutions and rate schedules.

Municipal or Sanitary District - monthly rates at 5,000 gallons (670 cubic feet)

Other Community System - monthly rates at 7,000 gallons (935 cubic feet)

Check one: [X] Incorporated Municipality or Sanitary District

or

[ ] Other Community System

Monthly	Current Rate	Proposed Rate	# of Accounts	Average use Gallons/Cubic Feet
Domestic	$40.00	$73.00	50	5000
Business	$40.00	$73.00	4	5000
Other:				
Other:				

Are fees based on usage or flat rate? Flat

When is proposed fee scheduled to take effect? May 2016

When did the current fee take effect? March 2013

What was the fee prior to the current rate? $6.00

Storm Sewer Projects Only: Does applicant have a separate storm water fee? No

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules.

Two Largest Customers	Type of Business	% of System Revenue
Individual	Residential	3%
Individual	Residential	3%

Property Tax Information

(Complete section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year	_____	_____	_____
Assessed Valuation	_____	_____	_____

Three year levies and collection trend:

Year	_____	_____	_____
Amount Levied	_____	_____	_____
Collected	_____	_____	_____

Five Largest Taxpayers	Description	Assessed Valuation
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Comments:

General Fund Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Sales Tax Information

(Complete section only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

Comments:

Sales Tax Debt Information

Year						
Purpose						
Security Pledged						
Amount						
Maturity Date (mmm/yyyy)						
Debt Holder						
Debt Coverage Requirement						
Avg. Annual Required Payment						
Outstanding Balance						

Comments:

Facilities Plan Checklist

Before submitting the application, please take a few moments to complete the following checklist. Addressing these items prior to submitting the application will expedite the review process.

Clean Water Facilities Plan document can be found at http://denr.sd.gov/dfta/wwf/cwsrf/sanstsewerfunding.aspx

Checklist of SRF Facilities Plan Requirements

Have the following items been addressed?

- Submission of a Facilities Plan to the department that addresses those items found in the Wastewater Facilities Plan document. ☒
- A public hearing held discussing the project and the use of an SRF loan to finance the project. ☒
- Minutes of the public hearing prepared and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The affidavit of publication of the public hearing received and submitted to the department's engineer for inclusion into the final Facilities Plan. ☒
- The four review agencies contacted and responses received for inclusion into the final Facilities Plan. ☐
- The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. ☐

Cost and Effectiveness Certification Form

This is to certify compliance with Subtitle A, Section 5002, Subsection 602(b)(13) of the Water Resources Reform Development Act of 2014 in that project has been studied and evaluated for the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is sought; and to the maximum extent practicable, the project or activity selected maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account (i) the cost of constructing the project; (ii) the cost of operating and maintaining the project over the life of the project; and (iii) the cost of replacing the project.

Applicant Name:	Town of Yale

Project Name:	Yale Lagoon Project

We certify that the proposed project is in compliance as described above.

Applicant's Authorized Signatory

Signature: _____

Printed Name: Dennis Decker

Title: Town President

Date: December 22, 2015

Project Engineer

Signature: _____

Printed Name: Gregg Jorgenson

License #: SD # 5823

Date: December 22, 2015

Certification of Point Source Needs Categories

Identify the loan amount associated with the needs categories described below. If the loan addresses needs in more than one category, please break down the total amount into estimated amounts for each category.

Category	Definition	Loan Amount
I	Secondary Treatment and Best Practicable Wastewater Treatment Technology. Costs for facilities to achieve secondary levels of treatment, regardless of the actual treatment levels required at the facility site. Incremental costs for treatment levels above secondary are to be reported in Category II. For purposes of the Survey, "best practicable wastewater treatment technology" and secondary treatment are considered synonymous. Identified alternative conveyance systems (e.g., small diameter gravity, pressure and vacuum sewers) are to be included in Category I.	$327,000
II	Advanced Treatment. Incremental costs above secondary treatment for facilities which require advanced levels of treatment. This requirement generally exists where water quality standards require removal of such pollutants as phosphorus, ammonia, nitrates, or organic and other substances. In addition, this requirement exists where removal requirements for conventional pollutants exceed 85 percent.	
III A	Infiltration/Inflow Correction. Costs for correction of sewer system infiltration/inflow (I/I) problems. Costs should also be reported for the preparation of preliminary I/I analysis or for a detailed sewer system evaluation survey.	
III B	Major Sewer System Rehabilitation. Replacement and/or major rehabilitation of existing sewer systems. Costs are reported if the corrective actions are necessary to the total integrity of the system. Major rehabilitation is considered to be extensive repair of existing sewer beyond the scope of normal maintenance programs (i.e., where sewers are collapsing or structurally unsound).	

Category	Definition	Loan Amount
IV A	New Collectors and Appurtenances. Costs of construction of new collector sewer systems and appurtenances designed to correct violations caused by raw discharges or seepage to waters from septic tanks, or to comply with Federal, State, or local actions.	
IV B	New Interceptors and Appurtenances. Costs for new interceptor sewers and pumping stations necessary for the bulk transmission of clean water.	
V	Correction of Combined Sewer Overflows. Costs for facilities, including conveyance, storage, and treatment, necessary to prevent and/or control periodic bypassing of untreated wastes from combined sewers to achieve water quality objectives and which are eligible for Federal funding. It does not include treatment and/or control of storm waters in separate storm and drainage systems.	
VI	New Construction or Rehabilitation of Storm Sewer Systems and Appurtenances. Costs of new construction or rehabilitation associated with the bulk transmission or detention of storm sewer flows. This category includes only runoff projects in communities with Phase I or Phase II storm water permits.	
	TOTAL:	$327,000

Dennis Decker, Town President

Name & Title of Authorized Representative

Signature of Authorized Representative

12/22/2015

Date

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forger, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. § 1001, a false statement may result in a fine of up to $10,000 or imprisonment for up to 5 years, or both.

Dennis Decker, Town President

Name & Title of Authorized Representative

Signature of Authorized Representative

12/22/2015

Date

☐ I am unable to certify to the above statements. Attached is my explanation

RESOLUTION

RESOLUTION NO.

RESOLUTION AUTHORIZING AN APPLICATION FOR FINANCIAL ASSISTANCE, AUTHORIZING THE EXECUTION AND SUBMITTAL OF THE APPLICATION, AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO CERTIFY AND SIGN PAYMENT REQUESTS.

WHEREAS, the City of Yale (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to placing rip-rap at their lagoon (the "Project"); and

WHEREAS, the City has determined that financial assistance will be necessary to undertake the Project and an application for financial assistance to the South Dakota Board of Water and Natural Resources (the "Board") will be prepared; and

WHEREAS, it is necessary to designate an authorized representative to execute and submit the Application on behalf of the City and to certify and sign payment requests in the event financial assistance is awarded for the Project,

NOW THEREFORE BE IT RESOLVED by the City as follows:

1. The City hereby approves the submission of an Application for financial assistance in an amount not to exceed $327,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Town President is hereby authorized to execute the Application and submit it to the South Dakota Board of Water and Natural Resources, and to execute and deliver such other documents and perform all acts necessary to effectuate the Application for financial assistance.

3. The Town President is hereby designated as the authorized representative of the City to do all things on its behalf to certify and sign payment requests in the event financial assistance is awarded for the Project.

Adopted at Yale, South Dakota, this 22nd day of December, 2015.

APPROVED:

Town President
City of Yale

(Seal)
Attest: Kristen Beil
City Finance Officer

FACILITIES PLAN

Opinion of Probable Project Cost

BANNER
Engineering | Architecture | Surveying
Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006
Tel | 605.692.6342 Fax | 605.692.5714
Toll Free | 1.855.323.6342
www.bannerassociates.com

Location: Yale WWTF
Date: 8/28/2015
Project: Riprap Installation
BAI 21470.xx.xx

ITEM NO.	SPEC SECTION	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1		Mobilization	1	LS	$ 25,000.00	$ 25,000.00
2		Riprap	4,100	CY	$ 55.00	$ 225,500.00
3		Geotextile Fabric	7,320	SY	$ 3.50	$ 25,620.00
4		Seeding	2	Acres	$ 2,400.00	$ 4,800.00
5		Fence Removal	200	LF	$ 1.00	$ 200.00
6		Fence Installation	200	LF	$ 5.00	$ 1,000.00
7		Land Use Reinbursment	1	LS	$ 2,100.00	$ 2,100.00
8		Silt Fence	300	LF	$ 5.00	$ 1,500.00
8		Topsoil	450	CY	$ 20.00	$ 9,000.00
8		Base Course and Gravel Surfacing	250	Ton	$ 30.00	$ 7,500.00
8		Regrade Inner Pond Embankment	7,320	SY	$ 4.00	$ 29,300.00
8		Transfer 4.3 MG of Pond Water	1	LS	$ 14,000.00	$ 14,000.00
					Contingencies (10% Construction Costs) =	$34,552
					Opinion of Probable Construction Costs =	**$380,072**
					Design and Bid Phase Services =	$40,600
					Resident Engineering and Surveying =	$20,000
					Construction Plans of Record =	$1,500
					Total Engineering =	$62,100
					Opinion of Probable Project Cost =	**$443,000**

2016 BUDGET

YALE TOWN
Balance Sheet
As of December 22, 2015

		Dec 22, 15
ASSETS		
Current Assets		
Checking/Savings		
Cash in Checking		
Garbage Fund		2,509.39
General Fund		
BASEC Grant	1,500.00	
Mosquito Control	890.30	
General Fund - Other	76,678.83	
Total General Fund		79,069.13
Sewer Fund		
Surcharge	24,002.64	
Sewer Fund - Other	53,122.86	
Total Sewer Fund		77,125.50
Total Cash in Checking		158,704.02
Savings Certificates		
General Fund		
#177570 (08/30/16)--.15%	30,000.00	
#182790 (1/28/14)--.2%	18,463.97	
Total General Fund		48,463.97
Total Savings Certificates		48,463.97
Total Checking/Savings		207,167.99
Accounts Receivable		
Accounts Receivable		
Garbage Fund		335.35
Sewer Fund		2,436.08
Sewer Surcharge		3,271.82
Total Accounts Receivable		6,043.25
Total Accounts Receivable		6,043.25
Other Current Assets		
Taxes Receivable--General Fund		
Current Receivable		5,176.59
Prior Years		-572.59
Total Taxes Receivable--General Fund		4,604.00
Total Other Current Assets		4,604.00
Total Current Assets		217,815.24
Other Assets		
Sewer/Lagoon Receiveables		
DENR SSFF		16,568.62
JRWDD		100,000.00
Total Sewer/Lagoon Receiveables		116,568.62
Total Other Assets		116,568.62
TOTAL ASSETS		**334,383.86**
LIABILITIES & EQUITY		
Liabilities		
Current Liabilities		
Other Current Liabilities		
Payroll Liabilities		
General Fund		698.61
Total Payroll Liabilities		698.61
Total Other Current Liabilities		698.61
Total Current Liabilities		698.61

YALE TOWN
Balance Sheet
As of December 22, 2015

		Dec 22, 15
Long Term Liabilities		
Loan Payable		
1st National Bank	256,339.45	
Total Loan Payable		256,339.45
Total Long Term Liabilities		256,339.45
Total Liabilities		257,038.06
Equity		
Reserve for Sewer Lagoon Projec		-143,543.88
Reserve for Taxes Receivable		4,604.00
Retained Earnings		92,451.15
Unreserved Fund Balances		
Fire Department	1,542.28	
Garbage Fund	4,075.81	
General Fund	75,121.76	
Sewer Fund	34,005.74	
Total Unreserved Fund Balances		114,745.59
Net Income		9,088.94
Total Equity		77,345.80
TOTAL LIABILITIES & EQUITY		334,383.86

1:19 PM
12/22/15
Accrual Basis

YALE TOWN
Profit & Loss
January 1 through December 22, 2015

			Jan 1 - Dec 22, 15
Income			
General Fund			
25% County Road		379.73	
Interest Income		61.97	
Licenses & Permits		500.00	
Motor Vehicle License Fees		1,803.86	
Other Income		2,787.00	
Sales Tax Proceeds		20,206.62	
State Shared Revenue		5,087.84	
Taxes			
Bank Franchise		874.98	
General Property Taxes			
Current Year	14,395.00		
Penalty & Interest	121.29		
PRIOR YEAR	1,115.61		
Total General Property Taxes		15,631.90	
Total Taxes		16,506.88	
Total General Fund			47,333.90
Sewer Fund			
Sewer Project Proceeds		107,027.00	
Surcharge		16,325.00	
Wastewater Charges		9,795.00	
Total Sewer Fund			133,147.00
Total Income			180,480.90
Expense			
General Fund Expenses			
Finance & Administration			
Cost of Printing		480.36	
Finance Officer Insurance		511.00	
Finance Officer Salary		3,183.00	
Miscellaneous		617.43	
Municipal Dues		339.03	
Payroll Taxes		243.57	
Total Finance & Administration		5,374.39	
Fire Station & Buildings			
Fire Protection		2,000.00	
Total Fire Station & Buildings		2,000.00	
Garbage Collection		8,689.36	
General Government Buildings			
Electricity		1,793.31	
Maintenance		936.48	
Water		464.00	
Total General Government Buildings		3,193.79	
Highways & Streets			
Capital Expenditures		10,242.37	
Electricity		1,588.63	
Maintenance		2,272.76	
Total Highways & Streets		14,103.76	
Law Enforcement		2,588.90	
Legislative			
Board Salaries		1,380.00	
Legal Fees		150.00	
Payroll Taxes		105.56	
Total Legislative		1,635.56	
Parks			
Electricity		271.02	
Maintenance		120.01	
Mosquito Control		284.70	
Supplies		17.86	

	Budı	2014 Budget	2014 Actuals	2015 Budget	9/21/2015 2015 Actuals	2016 Budget	
General Fund							
Income/Cash Available							
25% County Road	$	300.00	$ 645.52	$ 300.00	$ 379.73	$ 300.00	
Interest	$	-	$ 94.21	$ -	$ 54.52		
License & Permits	$	500.00	$ 500.00	$ 500.00		$ 500.00	
MV License Fees	$	1,000.00	$ 1,809.39	$ 1,000.00	$ 1,531.52	$ 1,000.00	
Other Income	$	100.00	$ 240.00	$ 100.00	$ 2,477.00	$ 100.00	
Sales Tax Proceeds	$	13,000.00	$ 20,258.03	$ 13,000.00	$ 14,881.84	$ 18,000.00	
State Shared Revenue	$	4,000.00	$ 6,956.47	$ 4,000.00	$ 4,888.59	$ 5,000.00	
Property Taxes							
Bank Franchise	$	300.00	$ 888.57	$ 400.00	$ 874.98	$ 500.00	
General Taxes							
Current Year	$	19,147.00	$ 18,098.06	$ 19,530.00	$ 6,188.15	$ 19,937.00	per Jill
Penalty & Interest	$	-	$ 103.01	$ -	$ 115.91		
Prior Year	$	-	$ 450.00	$ -	$ 1,115.61		
Other	$	-	$ 50.47	$ -	$ 3,481.15		
Town Hall Rental	$	-		$ -			
Unobligated Funds from Prior Ye				$ 12,000.00			
Total Cash Available	$	38,347.00	$ 50,093.73	$ 50,830.00	$ 35,989.00	$ 45,337.00	
Expense							
Finance & Administration							
Cost of Printing	$	800.00	$ 506.69	$ 800.00	$ 381.65	$ 800.00	
Finance Officer Insurance			$ 542.00				
Finance Officer Salary	$	3,183.00	$ 3,133.00	$ 3,183.00	$ 2,387.25	$ 3,183.00	
Liability Insurance	$	1,000.00	$ -				
Miscellaneous	$	500.00	$ 532.11	$ 531.00	$ 609.35	$ 531.00	
Municiple Dues	$	200.00	$ 334.23	$ 200.00	$ 177.00	$ 200.00	
Payroll Taxes	$	244.00	$ 239.68	$ 244.00	$ 182.67	$ 244.00	
Sales Tax Cost							
Travel & Conference	$	100.00	$ -	$ 100.00		$ 100.00	
Fire Station & Building							

	Buc	2014 Budget	2014 Actuals	2015 Budget	9/21/2015 2015 Actuals	2016 Budget	
Fire Protection	$	2,000.00	$ 2,000.00	$ 2,000.00		$ 2,000.00	
Insurance	$	1,000.00	$ 250.00				
Maintenance	$	1,000.00	$ 225.89	$ 1,000.00		$ 1,000.00	
Garbage Collection	$	9,000.00	$ 8,581.32	$ 8,686.00	6515.14	$ 8,700.00	$723.80/month
General Government Buildings							
Capital Improvement				$ 1,000.00			
Electricity	$	2,000.00	$ 2,067.75	$ 2,000.00	$ 1,435.39	$ 3,000.00	
Garbage							
Insurance	$	1,000.00	$ 964.47				
Maintenance	$	300.00		$ 300.00	846.04	$ 5,000.00	
Reserve	$	500.00		$ 500.00		$ 500.00	
Supplies	$	100.00	$ 11.38	$ 100.00		$ 100.00	
Water	$	450.00	$ 459.80	$ 450.00	$ 347.00	$ 475.00	
Highways & Streets							
Capital Expenditures	$	14,000.00	$ 14,000.00	$10,000.00	$10,242.37	$ 2,000.00	
Electricity	$	2,000.00	$ 1,608.43	$ 2,000.00	$ 1,143.77	$ 2,000.00	
Maintenance	$	4,000.00	$ 709.79	$ 4,000.00	$ 1,847.79	$ 4,500.00	
Intergovernmental							
Law Enforcement	$	3,000.00	$ 2,688.98	$ 3,000.00	$ 1,936.93	$ 3,000.00	
Legislative							
Board Salaries	$	1,380.00	$ 1,380.00	$ 1,380.00	$ 1,035.00	$ 1,380.00	
Election Board Salaries	$	300.00		$ 300.00		$ 300.00	
Insurance	$	500.00	$ 1,833.00	$ 3,500.00		$ 3,500.00	
Payroll Taxes	$	106.00	$ 105.56	$ 106.00	$ 79.17	$ 106.00	
Parks							
Capital Improvement				$ 4,500.00		$ 1,418.00	
Electricity	$	120.00	$ 291.81	$ 200.00	$ 211.24	$ 200.00	
Maintenance	$	500.00	$ 409.38	$ 500.00	$ 20.00	$ 500.00	
Supplies					$ 17.86	$ 100.00	
Mosquito Control	$	247.00		$ 250.00	$ 284.70	$ 500.00	
Total Expenses	$	49,530.00	$ 42,875.27	$50,830.00	$29,700.32	$ 45,337.00	

	Budı	2014 Budget	2014 Actuals	2015 Budget	9/21/2015 2015 Actuals	2016 Budget	
Sewer Fund							
Income							
Sewer Project Proceeds		$1,300,000.00	$ 844,939.39	$ -	$48,729.39	$443,000.00	
Wastewater Charges		$ 9,900.00	$ 9,810.00	$ 9,900.00	$ 6,480.00	$ 9,900.00	55 users @$15/month
Wastewater Surcharge		$ -	$ 16,350.00	$16,500.00	$10,800.00	$ 16,500.00	55 users @ $25/montl
Total Income		$1,309,900.00	$ 871,099.39	$26,400.00	$66,009.39	$469,400.00	
Expenses							
Capital Expenses		$1,300,000.00	$ 799,654.00	$ 4,000.00	$87,356.95	$ 3,000.00	
Sewer Rip Rap Project						$443,000.00	
Dues		$ 350.00	$ 370.00	$ 400.00	$ 370.00	$ 370.00	
Electricity		$ 650.00	$ 523.73	$ 600.00	$ 284.27	$ 600.00	
Insurance		$ 500.00	$ -	$ -			
Loan Payment		$ -	$ 4,895.16	$15,000.00	$10,597.04	$ 15,000.00	
Maintenance		$ 4,700.00	$ 127.61	$ 3,600.00	$ 320.16	$ 3,668.00	
Miscellaneous		$ 442.00	$ -	$ 242.00		$ 242.00	
One Call		$ 20.00	$ 15.75	$ 20.00	$ 5.25	$ 20.00	
Other		$ 200.00	$ 157.27	$ -	$ 37.98	$ 500.00	
Payroll Taxes		$ 38.00	$ -	$ 38.00			
Reserve		$ 4,000.00	$ -	$ 2,000.00		$ 3,000.00	
Salaries		$ 500.00	$ -	$ 500.00			
Testing		$ -	$ -	$ -			
Total Expenses		$1,311,400.00	$ 805,743.52	$26,400.00	$98,971.65	$469,400.00	

Exhibit I

MUNICIPALITY OF Yale
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
31-Dec-13

	General Fund	Fund	Fund	Enterprise Funds: Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	62,790.56				28,718.97	10,307.49	2,841.00		104,658.02
Change and Petty Cash									0.00
Passbook Savings									0.00
Savings Certificates	48,417.74								48,417.74
									0.00
									0.00
									0.00
									0.00
101 FUND CASH BALANCES (Note 1)	111,208.30	0.00	0.00	0.00	28,718.97	10,307.49	2,841.00	0.00	153,075.76

Municipal funds are deposited or invested with the following depositories:

First National Bank	153,075.76
Farmers & Merchants Bank	
Huron, SD 57350	
	153,075.76

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	17,762.41								17,762.41
313 Sales Tax	15,821.47								15,821.47
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	45.24								45.24
320 Licenses and Permits	500.00								500.00
331 Federal Grants									0.00
335.1 Bank Franchise Tax	795.66								795.66
335.2 Motor Vehicle Commercial									0.00
Prorate									0.00
335.3 Liquor Tax Reversion	758.15								758.15
335.4 Motor Vehicle Licenses (5%)	1,725.91								1,725.91
335.6 Fire Insurance Premium									0.00
Reversion									0.00
335.7 Liquor License Reversion									0.00
335.8 Local Government Highway									0.00
and Bridge Fund	5,379.36								5,379.36
338.1 County Road Tax (25%)	467.65								467.65
338.2 County Highway and Bridge									0.00
Reserve Tax (25%)									0.00
338.3 County Wheel Tax									0.00
331-339 Other Intergovernmental									0.00
Revenue (339)	24.00								24.00
341-349 Charges for Goods and									0.00
Services (341)									0.00
351-359 Fines and Forfeits (351)									0.00
361 Investment Earnings	101.76								101.76
362 Rentals	50.00								50.00
363-369 Other Revenues (369)	245.00								245.00

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue					11,441.59		3,474.01		14,915.60
Surcharge as Security for Debt						10,307.49			10,307.49
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	43,676.61	0.00	0.00	0.00	11,441.59	10,307.49	3,474.01	0.00	68,899.70
Disbursements (Function):									
411-419 General Government (414)	12,058.92								12,058.92
421 Police	3,586.29								3,586.29
422 Fire	4,000.00								4,000.00
423-429 Other Public Safety (429)									0.00
431 Highways and Streets (includes snow removal & street lights)	2,029.59								2,029.59
432 Sanitation (includes garbage & rubble sites)	5,582.78								5,582.78
437 Cemeteries									0.00
433-439 Other Public Works (435)									0.00
441-449 Health and Welfare (441)									0.00
451-459 Culture-Recreation (451)	514.16								514.16
461-469 Conservation and Development (465)									0.00
470 Debt Service									0.00
480 Intergovernmental Expenditures									0.00
490-492 Miscellaneous (492)									0.00

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2013
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services					6.65				6.65
420 Other Expenses					521,830.50		2,871.83		524,702.33
426 Supplies and Materials									0.00
Total Disbursements	27,771.74	0.00	0.00	0.00	521,837.15	0.00	2,871.83	0.00	552,480.72
39101 Transfers In									0.00
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	0.00
391.2 Money Received From Borrowing									0.00
391.07 Capital Contributions (Grants)									0.00
Sewer Project Grants					216,137.61				216,137.61
SRF Loan Forgiveness Grants					309,221.00				309,221.00
Subtotal of Receipts, Disbursements and Transfers	15,904.87	0.00	0.00	0.00	14,963.05	10,307.49	602.18	0.00	41,777.59
Fund Cash Balance, January 1, 2013	95,303.43				13,755.92	0.00	2,238.82		111,298.17
Adjustments:									
									0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2013	95,303.43	0.00	0.00	0.00	13,755.92	0.00	2,238.82	0.00	111,298.17
FUND CASH BALANCE, DECEMBER 31, 2013	111,208.30	0.00	0.00	0.00	28,718.97	10,307.49	2,841.00	0.00	153,075.76

Exhibit I

MUNICIPALITY OF _____Yale_____
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
31-Dec-14

	General Fund	Fund	Fund	Enterprise Funds: Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	69,780.76				60,525.75	20,918.02	2,876.10		154,100.63
Change and Petty Cash									0.00
Passbook Savings									0.00
Savings Certificates	48,450.02								48,450.02
									0.00
									0.00
									0.00
									0.00
101 FUND CASH BALANCES (Note 1)	118,230.78	0.00	0.00	0.00	60,525.75	20,918.02	2,876.10	0.00	202,550.65

Municipal funds are deposited or invested with the following depositories:

First National Bank	202,550.65
Farmers & Merchants Bank	
Huron, SD 57350	
	202,550.65

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	18,598.53								18,598.53
313 Sales Tax	20,258.03								20,258.03
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	24.00								24.00
320 Licenses and Permits	500.00								500.00
331 Federal Grants									0.00
335.1 Bank Franchise Tax	888.57								888.57
335.2 Motor Vehicle Commercial Prorate									0.00
335.3 Liquor Tax Reversion	814.25								814.25
335.4 Motor Vehicle Licenses (5%)	1,809.39								1,809.39
335.6 Fire Insurance Premium Reversion									0.00
335.8 Local Government Highway and Bridge Fund	6,118.22								6,118.22
338.1 County Road Tax (25%)	645.52								645.52
338.2 County Highway and Bridge Reserve Tax (25%)									0.00
338.3 County Wheel Tax									0.00
331-339 Other Intergovernmental Revenue (339)									0.00
341-349 Charges for Goods and Services (341)									0.00
351-359 Fines and Forfeits (351)	103.01								103.01
361 Investment Earnings	94.21								94.21
362 Rentals									0.00
363-369 Other Revenues (369)									0.00

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014
(continued)

	General Fund	Fund	Fund	Enterprise Funds: Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue					9,558.94		35.10		9,594.04
Surcharge as Security for Debt						15,505.69			15,505.69
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	49,853.73	0.00	0.00	0.00	9,558.94	15,505.69	35.10	0.00	74,953.46
Disbursements (Function):									
411-419 General Government (414)	12,541.54								12,541.54
421 Police	2,688.98								2,688.98
422 Fire	2,000.00								2,000.00
423-429 Other Public Safety (429)									0.00
431 Highways and Streets (includes snow removal & street lights)	16,318.22								16,318.22
432 Sanitation (includes garbage & rubble sites)	8,581.32								8,581.32
437 Cemeteries									0.00
433-439 Other Public Works (435)									0.00
441-449 Health and Welfare (441)									0.00
451-459 Culture-Recreation (451)	701.19								701.19
461-469 Conservation and Development (465)									0.00
470 Debt Service									0.00
480 Intergovernmental Expenditures									0.00
490-492 Miscellaneous (492)									0.00

MUNICIPALITY OF Yale
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2014
(continued)

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Surcharge Fund	Garbage Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services									0.00
420 Other Expenses					822691.55	4895.16			827,586.71
426 Supplies and Materials									0.00
Total Disbursements	42831.25	0.00	0.00	0.00	822691.55	4895.16	0.00	0.00	870417.96
391.01 Transfers In									0.00
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	0.00
391.03 Sale of Municipal Property									0.00
391.04 Compensation for Loss or Damage to Capital Assets									0.00
391.2 Money Received From Borrowing					228051.00				228,051.00
391.07 Capital Contributions (Grants)									0.00
Consolidated Sewer Project Grants					398052.40				398,052.40
SRF Loan Forgiveness Grants					218835.99				218,835.99
Subtotal of Receipts, Disbursements and Transfers	7022.48	0.00	0.00	0.00	31806.78	10610.53	35.10	0.00	49474.89
Fund Cash Balance, January 1, 2014	111208.30				28718.97	10307.49	2841.00		153,075.76
Adjustments:									
									0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2014	111208.30	0.00	0.00	0.00	28718.97	10307.49	2841.00	0.00	153075.76
FUND CASH BALANCE, DECEMBER 31, 2014	118230.78	0.00	0.00	0.00	60525.75	20918.02	2876.10	0.00	202,550.65

Exhibit III

MUNICIPALITY OF _____Yale_____
STATEMENT OF CHANGES IN LONG-TERM DEBT
For the Year Ended December 31, 2014

	General Long-Term Debt			Enterprise	
	General Obligation Bonds	Special Assessment Bonds	Other	Revenue Bonds	Total
Debt Payable, January 1, 2014					0.00
Add New Issues:					
Clean Water SRF Loan				228,051.00	228,051.00
					0.00
					0.00
Less Debt Retired					0.00
DEBT PAYABLE, DECEMBER 31, 2014	0.00	0.00	0.00	228,051.00	228,051.00
	(23101)	(23103)	(23700)	(23102)	

Note: Amounts reported do not include interest.

AMORTIZATION SCHEDULE

Principal	Loan Date	Maturity	Loan No	Call / Coll	Account	Officer	Initials
$258,983.18		11-15-2044					

References in the boxes above are for Lender's use only and do not limit the applicability of this document to any particular loan or item.
Any item above containing "***" has been omitted due to text length limitations.

Borrower: Yale - Clean Water #1
Total Advances $829,366.00
Principal Forgiveness $568,115.00
Principal Payments $2,267.82

Lender: THE FIRST NATIONAL BANK IN SIOUX FALLS
/SD DENR
.
.
PIERRE, SD

Principal Advance:	$258,983.18
Amount Financed:	$258,983.18
Finance Charge:	$144,664.86
APR:	3.2500%
Total Principal:	$258,983.18
Total Interest:	$144,664.86
Total of Payments:	$403,648.04

Payment Schedule

Description	Date	Frequency	Number	Amount
Regular Payment	Aug 15, 2015	Quarterly	117	$3,420.76
Regular Payment	Nov 15, 2044	Quarterly	1	$3,419.12

Interest Payment also includes
Admin Surcharge amounts

Amortization Schedule

Date	Description	Total Payment	P&I Payment	Principal Payment	Interest Payment	Principal Balance
May 15, 2015	Beginning Balance					258,983.18
Aug 15, 2015	Regular Payment	3,420.76	3,420.76	1,316.52	2,104.24	257,666.66
Nov 15, 2015	Regular Payment	3,420.76	3,420.76	1,327.21	2,093.55	256,339.45
2015 Totals		**6,841.52**	**6,841.52**	**2,643.73**	**4,197.79**	
Feb 15, 2016	Regular Payment	3,420.76	3,420.76	1,338.00	2,082.76	255,001.45
May 15, 2016	Regular Payment	3,420.76	3,420.76	1,348.87	2,071.89	253,652.58
Aug 15, 2016	Regular Payment	3,420.76	3,420.76	1,359.83	2,060.93	252,292.75
Nov 15, 2016	Regular Payment	3,420.76	3,420.76	1,370.88	2,049.88	250,921.87
2016 Totals		**13,683.04**	**13,683.04**	**5,417.58**	**8,265.46**	
Feb 15, 2017	Regular Payment	3,420.76	3,420.76	1,382.01	2,038.75	249,539.86
May 15, 2017	Regular Payment	3,420.76	3,420.76	1,393.24	2,027.52	248,146.62
Aug 15, 2017	Regular Payment	3,420.76	3,420.76	1,404.56	2,016.20	246,742.06
Nov 15, 2017	Regular Payment	3,420.76	3,420.76	1,415.98	2,004.78	245,326.08
2017 Totals		**13,683.04**	**13,683.04**	**5,595.79**	**8,087.25**	
Feb 15, 2018	Regular Payment	3,420.76	3,420.76	1,427.48	1,993.28	243,898.60
May 15, 2018	Regular Payment	3,420.76	3,420.76	1,439.08	1,981.68	242,459.52
Aug 15, 2018	Regular Payment	3,420.76	3,420.76	1,450.77	1,969.99	241,008.75
Nov 15, 2018	Regular Payment	3,420.76	3,420.76	1,462.56	1,958.20	239,546.19
2018 Totals		**13,683.04**	**13,683.04**	**5,779.89**	**7,903.15**	
Feb 15, 2019	Regular Payment	3,420.76	3,420.76	1,474.44	1,946.32	238,071.75
May 15, 2019	Regular Payment	3,420.76	3,420.76	1,486.42	1,934.34	236,585.33
Aug 15, 2019	Regular Payment	3,420.76	3,420.76	1,498.50	1,922.26	235,086.83
Nov 15, 2019	Regular Payment	3,420.76	3,420.76	1,510.67	1,910.09	233,576.16
2019 Totals		**13,683.04**	**13,683.04**	**5,970.03**	**7,713.01**	
Feb 15, 2020	Regular Payment	3,420.76	3,420.76	1,522.95	1,897.81	232,053.21
May 15, 2020	Regular Payment	3,420.76	3,420.76	1,535.32	1,885.44	230,517.89
Aug 15, 2020	Regular Payment	3,420.76	3,420.76	1,547.80	1,872.96	228,970.09
Nov 15, 2020	Regular Payment	3,420.76	3,420.76	1,560.37	1,860.39	227,409.72
2020 Totals		**13,683.04**	**13,683.04**	**6,166.44**	**7,516.60**	
Feb 15, 2021	Regular Payment	3,420.76	3,420.76	1,573.05	1,847.71	225,836.67
May 15, 2021	Regular Payment	3,420.76	3,420.76	1,585.83	1,834.93	224,250.84
Aug 15, 2021	Regular Payment	3,420.76	3,420.76	1,598.72	1,822.04	222,652.12
Nov 15, 2021	Regular Payment	3,420.76	3,420.76	1,611.71	1,809.05	221,040.41
2021 Totals		**13,683.04**	**13,683.04**	**6,369.31**	**7,313.73**	
Feb 15, 2022	Regular Payment	3,420.76	3,420.76	1,624.80	1,795.96	219,415.61
May 15, 2022	Regular Payment	3,420.76	3,420.76	1,638.00	1,782.76	217,777.61
Aug 15, 2022	Regular Payment	3,420.76	3,420.76	1,651.31	1,769.45	216,126.30
Nov 15, 2022	Regular Payment	3,420.76	3,420.76	1,664.73	1,756.03	214,461.57
2022 Totals		**13,683.04**	**13,683.04**	**6,578.84**	**7,104.20**	
Feb 15, 2023	Regular Payment	3,420.76	3,420.76	1,678.25	1,742.51	212,783.32

May 15, 2023 Regular Payment	3,420.76	3,420.76	1,691.89	1,728.87	211,091.43
Aug 15, 2023 Regular Payment	3,420.76	3,420.76	1,705.64	1,715.12	209,385.79
Nov 15, 2023 Regular Payment	3,420.76	3,420.76	1,719.50	1,701.26	207,666.29
2023 Totals	**13,683.04**	**13,683.04**	**6,795.28**	**6,887.76**	
Feb 15, 2024 Regular Payment	3,420.76	3,420.76	1,733.47	1,687.29	205,932.82
May 15, 2024 Regular Payment	3,420.76	3,420.76	1,747.55	1,673.21	204,185.27
Aug 15, 2024 Regular Payment	3,420.76	3,420.76	1,761.75	1,659.01	202,423.52
Nov 15, 2024 Regular Payment	3,420.76	3,420.76	1,776.06	1,644.70	200,647.46
2024 Totals	**13,683.04**	**13,683.04**	**7,018.83**	**6,664.21**	
Feb 15, 2025 Regular Payment	3,420.76	3,420.76	1,790.49	1,630.27	198,856.97
May 15, 2025 Regular Payment	3,420.76	3,420.76	1,805.04	1,615.72	197,051.93
Aug 15, 2025 Regular Payment	3,420.76	3,420.76	1,819.71	1,601.05	195,232.22
Nov 15, 2025 Regular Payment	3,420.76	3,420.76	1,834.49	1,586.27	193,397.73
2025 Totals	**13,683.04**	**13,683.04**	**7,249.73**	**6,433.31**	
Feb 15, 2026 Regular Payment	3,420.76	3,420.76	1,849.40	1,571.36	191,548.33
May 15, 2026 Regular Payment	3,420.76	3,420.76	1,864.42	1,556.34	189,683.91
Aug 15, 2026 Regular Payment	3,420.76	3,420.76	1,879.57	1,541.19	187,804.34
Nov 15, 2026 Regular Payment	3,420.76	3,420.76	1,894.84	1,525.92	185,909.50
2026 Totals	**13,683.04**	**13,683.04**	**7,488.23**	**6,194.81**	
Feb 15, 2027 Regular Payment	3,420.76	3,420.76	1,910.24	1,510.52	183,999.26
May 15, 2027 Regular Payment	3,420.76	3,420.76	1,925.76	1,495.00	182,073.50
Aug 15, 2027 Regular Payment	3,420.76	3,420.76	1,941.41	1,479.35	180,132.09
Nov 15, 2027 Regular Payment	3,420.76	3,420.76	1,957.18	1,463.58	178,174.91
2027 Totals	**13,683.04**	**13,683.04**	**7,734.59**	**5,948.45**	
Feb 15, 2028 Regular Payment	3,420.76	3,420.76	1,973.08	1,447.68	176,201.83
May 15, 2028 Regular Payment	3,420.76	3,420.76	1,989.12	1,431.64	174,212.71
Aug 15, 2028 Regular Payment	3,420.76	3,420.76	2,005.28	1,415.48	172,207.43
Nov 15, 2028 Regular Payment	3,420.76	3,420.76	2,021.57	1,399.19	170,185.86
2028 Totals	**13,683.04**	**13,683.04**	**7,989.05**	**5,693.99**	
Feb 15, 2029 Regular Payment	3,420.76	3,420.76	2,037.99	1,382.77	168,147.87
May 15, 2029 Regular Payment	3,420.76	3,420.76	2,054.55	1,366.21	166,093.32
Aug 15, 2029 Regular Payment	3,420.76	3,420.76	2,071.25	1,349.51	164,022.07
Nov 15, 2029 Regular Payment	3,420.76	3,420.76	2,088.08	1,332.68	161,933.99
2029 Totals	**13,683.04**	**13,683.04**	**8,251.87**	**5,431.17**	
Feb 15, 2030 Regular Payment	3,420.76	3,420.76	2,105.04	1,315.72	159,828.95
May 15, 2030 Regular Payment	3,420.76	3,420.76	2,122.14	1,298.62	157,706.81
Aug 15, 2030 Regular Payment	3,420.76	3,420.76	2,139.39	1,281.37	155,567.42
Nov 15, 2030 Regular Payment	3,420.76	3,420.76	2,156.77	1,263.99	153,410.65
2030 Totals	**13,683.04**	**13,683.04**	**8,523.34**	**5,159.70**	
Feb 15, 2031 Regular Payment	3,420.76	3,420.76	2,174.29	1,246.47	151,236.36
May 15, 2031 Regular Payment	3,420.76	3,420.76	2,191.96	1,228.80	149,044.40
Aug 15, 2031 Regular Payment	3,420.76	3,420.76	2,209.77	1,210.99	146,834.63

Nov 15, 2031 Regular Payment	3,420.76	3,420.76	2,227.72	1,193.04	144,606.91
2031 Totals	**13,683.04**	**13,683.04**	**8,803.74**	**4,879.30**	
Feb 15, 2032 Regular Payment	3,420.76	3,420.76	2,245.82	1,174.94	142,361.09
May 15, 2032 Regular Payment	3,420.76	3,420.76	2,264.07	1,156.69	140,097.02
Aug 15, 2032 Regular Payment	3,420.76	3,420.76	2,282.47	1,138.29	137,814.55
Nov 15, 2032 Regular Payment	3,420.76	3,420.76	2,301.01	1,119.75	135,513.54
2032 Totals	**13,683.04**	**13,683.04**	**9,093.37**	**4,589.67**	
Feb 15, 2033 Regular Payment	3,420.76	3,420.76	2,319.71	1,101.05	133,193.83
May 15, 2033 Regular Payment	3,420.76	3,420.76	2,338.56	1,082.20	130,855.27
Aug 15, 2033 Regular Payment	3,420.76	3,420.76	2,357.56	1,063.20	128,497.71
Nov 15, 2033 Regular Payment	3,420.76	3,420.76	2,376.71	1,044.05	126,121.00
2033 Totals	**13,683.04**	**13,683.04**	**9,392.54**	**4,290.50**	
Feb 15, 2034 Regular Payment	3,420.76	3,420.76	2,396.02	1,024.74	123,724.98
May 15, 2034 Regular Payment	3,420.76	3,420.76	2,415.49	1,005.27	121,309.49
Aug 15, 2034 Regular Payment	3,420.76	3,420.76	2,435.12	985.64	118,874.37
Nov 15, 2034 Regular Payment	3,420.76	3,420.76	2,454.90	965.86	116,419.47
2034 Totals	**13,683.04**	**13,683.04**	**9,701.53**	**3,981.51**	
Feb 15, 2035 Regular Payment	3,420.76	3,420.76	2,474.85	945.91	113,944.62
May 15, 2035 Regular Payment	3,420.76	3,420.76	2,494.95	925.81	111,449.67
Aug 15, 2035 Regular Payment	3,420.76	3,420.76	2,515.23	905.53	108,934.44
Nov 15, 2035 Regular Payment	3,420.76	3,420.76	2,535.66	885.10	106,398.78
2035 Totals	**13,683.04**	**13,683.04**	**10,020.69**	**3,662.35**	
Feb 15, 2036 Regular Payment	3,420.76	3,420.76	2,556.26	864.50	103,842.52
May 15, 2036 Regular Payment	3,420.76	3,420.76	2,577.03	843.73	101,265.49
Aug 15, 2036 Regular Payment	3,420.76	3,420.76	2,597.97	822.79	98,667.52
Nov 15, 2036 Regular Payment	3,420.76	3,420.76	2,619.08	801.68	96,048.44
2036 Totals	**13,683.04**	**13,683.04**	**10,350.34**	**3,332.70**	
Feb 15, 2037 Regular Payment	3,420.76	3,420.76	2,640.36	780.40	93,408.08
May 15, 2037 Regular Payment	3,420.76	3,420.76	2,661.81	758.95	90,746.27
Aug 15, 2037 Regular Payment	3,420.76	3,420.76	2,683.44	737.32	88,062.83
Nov 15, 2037 Regular Payment	3,420.76	3,420.76	2,705.24	715.52	85,357.59
2037 Totals	**13,683.04**	**13,683.04**	**10,690.85**	**2,992.19**	
Feb 15, 2038 Regular Payment	3,420.76	3,420.76	2,727.22	693.54	82,630.37
May 15, 2038 Regular Payment	3,420.76	3,420.76	2,749.38	671.38	79,880.99
Aug 15, 2038 Regular Payment	3,420.76	3,420.76	2,771.72	649.04	77,109.27
Nov 15, 2038 Regular Payment	3,420.76	3,420.76	2,794.24	626.52	74,315.03
2038 Totals	**13,683.04**	**13,683.04**	**11,042.56**	**2,640.48**	
Feb 15, 2039 Regular Payment	3,420.76	3,420.76	2,816.95	603.81	71,498.08
May 15, 2039 Regular Payment	3,420.76	3,420.76	2,839.83	580.93	68,658.25
Aug 15, 2039 Regular Payment	3,420.76	3,420.76	2,862.91	557.85	65,795.34
Nov 15, 2039 Regular Payment	3,420.76	3,420.76	2,886.17	534.59	62,909.17
2039 Totals	**13,683.04**	**13,683.04**	**11,405.86**	**2,277.18**	
Feb 15, 2040 Regular Payment	3,420.76	3,420.76	2,909.62	511.14	59,999.55

May 15, 2040 Regular Payment	3,420.76	3,420.76	2,933.26	487.50	57,066.29
Aug 15, 2040 Regular Payment	3,420.76	3,420.76	2,957.09	463.67	54,109.20
Nov 15, 2040 Regular Payment	3,420.76	3,420.76	2,981.12	439.64	51,128.08
2040 Totals	**13,683.04**	**13,683.04**	**11,781.09**	**1,901.95**	
Feb 15, 2041 Regular Payment	3,420.76	3,420.76	3,005.34	415.42	48,122.74
May 15, 2041 Regular Payment	3,420.76	3,420.76	3,029.76	391.00	45,092.98
Aug 15, 2041 Regular Payment	3,420.76	3,420.76	3,054.37	366.39	42,038.61
Nov 15, 2041 Regular Payment	3,420.76	3,420.76	3,079.19	341.57	38,959.42
2041 Totals	**13,683.04**	**13,683.04**	**12,168.66**	**1,514.38**	
Feb 15, 2042 Regular Payment	3,420.76	3,420.76	3,104.21	316.55	35,855.21
May 15, 2042 Regular Payment	3,420.76	3,420.76	3,129.43	291.33	32,725.78
Aug 15, 2042 Regular Payment	3,420.76	3,420.76	3,154.86	265.90	29,570.92
Nov 15, 2042 Regular Payment	3,420.76	3,420.76	3,180.49	240.27	26,390.43
2042 Totals	**13,683.04**	**13,683.04**	**12,568.99**	**1,114.05**	
Feb 15, 2043 Regular Payment	3,420.76	3,420.76	3,206.33	214.43	23,184.10
May 15, 2043 Regular Payment	3,420.76	3,420.76	3,232.38	188.38	19,951.72
Aug 15, 2043 Regular Payment	3,420.76	3,420.76	3,258.65	162.11	16,693.07
Nov 15, 2043 Regular Payment	3,420.76	3,420.76	3,285.12	135.64	13,407.95
2043 Totals	**13,683.04**	**13,683.04**	**12,982.48**	**700.56**	
Feb 15, 2044 Regular Payment	3,420.76	3,420.76	3,311.82	108.94	10,096.13
May 15, 2044 Regular Payment	3,420.76	3,420.76	3,338.72	82.04	6,757.41
Aug 15, 2044 Regular Payment	3,420.76	3,420.76	3,365.85	54.91	3,391.56
Nov 15, 2044 Regular Payment	3,419.12	3,419.12	3,391.56	27.56	
2044 Totals	**13,681.40**	**13,681.40**	**13,407.95**	**273.45**	
Grand Total	**403,648.04**	**403,648.04**	**258,983.18**	**144,664.86**	

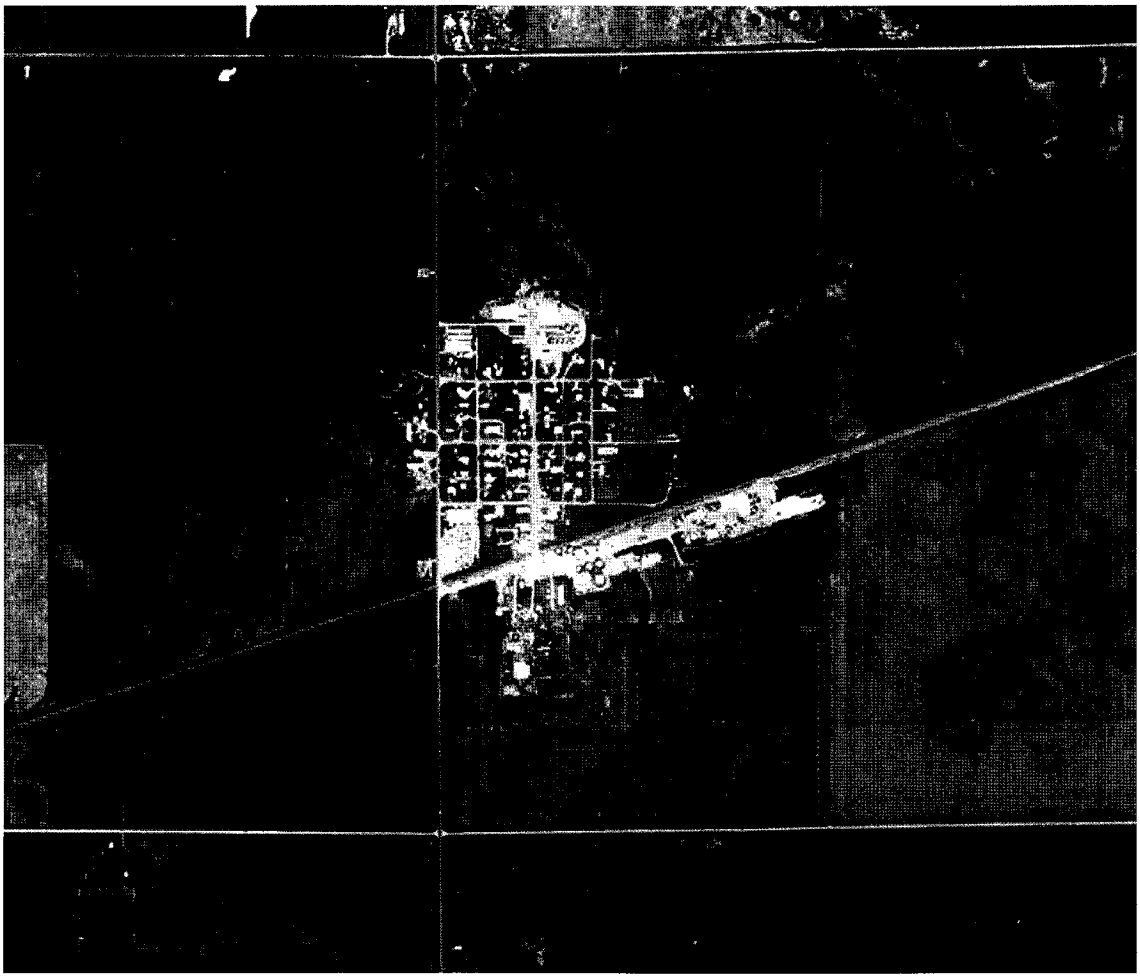
PRIOR YEARS AUDITS

USER RATE ORDINANCE

PUBLIC HEARING NOTICE AND MEETING MINUTES

NORTHEAST COUNCIL OF GOVERNMENTS

P.O. BOX 1985 ABERDEEN, SD 57402-1985



Facility Plan For

Wastewater Treatment Facilty

Yale, South Dakota

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
8613
DENNIS F.
REBELEIN
SOUTH DAKOTA
6/5/09

Prepared by

Banner Associates, Inc.
Brookings, South Dakota

June 2009

BANNER

BAI Project No. 20917.00.00

YALE WASTEWATER TREATMENT FACILITY

FACILITIES PLAN

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SECTION 1: INTRODUCTION, AUTHORIZATION, PURPOSE, AND ORGANIZATION OF THE REPORT

1.1. INTRODUCTION, AUTHORIZATION AND PURPOSE

In May, 2008, the Town of Yale requested a proposal and agreement for the preparation of a Wastewater Facilities Plan for the Yale wastewater collection and treatment system. The Wastewater Facilities Plan is in response to the current lack of stabilization pond hydraulic capacity. The facilities evaluation will examine alternatives to effectively and reliably treat the current and projected future flows and loads.

Preparation of the wastewater collection and treatment facilities plan was authorized by the Town of Yale in an Employment Agreement for Engineering Services dated May 19, 2008 with Banner Associates, Inc.

The Wastewater Facilities Plan will serve as a guide for preparation of capital improvements plans for the wastewater collection and treatment facility for the next several years. The scope of this report will address the following:

- Review of the current Yale Surface Water Discharge (SWD) Permit;
- Preparation of an Environmental Information Document;
- Evaluation of the present flows and loads;
- Investigation of infiltration and inflow conditions;
- Projection of future needs;
- Evaluation of pond expansion, pond expansion and collection system improvements and alternative selection; and
- Preparation of a plan for improvements including cost estimates, implementation schedule, and probable impacts on sewer rates.

1.2. ORGANIZATION OF THE REPORT

This report is organized into a total of seven sections. The topics covered in each of the sections are summarized as follows:

Section 1 Introduction, Authorization, Purpose, and Organization of the Report
Section 2 Current Permit Conditions and Requirements
Section 3 Environmental Information Document
Section 4 Evaluation of Present Conditions
Section 5 Projections of Future Needs
Section 6 Wastewater Treatment Alternatives
Section 7 Recommendations and Capital Improvements Plan.

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END OF SECTION 1

SECTION 2: CURRENT PERMIT CONDITIONS AND REQUIREMENTS

2.1 INTRODUCTION

The Town of Yale currently possesses a Surface Water Discharge (SWD) Permit. This permit is a no discharge permit for its wastewater treatment facility. The South Dakota Department of Environmental and Natural Resources (SDDENR) permit number SDG822071 for the Town of Yale is presented in the Appendix A.

2.1.1 Effluent limits: It is anticipated that there shall be no discharge from the Yale WWTF facility except in the case of emergency release, bypass, or sanitary sewer overflow of the WWTF. If an emergency release, bypass, sanitary sewer overflow is expected to occur, the Town of Yale shall report the occurrence in accordance with the emergency and noncompliance reporting section of the discharge permit and take the appropriate measure to minimize the discharge of pollutants. Such measures may include the closing of wastewater sources that contribute the WWTF until discharge is terminated.

2.1.2 Self-Monitoring Requirements: Promptly upon the discovery of an emergency release, bypass, or sanitary sewer overflow of the WWTFs, the discharge shall be monitored as shown below in Table 2.1.

Table 2.1

Discharge Monitoring Requirements

Effluent Characteristic	Frequency	Sample Type[1]
Flow Rate (mgd)	At least 3 per discharge[2]	Instantaneous
Total Flow (mg)	Each discharge	Calculated
Duration of Discharge (days)	Each discharge	Calculated
pH (standard units)	At least 3 per discharge[2]	Instantaneous
Total Residual Chlorine (mg/L only if chlorinating)	At least 3 per discharge[2]	Instantaneous
Water Temperature (°C)	At least 3 per discharge[2]	Instantaneous
Total Suspended Solids (mg/L)	At least 3 per discharge[2]	Grab or composite
BOD_5 (mg/L)	At least 3 per discharge[2]	Grab or composite
Ammonia as N (mg/L)	At least 3 per discharge[2]	Grab or composite
Fecal Coliform, (#/100 mL)	At least 3 per discharge[2]	Grab

1 See definitions

2 A minimum of three samples shall be taken during any discharge. A sample shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week

The results of the analyses shall be summarized and reported on a photocopy of the Discharge Monitoring Summary Form, and shall be submitted to the SDDENR as well as to the Environmental Protection Agency (EPA). The request for emergency release and bypass shall describe the events leading to the discharge; steps taken or planned to reduce, eliminate and prevent reoccurrence, describe any adverse affects, duration of the discharge and the total flow; along with analytical test results of the discharge. No discharge shall occur until permission has been granted by the SDDENR. Knowingly discharging from an unauthorized location or failing to report a discharge could subject the Town of Yale to penalties as provided under the South Dakota Water Pollution Control Act.

END OF SECTION 2

SECTION 3: ENVIRONMENTAL INFORMATION DOCUMENT

3.1 PROJECT AREA ENVIRONMENT

3.1.1 General Description of Project Area: The Town of Yale is located in the Township 111 North, Range 60 West, in Beadle County, South Dakota. The topography of the Town of Yale area is comprised primarily of land at 0% to 2% slope. The existing wastewater treatment facility is located approximately 1/4 mile east of the town in the southeast ¼ of the northwest ¼ of Section 12, Township 111 North, Range 60 West, in Beadle County. The existing facility consists of a force main, a lift station followed by a circular bi-level total retention stabilization pond of approximately 2.0-acres.

The proposed treatment facility improvements will be designed to handle the projected flows and loads from the Town of Yale through the year 2030 based on current available projections for growth. The project area to be served includes the area within the present town limits and areas predicted to be developed within the design period.

3.1.2 Historical, Cultural, and Archeological: The Town of Yale is located in the east-central region of South Dakota near the town of Huron. The town is in Beadle County.

The Town of Yale transportation facilities include 411th Ave which runs along the west side of the town and connects to highway 14 approximately 4.5 miles south of Yale. A state owned rail line runs along the south edge of the town of Yale and connects to Huron and Watertown. The town of Yale is approximately 10 miles west and 5 mile north of the Town of Huron.

The development of this project would not adversely affect any sites listed in the register of National Historic Places. Verification of historic sites will be requested from the South Dakota State Office of Cultural Preservation. Table 3.1 lists the locations of Yale that are registered as National Historic Places.

Table 3.1

National Historic Locations of Yale

Row	County	Resource Name	Site Description	City
1	Beadle	Site 39BE57	James River Basin Woodland Sites	Yale
2	Beadle	Site 39BE64	James River Basin Woodland Sites	Yale

The land in the study area has been rich in wild game and fur bearing animals. Prior to settlement, the area was frequented by nomadic Indians and fur trappers and traders. If a literature search shows that no previous archaeological inspections have occurred at the proposed project site, an on-site archaeological inspection will be requested prior to completion of construction plans and specifications for the selected alternative.

3.1.3 Floodplains, Wetlands, and Aquifers:

3.1.3.1 Floodplains: The Yale Wastewater Treatment Facility is located outside of zone A areas according to FEMA flood insurance rate maps. The FEMA Firmette map for this area is included in Appendix B. Zone A areas are areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage.

3.1.3.2 Wetlands: It is anticipated that the improvements to the wastewater treatment facility will not impact any areas considered as natural

wetlands, as defined by the National Wetlands Inventory. The expansion and rehabilitation of the wastewater treatment facility and collection system. USGS Wetland map contained in Appendix B shows the proposed improvements with regards to designated wetlands.

3.1.4 Agricultural Lands: It is anticipated that the improvements to the wastewater treatment facility will impact less than 22 acres of areas considered as agricultural lands.

3.1.5 Wild and Scenic Rivers: Pearl creek is the nearest named creek to the wastewater treatment facility and proposed improvements. The James river and unnamed tributaries are also in the area. The construction of improvements at the wastewater treatment facility is not expected to cause any permanent changes to the designated uses of the water resources.

3.1.6 Fish and Wildlife Resources: Both fish and wildlife are directly dependent upon the quantity and quality of their habitat. As in the rest of the United States, the quantity and quality of wildlife habitat is still decreasing in Beadle County.

3.1.6.1 Fish: The fish population of the area is essentially confined to the James River. The principal species of fish found in the James River are walleye, Yellow Perch, Northern Pike, catfish, carp and several species of bass. Fisherman-use of James river varies drastically from year to year depending on water conditions.

3.1.6.2 Wildlife:

3.1.6.2.1 Aquatic and Semiaquatic Species: Beadle County and the study area lie within a large flyway region of the north-central United States, titled the prairie "pot-hole" region,

which serves as a major migratory route for waterfowl. The most common migratory birds in the study area are the Canada goose, snow goose, blue-winged teal, northern pintail and mallard. The construction and operation of the wastewater treatment facility improvements are not expected to have a negative impact on the migratory patterns of the waterfowl inhabiting the area. Some other common species seen in the wetlands of the study area are gulls, terns, killdeer, sandpipers, blackbirds, and robins.

3.1.6.2.2 Terrestrial Species: About 40 species of wildlife are seen in south-central region of South Dakota with white-tailed deer as the most common species. White-tailed deer are often found in shelterbelts and thick marsh vegetation and are hunted with both guns and bow. Furbearers in the area include the red fox, coyotes, mink, striped skunk, beaver, badgers, raccoons, squirrels, cottontail rabbits, and other wildlife during all seasons.

Many bird species have been recorded by local bird clubs both during migration and also during the nesting season. The pheasant population within the study region fluctuates but is generally above average. Pheasants are heavily hunted each fall. Occasional coveys of partridge are also found.

3.1.6.3 Endangered Species: The proposed wastewater treatment plant and potential collection system construction will take place in areas near the existing wastewater treatment plant and collection system site. No adverse impacts to threatened and endangered species are

expected to occur as a result of the construction activities associated with this project. A list of threatened and endangered species in Beadle County, obtained from the U.S. Fish and Wildlife Service, is shown in Table 3.2: Summary of Threatened and Endangered Species in Beadle County, South Dakota.

Table 3.2

Summary of Threatened and Endangered Species in Beadle County, South Dakota.

County	Group	Species	Certainty of Occurrence	Status
Beadle	Bird	Whooping Crane	Known	Endangered
	Fish	Topeka Shiner	Known	Endangered

3.1.7 Air Quality: The proposed project area and Beadle County in general have no major air quality problems. Local air quality problems occur due to odors from different sources such as the wastewater treatment facilities, livestock feeding operations, manure pits, and numerous other sources. Dust storms also occur on occasion; particularly in dry years when inadequate vegetative cover has been allowed to remain on the land surface.

The proposed project is not expected to have a long-term adverse impact on air quality in the area. The treatment facility expansion and improvements will not significantly alter the present conditions regarding odors. There will be short-term impacts during construction due to fugitive dust and heavy equipment operation.

3.1.8 Water Quality and Quantity

3.1.8.1 Surface Water: The major surface water bodies near the proposed project is Lake Cavour and Pearl Creek. Any discharge from this facility to the north and west will enter Cavour Lake which has the beneficial uses 6, 7, 8, and 9 according to the 2008 South Dakota Integrated Report for Surface Water Quality Assessment. The beneficial uses are described as follows:

(6) Warmwater marginal fish life propagation waters
(7) Immersion recreation
(8) Limited contact recreation waters
(9) Fish, wildlife propagation, recreation and stock watering

Any discharge from this facility to the south and east will flow to the Pearl Creek. Pearl Creek discharges into the James River between the Huron 3rd Street dam and Sand Creek. This section of the James River has the beneficial uses 5, 8, 9, and 10 according to the 2008 South Dakota Integrated Report for Surface Water Quality Assessment. The beneficial uses are described as follows:

(5) Warmwater semipermanent fish life propagation waters
(8) Limited contact recreation waters
(9)Fish, wildlife propagation, recreation and stock watering
(10) Irrigation

The water quality requirements for the designated beneficial use categories are summarized in Table 3.3: Water Quality Requirements for Designated Beneficial uses of Surface Water.

Table 3.3

Water Quality Requirements for Designated

Beneficial Uses of Surface Water

Parameter	(5) **Warmwater semipermanent fish life propagation**	(6) **Warmwater marginal fish life propagation**	(7) **Immersion recreation**	(8) **Limited-contact recreation**	(9) **Fish &Wildlife propagation & stock watering**	(10) **Irrigation**
TDS, mg/l					2,500	
NO_3, mg/l as N					50	
pH, units	6.5 to 9.0	6.0to 9.0			6.0 to 9.5	
Coliform, MPN			200 (mean) 400 (single sample)	1,000 (mean) 2,000 (single sample)		
Barium, mg/l						
Chloride, mg/l						
Fluoride, mg/l						
Sulfate, mg/l						
Total Chlorine Res., mg/l	.019 acute 0.011chronic	.019 acute 0.011chronic				
Nitrogen, total ammonia as N	Equation based limit	Equation based limit				
Dissolved Oxygen, mg/l	>5.0	>4.0	>5.0	>5.0		
Undissoc. H_2S, mg/l	0.002	0.002				
TSS, mg/l	90	150				
Temp., °F	90	90				
Alkalinity, mg/l as $CaCO_3$					750	
Conductivity, µmhos/cm					4000	2500
Sodium Adsorption Ratio						10
Oil & grease					<10	
Total petroleum hydrocarbons					<10	

3.2 PROJECT PURPOSE AND NEED

The proposed improvements will upgrade and expand the existing facilities. The existing treatment and collection facilities are further described in Section 4 of this report. The alternatives for upgrading the facilities are described in Section 6.

The proposed improvements will provide a collection/treatment system with the capability to handle both the present and future flows and also meet the requirements of the proposed Surface Water Discharge (SWD) permit as discussed in Section 2.

3.3 PROJECT IMPACT

3.3.1 Direct and Indirect Impacts on Environment: Previous portions of this section have addressed the impact of the proposed project on water quality, fish and wildlife, historical and archaeological sites and air quality. The remainder of this section addresses other impacts of the proposed project and mitigation measures that may be necessary to limit adverse impacts.

3.3.1.1 Land Resources: Construction of the proposed improvements will require excavation, site grading work at the proposed project site, and installation of forcemain pipe. Potential adverse environmental impacts during construction include short term localized erosion and airborne dust from the construction site through wind action and heavy equipment use. Erosion and sediment control practices include both temporary measures such as temporary fencing, erosion control barriers, and seeding and grading of properly sloped drainage ways.

3.3.1.2 Air Resources: Air quality may be locally degraded by increased particulate levels during excavation and construction work associated with the proposed improvements. Temporary increases

in construction equipment emissions are not expected to be significant to the general impacted area. Measures that can be taken during construction to control excessive airborne dust are listed below.

- Watering and/or the use of dust retardants before and during construction,
- Stabilizing temporary and permanent access roads to prevent erosion,
- Proper placement and compaction of stockpiled soil and excavated material to reduce particulates,
- Regrading, resurfacing, and/or reseeding dust-prone areas and disturbed terrain immediately, and
- Limiting construction activities during periods of high winds.

3.3.1.3 Wildlife Resources: The proposed project will result in construction activities immediately adjacent to the existing wastewater treatment facilities and collection system. Wildlife will be deterred from occupying the area immediately adjacent to the sites due to construction activities. No long-term adverse effects on wildlife are expected as a result of this project.

3.3.1.4 Cultural Resources: The construction and operation of the wastewater treatment facility improvements are not expected to have any significant adverse short-term or long-term impact on cultural resources of the area. The only apparent potential impact may be the unearthing or covering up of historic or archaeological resources during construction excavation. In the event that archaeological or historic resources are unearthed during

construction excavation, the immediate stoppage of work is dictated by a required condition in the contract specifications.

Construction should bring a slight economic boost to the area through the hiring of local labor, retail trade by construction employees, and purchase of miscellaneous building supplies and fuel.

3.3.2 Impact on the Environment with no Improvement Action Taken: If no action is taken to upgrade the existing wastewater treatment facility there is a potential for additional hydraulic overloading of the facility which may result in continued and prolonged discharges from the current pond system. In summary, the facility should be upgraded to provide a long term safe means of handling wastewater.

END OF SECTION 3

SECTION 4: EVALUATION OF PRESENT CONDITIONS

4.1 PROJECT NEED AND PLANNING AREA IDENTIFICATION

Improvements to the Yale wastewater collection and treatment system are needed to provide collection and treatment capable of treating the existing and future conditions. The project improvement area is defined as the area within the town limits of the Town of Yale.

4.2 EXISTING FACILITIES DESCRIPTION

4.2.1 Existing Wastewater Treatment Facility: The Yale Wastewater Treatment Facility is located approximately 1/4 mile east of town. Wastewater is conveyed to the treatment plant by a system of gravity sewers and a forcemain to the wastewater treatment facility. Yale operates one lift station that serves the entire town. The lift station is located at the east end of Second Street. Under normal operation wastewater is directed to the bi-level circular total retention pond. Under extreme flow conditions wastewater can be discharged to an unnamed tributary of Cavour Lake. The unnamed tributary flows two miles to Cavour Lake. Effluent flow is measured using v-notch sharp crested weir located in the level control manhole. The general site plan and the existing plant layout are shown on Figure 4.1: Existing WWTF Layout.

The existing wastewater treatment facility was constructed in 1967 and has a pond area of 2.0 acres.

4.2.2 Existing Wastewater Flows and Loads: The Town of Yale keeps and maintains influent flow records by recording run times of the two pumps in the main lift station. For the purpose of determining the present day conditions, pump run time data for 2002, 2003, 2004, 2005, 2006, 2007, and 2008 were used to determine the existing influent flow to the facility. The pump capacity of each of the lift station pumps were checked in

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Consulting Engineers & Architects
409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-6342
www.bannerassociates.com
Designing Projects, Building Trust

CONSULTANTS:

PROJECT TITLE:

YALE WASTEWATER FACILITIES PLAN

PROJECT LOCATION:

YALE, SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO.: 20917.00.00
DATE: APRIL 2009

0 1/2" 1"
SCALE REDUCTION BAR

SHEET TITLE:

EXISTING WWTF LAYOUT

FIGURE NO.:

4.1

February of 2009 and were found to be 105.1 gpm for the pump No. 1 (south pump), and 122 gpm for pump No. 2 (north pump). The results of the analysis of the influent records are presented in Table 4.2: Present Day Facility Influent Flow.

Table 4.2

Present Day Facility Influent Flow

Loading Condition	Influent Flow (gpd)
Minimum Year	9,527
Average Year	15,396
Maximum Year	21,065
Peak 180 Days	26,763

The estimated average population for the period represented by the records shown in Table 4.2: Present Day Facility Influent Flow is 15,396 gallons per day. The average daily flow rate was 130 gallons per capita per day. When the per capita flow rate is in excess of 120 gallons per capita per day, it is required that correction of infiltration and inflow (I/I) be considered when developing treatment alternatives.

According to DENR standards for domestic wastewater strength, the organic and inorganic loadings per person are typically considered to be 0.17 pounds of BOD per day per person and TSS of 0.2 lbs/capita/day. However, when garbage disposals are utilized, BOD loadings should be increased to 0.22 pounds of BOD per day per person. It was assumed for purposes of this report, that most of the residences utilize garbage disposals; therefore, a BOD loading of 0.22 pounds of BOD per day per person will be utilized for the remainder of this report.

Utilizing 0.22 lbs of BOD per person per day and an estimated population of 118 people, the estimated average day organic loading to the stabilization pond system is 13 lb/acre per day on the existing stabilization pond. The estimated average day organic loading appears to be less than the recommended 30 lbs/acre/day on the stabilization pond.

4.2.3 Existing Wastewater Stabilization Pond Capacity: As discussed earlier, the existing stabilization pond system is comprised of a 2.0 acre bi-level circular total retention pond. The existing WWTF has a volume of approximately 2.0 MG from the 2 to 5 foot level.

The capacity and hydraulic retention time of the existing stabilization pond system was calculated using seepage, the yearly precipitation and estimated annual evaporation. The exact seepage rate of the existing pond is not known; therefore the SD DENR maximum seepage rate of 1/16 of an inch per day was used to calculate the capacity and hydraulic retention time of the existing pond. The existing stabilization pond storage flow capacity was found to be approximately 6,290 gallons per day. The average influent flow to the stabilization pond is 15,396. The hydraulic retention time was determined to be approximately 162 days. From December of 2004 to current the existing pond has at times overtopped its dikes, due to hydraulic overloading. Therefore, the existing stabilization pond system is currently hydraulically overloaded and requires additional capacity for existing and future loads.

According to seepage calculations performed, the existing total retention stabilization pond maybe leaking in excess of the 1/16 inch per day limit by the SD DENR and would likely need to be relined in order to be remain in service.

4.2.4 Existing Wastewater Collection System: The existing collection system consists of approximately 5,981 feet of 8 inch, 820 feet of 6 inch diameter vitrified clay pipe which flows to the main lift station. From the main lift station sewage is pump through approximately 1,173 ft of 6-inch diameter forcemain to the inlet structure of the wastewater treatment facility. Figure 4.2 shows the existing collection system layout of Yale.

4.3 INFILTRATION/INFLOW ANALYSIS

The scope of the inflow/infiltration (I/I) investigation is limited to a review of the water sales records and influent flow to the treatment facility. The purpose of the I/I investigation is to assess the magnitude of the effect of I/I on the Town sewer system and assess whether or not it is practical to remove a portion of that infiltration and inflow, thereby reducing the hydraulic load on the treatment facilities.

The estimated average population for the period represented by the records shown in Table 4.3: Present Day Existing Flows and Loads, is 118. The average daily flow rate is 130 gallons per capita per day. When the per capita flow rate is in excess of 120 gallons per capita per day, it is required that correction of infiltration and inflow (I/I) be considered when developing treatment alternatives.

The first step in the investigation of the I/I for the Town of Yale is to evaluate the town as a whole unit. The water sales records for the years 2006-2009 are used to compare the water used by the Town of Yale with the recorded wastewater flow. The winter quarter water sales records are the most likely to show water usage without the seasonal variations of water used for lawn watering, hydrant flushing, etc. Therefore, winter quarter water sales are used for comparison with the influent flow to determine the severity of I/I. Table 4.4: Water Sales vs. Wastewater Flows shows the I/I analysis results.

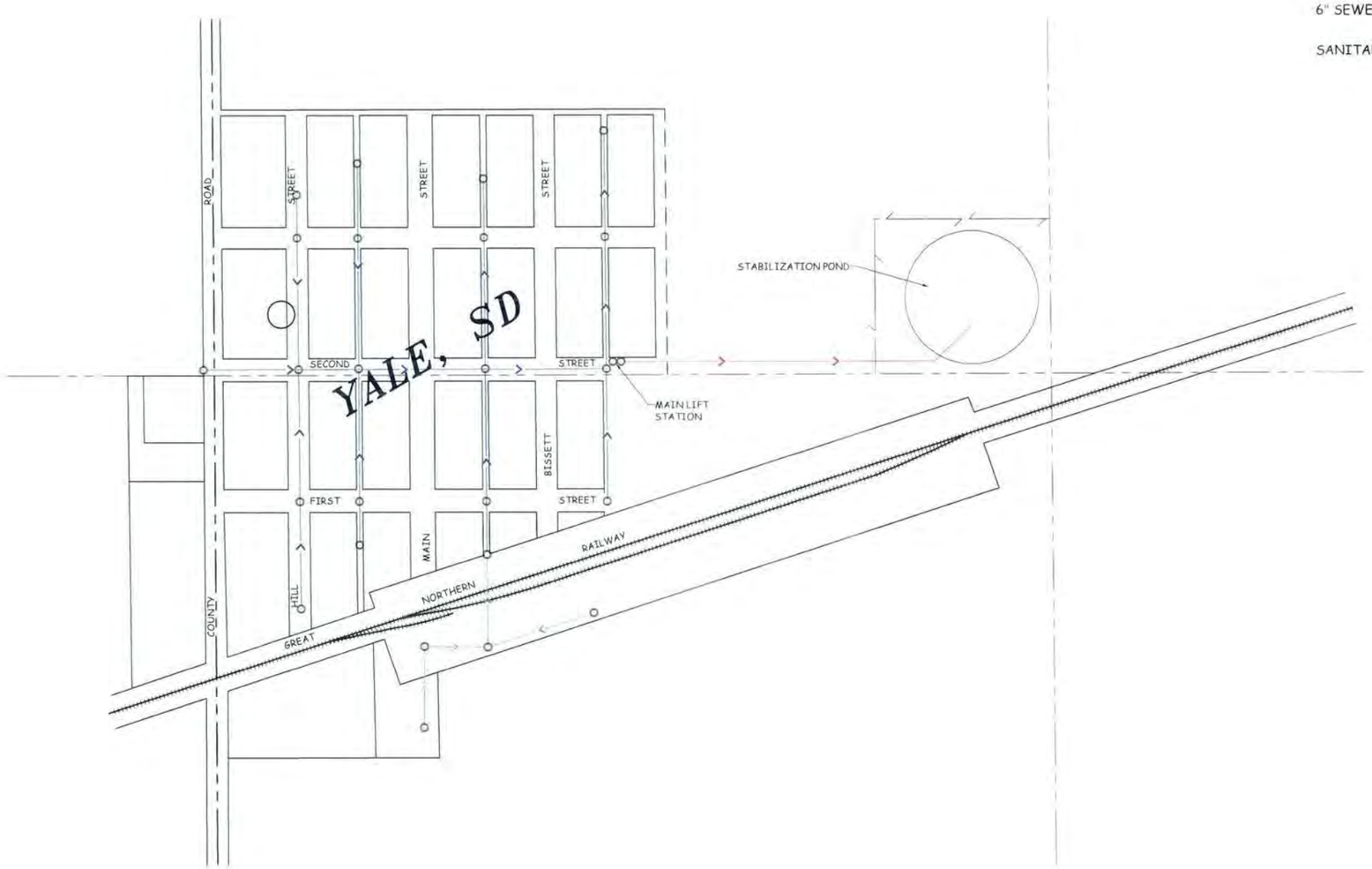
SCALE : NONE

8" GRAVITY SEWER MAIN

6" GRAVITY SEWER MAIN

6" SEWER FORCEMAIN

SANITARY MANHOLE



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409 22nd Ave. S. P.O. Box 298
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CONSULTANTS:

PROJECT TITLE:

YALE WASTEWATER FACILITIES PLAN

PROJECT LOCATION:

YALE, SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO.: 20917.00.00
DATE: MAY 2009

0 1/2" 1"
SCALE REDUCTION BAR

SHEET TITLE:

YALE EXISTING COLLECTION SYSTEM LAYOUT

FIGURE NO.:

4.2

Table 4.4

Water Sales vs. Wastewater Flows

Condition	Winter Influent (gpd)	Winter Sales (gpd)	Winter I/I (gpd)
2003	9,000	---	
2004	11,690	---	
2005	15,002	---	
2006	21,025	5,562	15,464
2007	10,547	8,089	2,458
2008	18,364	9,283	9,081
2009	---	5,822	
Average	14,271	7,189	7,082

During the winter months of January through March for the winters shown above, the average day influent flow to the treatment facility is 14,271 gpd and the average winter resident and nonresident population is 118 which correspond to 121 gallons per capita per day. The water sales during this time period were recorded to be 7,189 gpd or 61 gallons per capita per day. This indicates I/I accounts for approximately 7,082 gpd or 60 gallons per capita per day, which is approximately 50 percent of the average day influent flow to the treatment facility.

The above I/I analyses indicate that the Town of Yale should begin investigating potential sources of I/I. A full scale I/I investigation consisting of lift station flow record investigation, televising, smoke testing, sewer flow measurement and other various means to determine sources of I/I.

4.4 EXISTING ON-SITE DISPOSAL FACILITIES

Any on-site systems that may be present within the service area, if they exist, should be connected to the central collection system and the on-site system should

be abandoned. It is recommended that all occupied houses and businesses should be connected to the new collection system.

Connection of all the occupied houses in the service area is recommended for administrative reasons. If all houses are connected, the costs and the benefits will be shared by all of the residents within the town.

END OF SECTION 4

SECTION 5: PROJECTIONS OF FUTURE NEEDS

5.1 POPULATION TRENDS AND PROJECTIONS

The population of the Town of Yale was investigated for trends and projected for a 20 year design period, to the year 2030. Population projection and trend analysis was accomplished by utilizing U.S. Census Bureau Data collected every 10 years, beginning in 1950 and terminating in the year 2000. The census data was used in conjunction with three well known methods to perform population projections.

The three methods used to determine the projected population for Yale, are described below. The first method is an Arithmetic method which assumes the population increases at a constant rate. The second method is a Decreasing Rate of Increasing which assumes the population increases to a limiting value or saturation point. The final method is geometric progression which places a line of best fit to data based off of historical census data using a compound interest equation.

Since the population of Yale has been decreasing since 1960, the population of the year 2000 of 118 people was used as the design population through year 2030. The results are shown in Figure 5.1: Yale, SD Population Trend. The population projections are presented in Table 5.1: Population Projections in column Resident/Nonresident Population.

Figure 5.1
Population Trends and Projections - Yale, SD

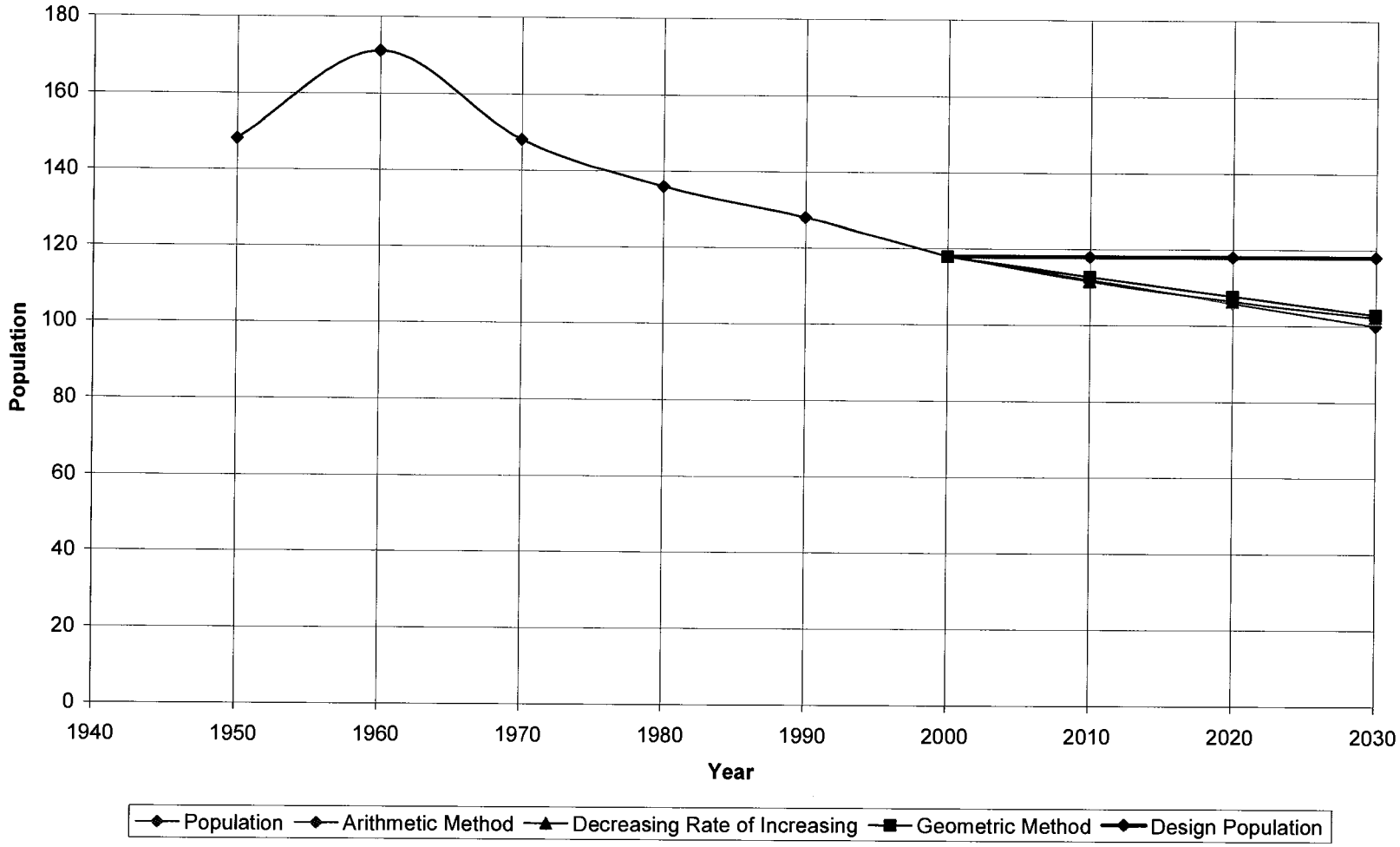

Table 5.1

Population Projections

Year	Population Records	Population Projection	Design Population
1950	164		
1960	171		
1970	148		
1980	136		
1990	128		
2000	118		
2010		112	118
2020		107	118
2030		102	118

5.2 PROJECTIONS OF FUTURE NEEDS

5.2.1 Probable Future Flows: Pump run time records maintained at the treatment facility were provided for the years of 2000 through 2008. The pump capacity of each of the lift station pumps were checked in February of 2009 and were found to be 105.1 gpm for pump No. 1 (south pump), and 122 gpm for pump No. 2 (north pump). The pump run times contained on these records were utilized to calculate the existing and past flow conditions at the WWTF. The annual flow volume was calculated for each year from 2002 through 2009. The average annual flow was found to be 15,396 gpd or 130.5 gpcd. The design flow rate of 15,396 gpd will be used for any total retention stabilization pond treatment alternatives. A running 180-day average was calculated for 2002 through 2009. The peak 180-day average was found to be 26,763 gpd or 227 gpcd. The design flow rate of 26,763 gpd will be used for any 180-day stabilization pond treatment alternatives. The aging collection system contributes to an excess inflow and infiltration problem. A design total I/I reduction of 50% was used to

calculate the size of the total retention stabilization pond for alternatives considering collection system improvements. A design flow rate of 11,855 gpd or 101 gpcd will be used for any total retention stabilization pond treatment alternatives that include collection system improvements or with collection system improvements.

The Capital Improvements Plan and Schedule will be based on the results of this analysis and the data is tabulated in Table 5.2: Design Flows and Loads.

Table 5.2

Design Flows and Loads

Year	Population	Condition	Flow	BOD_5		TSS	
			(gpd)	(mg/l)	(lb/day)	(mg/l)	(lb/day)
2000	118	Avg. Year	15,396	202.2	26.0	0.0	23.6
		Peak 180-days	26,763	116.3	26.0	0.0	23.6
		Reduced I/I	11,855	262.6	26.0	0.0	23.6
2010	118	Avg. Year	15,396	202.2	26.0	0.0	23.6
		Peak 180-days	26,763	116.3	26.0	0.0	23.6
		Reduced I/I	11,855	262.6	26.0	0.0	23.6
2020	118	Avg. Year	15,396	202.2	26.0	0.0	23.6
		Peak 180-days	26,763	116.3	26.0	0.0	23.6
		Reduced I/I	11,855	262.6	26.0	0.0	23.6
2030	118	Avg. Year	15,396	202.2	26.0	0.0	23.6
		Peak 180-days	26,763	116.3	26.0	0.0	23.6
		Reduced I/I	11,855	262.6	26.0	0.0	23.6

5.3 INDUSTRIAL PROJECTIONS

There is no industrial development within the proposed project area that would cause an impact on water or wastewater requirements, and none are expected in the near future.

END OF SECTION 5

SECTION 6: WASTEWATER COLLECTION & TREATMENT ALTERNATIVES

6.1 GENERAL REQUIREMENTS AND CONDITIONS: The existing WWTF circular total retention stabilization pond had a surface are of 2.0 acres. A hydraulic retention time of approximately 162 days for the existing stabilization pond system was calculated using 1/16 inch of seepage per day, the yearly precipitation and estimated annual evaporation. For a total retention pond system a hydraulic retention time of 365 days is required. Therefore, the existing WWTF is hydraulically overloaded with existing flows.

6.1.1 Site Conditions: The proposed location(s) for WWTF are not finalized. All proposed WWTF sites are dependent upon land availability and further investigation of site conditions.

The proposed eastern site for the WWTF is approximately ¼ of a mile east of Yale between 203rd street and the railroad. The proposed eastern site is in the southwest ¼ of the northeast ¼ of Section 12 Township 111 north Range 60 west. The soil survey of Beadle County as completed by the United States Department of Agriculture (USDA) indicates the soil in the eastern site is follows BdA. BdA soils are "Not limited" for use for stabilization ponds. "Not limited" rating signifies that the soil has feature that are very favorable for stabilization ponds. Good performance and very low maintenance can be expected. The soil liner for the any new stabilization pond constructed in this area will likely come from the project site soil. Table 6.1 shows the soil description and rating for the eastern site

Table 6.1

Soil Description and Ratings for Eastern Site

Soil unit Symbol	Soil unit name	Rating	Component Name (percent)	Rating reasons (numeric values)
BdA	Beadle-Dudley complex, 0 to 2 pecent slopes	Not Limited	Beadle (55%)	
			Jerauld (5%)	

The proposed southern site for the WWTF is along the west side of 412th avenue and just north of 204th street. The proposed southern site is in the southeast ¼ of the southeast ¼ of Section 12 Township 111 north Range 60 west. The soil survey of Beadle County as completed by the United States Department of Agriculture (USDA) indicates the soil in the eastern site are DsA and HoB. Most of the pond would be located in HoB soil. Both HoB and DsA soils are "Somewhat limited" for use for stabilization ponds. "Somewhat limited" rating signifies that the soil has feature that are moderately favorable for stabilization ponds. The limitations can be overcome or minimized by special planning design or installation. Fair performance and moderate maintenance can be expected. The soil liner for the any new stabilization pond constructed in this area will likely need to be hauled in from a remote location. Table 6.2 shows the soil description and rating for the southern site

Table 6.2

Soil Description and Ratings for Southern Site

Soil unit Symbol	Soil unit name	Rating	Component Name (percent)	Rating reasons (numeric values)
BdA	Beadle-Dudley complex, 0 to 2 percent slopes	Not Limited	Beadle (55%)	
			Jerauld (5%)	
DsA	Dudley-Stickney silt loams, 0 to 3 percent slopes	Somewhat limited	Dudley (45%)	Depth to saturated zone (0.40)
			Stickney (35%)	Depth to saturated zone (0.40)
			Davison (5%)	Seepage (0.50)
				Depth to saturated zone (0.40)
HoB	Houdek-Prosper loams, 2 to 6 percent slopes	Somewhat limited	Houdek (55%)	Seepage (0.50)
				Slope (0.32)
			Prosper (30%)	Seepage (0.50)
				Slope (0.32)
			Dudley (3%)	Depth to saturated zone (0.40)
			Davison (3%)	Seepage (0.50)
				Depth to saturated zone (0.04)
			Stickney (3%)	Depth to saturated zone (0.40)

Considered in the ratings are slope, Ksat, depth to a water table, ponding, depth to bedrock or cemented plant, flooding, large stones and content of organic matter. Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. The greatest negative impact on use for stabilization ponds is

(1.00) and the point which the soil feature is not a limitation (0.00). The complete USDA soil survey map and soil descriptions can be found in Appendix C.

6.2 DESCRIPTION OF ALTERNATIVES:

The purpose of this section of the facility plan document is to evaluate the alternatives for improvements necessary to collect and treat the future wastewater flow and loads from the Town of Yale. The evaluation also considers a "No Action" alternative. Since the existing WWTF is surrounded by wetlands the new treatment facility cannot be located adjacent to the existing facility. Therefore, salvaging the existing facility was not considered as part of the alternatives. Treatment system alternatives include total retention pond system constructed at eastern site, 180-day stabilization pond system constructed at eastern site and pumping to pearl creek, 180-day stabilization pond system constructed at southern site and gravity flow to pearl creek. The following describe the alternatives as presented in this report.

- Alternative 1: Replace Collection System and Construct Total Retention Pond System at Eastern Site.
- Alternative 2: Line Collection System and Construct Total Retention Pond System at Eastern Site.
- Alternative 3: Total Retention Pond System at Eastern Site.
- Alternative 4: 180-Day Pond System at Eastern Site.
- Alternative 5: 180-Day Pond System at Southern Site.

6.3 EVALUATION OF ALTERNATIVES

6.3.1 <u>Alternative 1 – Replace Collection System and Construct Total Retention Pond System at Eastern Site</u>: This alternative involves replacing the entire gravity sewer piping within the collection system and rehabilitating all of the manholes. The collection system is over forty years old and consists of

5,981 lineal feet of 8" diameter vitrified clay pipe and 820 lineal feet of 6" diameter vitrified clay pipe. Refer to Figure 4.2 to view the existing collection system layout. With the collection system improvements, a reduced design flow was used to account for the likely I/I reduction. For this alternative the eastern site was selected.

The existing main lift station would likely need to be replaced and approximately 800 lineal feet of new forcemain installed connecting the existing forcemain to the proposed total retention stabilization pond system.

Based on design flow, the new pond system would need to have a total combined area of 5.1-acres. According to SDDENR stabilization pond design criteria the area of the primary cell should be approximately 50-60% of the total pond area and be loaded at no more than 30 lbs BOD_5 per acre. The proposed primary pond (cell #1) is 2.6 acres which is about 50% of the total area. The proposed secondary pond (cell #2) is 2.6 acres which is 50% of the total area. According to SD DENR the entire pond system is to be loaded no more than 20 lbs BOD_5 per acre. Figure 6.1 shows the proposed total retention treatment system for this alternative.

An Opinion of Probable Project Costs for this alternative was prepared using recent project prices obtained from Bid Tabs. The project estimate is summarized in Table 6.3: Collection System Alternative 1 – Replace Gravity Sewer Piping and Rehabilitate Manholes. An itemization of costs for this alternative is attached in Appendix E of this report.

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Consulting Engineers & Architects
409 22nd Ave. S. P.O. Box 298
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605-692-6342
www.bannerassociates.com
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CONSULTANTS:

PROJECT TITLE:

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WASTEWATER
FACILITIES
PLAN

PROJECT LOCATION:
YALE,
SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO: 20917.00.00
DATE: APRIL 2009
0 1/2" 1"
SCALE REDUCTION BAR

SHEET TITLE:

TREATMENT
SYSTEM
ALTERNATE
NO. 1

FIGURE NO.:
6.1

Table 6.3

Alternative 1 – Replace Collection System and Construct Total Retention Pond System at Eastern Site

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$1,295,300
Design and Resident Engineering	$190,800
Project administration and Legal	$64,800
Opinion of Probable Project Cost	**$1,551,000**

An estimate of probable O&M costs was prepared for this alternative. A Summary of the estimated O&M cost for this alternative is shown in Table 6.4: Estimated Annual O&M Costs – Replace Collection System and Construct Total Retention Pond System at Eastern Site. A complete listing of probable annual O&M costs can be seen in Appendix E of this report.

Table 6.4

Estimated Annual O&M Costs – Replace Collection System and Construct Total Retention Pond System at Eastern Site

Item	Annual Cost
Total O & M Annual Cost	**$ 3,600**

6.3.2 Alternative 2 – Line Collection System and Construct Total Retention Pond System at Eastern Site: This alternative involves lining the entire gravity sewer piping within the collection system and rehabilitating all of the manholes. The collection system is over forty years old and consists of 5,981 lineal feet of 8" diameter vitrified clay pipe and 820 lineal feet of 6" diameter vitrified clay pipe. Refer to Figure 4.2 to view the existing collection system layout. With the collection system improvements, a reduced design flow was used to account for the likely I/I reduction. For this alternative the eastern site was selected.

The existing main lift station would likely need to be replaced and approximately 800 lineal feet of new forcemain installed connecting the existing forcemain to the proposed total retention stabilization pond system.

Based on design flow, the new pond system would need to have a total combined area of 5.1-acres. According to SDDENR stabilization pond design criteria the area of the primary cell should be approximately 50-60% of the total pond area and be loaded at no more than 30 lbs BOD_5 per acre. The proposed primary pond (cell #1) is 2.6 acres which is about 50% of the total area. The proposed secondary pond (cell #2) is 2.6 acres which is 50% of the total area. According to SD DENR the entire pond system is to be loaded no more than 20 lbs BOD_5 per acre. Figure 6.2 shows the proposed total retention treatment system for this alternative.

An Opinion of Probable Project Costs for this alternative was prepared using recent project prices obtained from Bid Tabs. The project estimate is summarized in Table 6.5: Alternative 2 – Line Collection System and Construct Total Retention Pond System at Eastern Site. An itemization of costs for this alternative is attached in Appendix E of this report.

Table 6.5

Alternative 2 – Line Collection System and Construct Total Retention Pond System at Eastern Site

Description	**Opinion of Probable Cost**
Opinion of Probable Capital Costs and Contingencies	$1,176,900
Design and Resident Engineering	$175,800
Project administration and Legal	$58,900
Opinion of Probable Project Cost	**$1,412,000**

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SHEET TITLE:

TREATMENT
SYSTEM
ALTERNATE
NO. 2

FIGURE NO.:
6.2

An estimate of probable O&M costs was prepared for this alternative. A Summary of the estimated O&M cost for this alternative is shown in Table 6.6: Estimated Annual O&M Costs – Line Collection System and Construct Total Retention Pond System at Eastern Site. A complete listing of probable annual O&M costs can be seen in Appendix E of this report.

Table 6.6

Estimated Annual O&M Costs – Line Collection System and Construct Total Retention Pond System at Eastern Site

Item	Annual Cost
Total O & M Annual Cost	**$ 3,600**

6.3.3 Alternative 3 – Total Retention Pond System at Eastern Site: For this alternative the proposed eastern site was selected. The existing main lift station would likely need to be replaced and approximately 800 lineal feet of new forcemain installed connecting the existing forcemain to the proposed total retention stabilization pond system.

Based on design average annual flows the new pond system would need to have a total combined area of 6.8-acres. According to SDDENR stabilization pond design criteria the area of the primary cell should be approximately 50-60% of the total pond area and be loaded at no more than 30 lbs BOD_5 per acre. The proposed primary pond (cell #1) is 3.4 acres which is about 50% of the total area. The proposed secondary pond (cell #2) is 3.4 acres which is 50% of the total area. According to SD DENR the entire pond system is to be loaded no more than 20 lbs BOD_5 per acre. Figure 6.3 shows the proposed total retention treatment system for this alternative.

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0 1/2" 1"
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SHEET TITLE:

TREATMENT
SYSTEM
ALTERNATIVE
NO. 3

FIGURE NO.:
6.3

An Opinion of Probable Project Costs for this alternative was prepared using recent project prices obtained from Bid Tabs. The project estimate is summarized in Table 6.7: Alternative 3 – Total Retention Pond System at Eastern Site. An itemization of costs for this alternative is attached in Appendix E of this report.

Table 6.7

Alternative 3 –

Total Retention Pond System at Eastern Site

Description	**Opinion of Probable Cost**
Opinion of Probable Capital Costs and Contingencies	$944 ,000
Design and Resident Engineering	$146,200
Project administration and Legal	$47,200
Opinion of Probable Project Cost	**$1,138,000**

An estimate of probable O&M costs was prepared for this alternative. A Summary of the estimated O&M cost for this alternative is shown in Table 6.8: Estimated Annual O&M Costs – Total Retention Pond System at Eastern Site. A complete listing of probable annual O&M costs can be seen in Appendix E of this report.

Table 6.8

Estimated Annual O&M Costs – Total Retention Pond System at Eastern Site

Item	**Annual Cost**
Total O & M Annual Cost	**$ 3,600**

6.3.4 Alternative 4 – 180-Day Pond System at Eastern Site: For this alternative the proposed eastern site was selected. The existing main lift station would likely need to be replaced, and approximately 800 lineal feet of new

forcemain connecting the existing forcemain to the proposed 180-day pond system would need to be installed.

Based on design peak 180-day flow the new pond system would need to have a total combined area of 5.8-acres. According to SDDENR stabilization pond design criteria the area of the primary cell should be approximately 50-60% of the total pond area and be loaded at no more than 30 lbs BOD_5 per acre. The proposed primary pond (cell #1) is 2.9 acres which is about 50% of the total area. The proposed secondary pond (cell #2) is 2.9 acres which is 50% of the total area. According to SD DENR the entire pond system is to be loaded no more than 20 lbs BOD_5 per acre. Figure 6.4 shows the proposed 180-day pond system for this alternative.

The proposed new 180-day pond would require an additional lift station adjacent to the new pond system and approximately 7,300 lineal feet of forcemain. The new lift station would pump pond effluent to Pearl Creek. The forcemain would run south along 412th avenue and discharge to Pearl Creek in the northwest ¼ of the southwest ¼ of Section 18 Township 111 north Range 60 west.

An Opinion of Probable Project Costs for this alternative was prepared using recent project prices obtained from Bid Tabs. The project estimate is summarized in Table 6.9: Alternative 4 – 180-Day Pond System at Eastern Site. An itemization of costs for this alternative is attached in Appendix E of this report.

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Consulting Engineers & Architects
409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-6342
www.bannerassociates.com
Designing Projects, Building Trust

CONSULTANTS:

PROJECT TITLE:
YALE WASTEWATER FACILITIES PLAN

PROJECT LOCATION:
YALE, SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO: 20917.00.00
DATE: APRIL 2009
0 1/2" 1"
SCALE REDUCTION BAR

SHEET TITLE:
TREATMENT SYSTEM ALTERNATE NO. 4

FIGURE NO.:
6.4

Table 6.9

Alternative 4 – 180-Day Pond System at Eastern Site

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$1,309,000
Design and Resident Engineering	$192,600
Project administration and Legal	$65,500
Opinion of Probable Project Cost	**$1,568,000**

An estimate of probable O&M costs was prepared for this alternative. A Summary of the estimated O&M cost for this alternative is shown in Table 6.10: Estimated Annual O&M Costs – 180-Day Pond System at Eastern Site. A complete listing of probable annual O&M costs can be seen in appendix E of this report.

Table 6.10

Estimated Annual O&M Costs – 180-Day Pond System at Eastern Site

Item	Annual Cost
Total O & M Annual Cost	**$ 6,100**

6.3.5 Alternative 5 – 180-Day Pond System at Southern Site: For this alternative the proposed southern site was selected. The existing main lift station would likely need to be replaced and approximately 5,900 lineal feet of new forcemain would have to be installed from the main lift station to the proposed 180-day pond system. Installation of the forcemain would require directional boring underneath the railroad tracks that run along the south end of town.

Based on design peak annual flows the new pond system would need to have a total combined area of 5.8-acres. According to SDDENR stabilization pond design criteria the area of the primary cell should be

approximately 50-60% of the total pond area and be loaded at no more than 30 lbs BOD_5 per acre. The proposed primary pond (cell #1) is 2.9 acres which is about 50% of the total area. The proposed secondary pond (cell #2) is 2.9 acres which is 50% of the total area. According to SD DENR the entire pond system is to be loaded no more than 20 lbs BOD_5 per acre. Figure 6.5 shows the proposed 180-day pond system for this alternative.

The proposed new 180-day pond would require approximately 2,200 lineal feet of gravity effluent pipe. The new lift the gravity effluent pipe would convey pond effluent to Pearl Creek. The gravity effluent pipe would run south along 412th avenue and discharge to Pearl Creek in the northwest ¼ of the southwest ¼ of Section 18 Township 111 north Range 60 west.

An Opinion of Probable Project Costs for this alternative was prepared using recent project prices obtained from Bid Tabs. The project estimate is summarized in Table 6.11: Alternative 5 – 180-Day Pond System at Southern Site. An itemization of costs for this alternative is attached in Appendix E of this report.

Table 6.11

Alternative 5 – 180-Day Pond System at Southern Site

Description	**Opinion of Probable Cost**
Opinion of Probable Capital Costs and Contingencies	$1,212,200
Design and Resident Engineering	$180,300
Project administration and Legal	$60,700
Opinion of Probable Project Cost	**$1,454,000**

An estimate of probable O&M costs was prepared for this alternative. A Summary of the estimated O&M cost for this alternative is shown in Table

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Consulting Engineers & Architects

409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-6342
www.bannerassociates.com

Designing Projects, Building Trust

CONSULTANTS:

PROJECT TITLE:
YALE WASTEWATER FACILITIES PLAN

PROJECT LOCATION:
YALE, SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO.: 20917.00.00
DATE: APRIL 2009

SCALE REDUCTION BAR

SHEET TITLE:
TREATMENT SYSTEM ALTERNATE NO. 5

FIGURE NO.:
6.5

6.12: Estimated Annual O&M Costs – 180-Day Pond System at Southern Site. A complete listing of probable annual O&M costs can be seen in appendix E of this report.

Table 6.12

Estimated Annual O&M Costs – 180-Day Pond System at Southern Site

Item	Annual Cost
Total O & M Annual Cost	**$ 6,100**

6.4 IMPACT OF A "NO-ACTION" ALTERNATIVE

Existing Yale wastewater treatment facility is currently hydraulically overloaded. A "No-Action" alternative would require the continued operation of a hydraulically overloaded system resulting in an increased likelihood of effluent permit violations.

6.5 COST EFFECTIVENESS SUMMARY:

6.6.1 Annual Debt Retirement. It may not be economically feasible to upgrade the existing wastewater treatment facility for the Town of Yale unless substantial grants and low interest loans are obtained. Grants and loans for wastewater projects may be available from the Governor's Office of Economic Development, which administers the Community Development Block Grant (CDBG). Grants and loans are similarly available through Rural Development and the South Dakota Department of Environment and Natural Resources. The State of South Dakota administers the State Revolving Loan Fund (SRF), which makes low interest loans available (3.00% for 20 years).

6.6.2 Equivalent Annual Cost Evaluation: This evaluation is presented as a basis of comparing systems which may be more capital intensive with other

systems which are more operation and maintenance intensive. Equivalent annual costs are the annual debt retirement plus the annual operational and maintenance costs. Annual debt retirement, for this evaluation, was calculated based on the opinion of probable project costs with no grants available. Table 6.14 summarizes the equivalent annual cost for each alternative.

Table 6.14

Equivalent Annual Costs

Alternative No.	Annual Debt Retirement	Additional Annual O & M	Equivalent Annual Cost
Alt. 1 – Replace Collection System and Construct Total Retention Pond Syst. at Eastern Site	$104,252	$3,600	$107,852
Alt. 2 - Line Collection System and Construct Total Retention Pond Syst. at Eastern Site	$94,909	$3,600	$98,509
Alt. 3 – Total Retention Pond Syst. at Eastern Site	$76,491	$3,600	$80,091
Alt. 4 – 180-Day Pond Syst. at Eastern Site	$105,394	$6,100	$111,494
Alt. 5 – 180-Day Pond Syst. at Southern Site	$97,732	$5,700	$103,432

6.6 SUMMARY AND RECOMMENDATIONS

Section 6 of this report described possible alternatives available for use to treat existing and proposed future flow and loadings.

Each of the treatment alternatives were carefully examined with respect to feasibility of construction, future expandability, quality of treatment, and cost of construction and ownership.

Since the combined construction and maintenance costs associated with alternative number three - a total retention pond system located at the eastern site is the least

cost alternative this alternative was selected as the recommended alternative. This alternative has the lowest construction and maintenance costs. This alternative would have the flexibility to handle seasonal variations in flow and allow for future expansion. Therefore, Section 7 of this report will discuss the implementation and schedule for this selected alternative.

END OF SECTION 6

SECTION 7: RECOMMENDATIONS AND CAPITAL IMPROVEMENTS PLAN

7.1 GENERAL

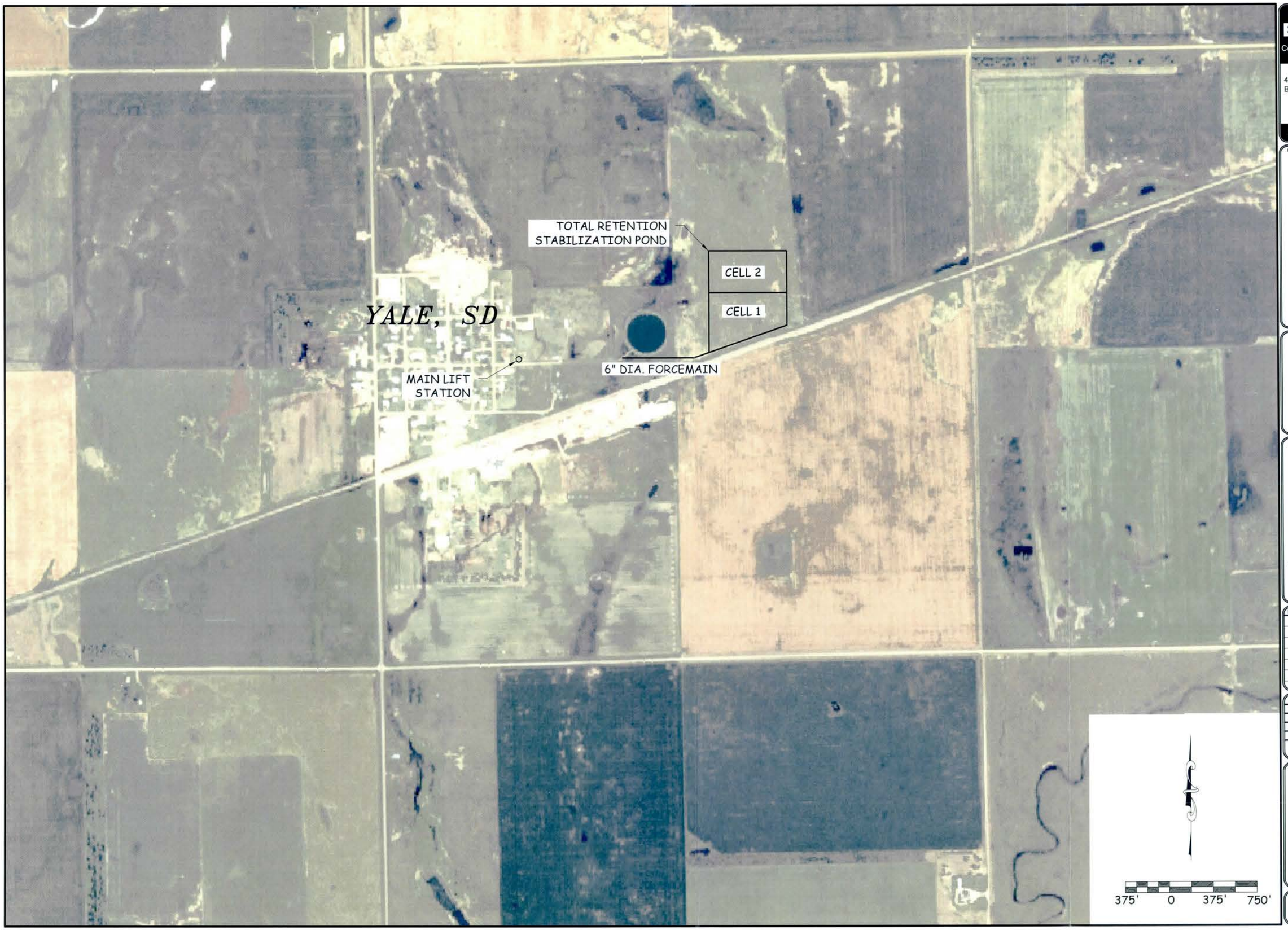
The existing Yale Wastewater Treatment Facility is a 2 acre bi-level total retention stabilization pond. Evaluation of the existing system indicated that the stabilization pond is hydraulically overloaded with respect to SDDENR design criteria. These issues, in conjunction with past pond dike overtopping, have prompted the Town of Yale to improve their current treatment facilities.

Alternatives were presented and investigated in Section 6 of this report. Selection of the 180-day stabilization pond at the southern site alternative was based on having the lowest equivalent uniform annual cost and lowest construction cost of the alternatives. Figure 7.1: Proposed Site Plan shows the location of the proposed construction.

7.2 DESCRIPTION OF SELECTED IMPROVEMENTS

7.2.1 Alternative 3 – Total Retention Pond System at Eastern Site: The existing wastewater forcemain and gravity sewer would be intercepted and flow directly to the new total retention stabilization pond system at the eastern site. Here, wastewater would undergo treatment. The individual treatment processes of this alternative are listed below:

- Main lift station
- Influent Structure
- Stabilization Cell 1
- Flow Control Structure
- Stabilization Cell 2



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Consulting Engineers & Architects
409 22nd Ave. S. P.O. Box 298
Brookings, South Dakota 57006
605-692-6342
www.bannerassociates.com
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CONSULTANTS:

PROJECT TITLE:

YALE
WASTEWATER
FACILITIES
PLAN

PROJECT LOCATION:

YALE,
SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: A.M.E.
DESIGNED BY: J.J.M.
CHECKED BY: D.F.R.
JOB NO.: 20917.00.00
DATE: APRIL 2009

0 1/2" 1"
SCALE REDUCTION BAR

SHEET TITLE:

PROPOSED
SITE
PLAN

FIGURE NO.:

7.1

Construction of the new facility will require a new forcemain to be routed to the new facility. Here, wastewater will enter the stabilization cell number one, flow will be transferred to cell number 2 through the flow control structure.

7.3 ESTIMATED REVENUE REQUIREMENTS AND UTILITY RATE ADJUSTMENTS

7.3.1 Changes in Operation and Maintenance Costs: The Town of Yale has maintained an Operation and Maintenance budget of approximately $1,800 per year. The O&M budget is expected to increase due to the increase in labor hours for a larger stabilization pond system and more buried piping. Table 7.1: Opinion of Probable Additional Annual Operation and Maintenance Costs shows the affected O&M categories and the cost increase. A detailed breakdown of the Probable Annual O&M Costs is contained in Appendix E: Opinion of Probable Capital Costs and Annual O&M Costs.

Table 7.1

Opinion of Probable Annual Operation and Maintenance Costs

Account Number	Account Description	Total O&M Cost
Opinion of Total O&M Costs		**$3,600**

7.3.2 Revenue Requirements and Probable Rate Adjustments: Table 7.2: Opinion of Probable Project Costs contains the probable project costs associated with the proposed facility improvements.

Table 7.2

Opinion of Probable Project Costs

Description	Opinion of Probable Cost
Opinion of Probable Capital Costs and Contingencies	$944 ,000
Design and Resident Engineering	$146,200
Project administration and Legal	$47,200
Opinion of Probable Project Cost	**$1,138,000**

It was assumed for purposes of rate calculations that the project will be financed with a combination of grants and loans. It was also assumed that the Town of Yale will be eligible for a State Revolving Fund (SRF) loan with a 20-yr term at 3.00% interest.

The Town of Yale currently utilizes a flat fee for each account to calculate their monthly sewer bill.

The following two tables contain the probable project costs associated with the proposed project costs displayed in Table 7.2. Each table lists the total project costs at their associated year of construction based on a 4% inflation rate and the corresponding annual loan payments. A contingencies allowance of 10% is also included in the project budget as

an allowance for costs associated with small changes in project scope that may occur as the project moves from the planning phase to the final design phase. The following tables will demonstrate possible wastewater rate increases to fund the proposed improvements

Table 7.3: Wastewater Rate Adjustment – 50% Grants determines the required change in wastewater rates to fund the proposed improvements and Table 7.4: Wastewater Rate Adjustment – 77% Grants determines the required change in wastewater rates to fund the proposed improvements.

Table 7.3

Wastewater Rate Adjustment – 50% Grants

Rate Adjustment Using 50% Grant, Alternative No. 3 (Total Retention Pond System at Eastern Site)				
Construction Season (Yr)	2009 Budget	2010	Loan 1 2011	2012
Opinion of Probable Construction Costs & Contingencies*			$1,021,030	
Engineering*			$159,130	
Administration*			$51,052	
Probable Project Costs			$1,230,212	
Grant Participation - Percent			50%	
Grant Participation - Amount			$615,106	
Participation from Local Funds (Reserve Contribution)			$0	
Loan Amount			$615,106	
Debt Service (3.25% and 20-yr term)			$42,306	
Reserve (10% of Debt Service)			$4,231	
Debt Service from Loan 1	$0	$0	$0	$46,537
Cost for O&M (Budget)**	$1,800	$1,872	$1,947	$3,894
Total Annual Expenses	**$1,800**	**$1,872**	**$1,947**	**$50,431**
Total Number of Accounts	54	54	54	54
Monthly Minimum	$6.00	$6.00	$6.00	$6.00
Annual Income	$3,888	$3,888	$3,888	$3,888
Status Quo Total Annual Income	$3,888	$3,888	$3,888	$3,888
Proposed Total Annual Income	**$3,888**	**$3,888**	**$3,888**	**$50,544**
DIFFERENCE (INCOME - EXPENSES)	$2,088	$2,016	$1,941	$113
Accumulated Cash on Hand at End of Year	$2,088	$4,200	$6,200	$6,400
Proposed Monthly Minimum	$6.00	$6.00	$6.00	**$78.00**

Table 7.4

Wastewater Rate Adjustment – 77% Grants

Rate Adjustment Using 77% Grant, Alternative No. 3 (Total Retention Pond System at Eastern Site)				
Construction Season (Yr)	2009 Budget	2010	Loan 1 2011	2012
Opinion of Probable Construction Costs & Contingencies*			$1,021,030	
Engineering*			$158,130	
Administration*			$51,052	
Probable Project Costs			$1,230,212	
Grant Participation - Percent			77%	
Grant Participation - Amount			$947,263	
Participation from Local Funds (Reserve Contribution)			$0	
Loan Amount			$282,949	
Debt Service (3.25% and 20-yr term)			$19,461	
Reserve (10% of Debt Service)			$1,946	
Debt Service from Loan 1	$0	$0	$0	$21,407
Cost for O&M (Budget)**	$1,800	$1,872	$1,947	$3,894
Total Annual Expenses	**$1,800**	**$1,872**	**$1,947**	**$25,301**
Total Number of Accounts	54	54	54	54
Monthly Minimum	$6.00	$6.00	$6.00	$6.00
Annual Income	$3,888	$3,888	$3,888	$3,888
Status Quo Total Annual Income	$3,888	$3,888	$3,888	$3,888
Proposed Total Annual Income	**$3,888**	**$3,888**	**$3,888**	**$25,920**
DIFFERENCE (INCOME - EXPENSES)	$2,088	$2,016	$1,941	$619
Accumulated Cash on Hand at End of Year	$2,088	$4,200	$6,200	$6,900
Proposed Monthly Minimum	$6.00	$6.00	$6.00	**$40.00**

The wastewater rates for Tables 7.3 and 7.4 were adjusted to cover the O&M budget and the debt service of the loan for the project. Rate adjustments were accomplished by increasing the monthly flat rate to cover the proposed debt service O&M budget of the wastewater treatment facility and collection system.

Table 7.3 demonstrates that by funding the WWTF improvements with a combination of loans and 50% grants, the proposed 2012 wastewater rates are expected to increase to $78.00 per month. Table 7.4 calculates the proposed wastewater rates with a combination of loans and 77% grants and indicates that the proposed 2012 wastewater rates are expected to increase to $40.00 per month.

The methods and results of the wastewater rate analysis depict only one method to calculate the proposed residential and commercial wastewater rates. It is recommended that the Town of Yale carefully investigate all possible methods of wastewater rate adjustment to obtain the proposed wastewater rates and structure that provides the income necessary to fund the improvements.

7.4 IMPLEMENTATION PLAN AND SCHEDULE

Completion of the improvements recommended in this report will require scheduling and coordination of activities for planning, design and construction of the improvements. The activities necessary in the near future are those associated with the final planning and design activities to qualify the project for State Revolving Funds (SRF) loans and design of the recommended treatment facility improvements. Several of the critical tasks and associated target dates are summarized in Table 7.5: Implementation Schedule.

Table 7.5

Implementation Schedule

Task	Recommended Dates
Presentation and Acceptance of the Wastewater Facilities Plan	June, 2009
State Water Plan Application	August 1, 2009
Placement on State Water Plan	September, 2009
Consolidated Grant Application	October 1, 2009
Consolidated Grant Review/Approval	January, 2010
DENR SRF Loan Application	January 15, 2010
DENR Approval for SRF Loan	March, 2010
Notice to Proceed on Design	April, 2010
Submit Plans and Specifications for Review	October, 2010
Open Bids for Improvements	December, 2010
Start Construction of Improvements	January, 2011
Substantial Completion of Improvements	June 1, 2011
Final Completion of Improvements	Aug 1, 2011
Complete One Year Warranty Period	June 1, 2012

END OF SECTION 7

Appendix A

Surface Water Discharge Permit, and Minor No Discharge Permit Worksheet

Permit No.: SDG822071

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL AVENUE
PIERRE, SOUTH DAKOTA 57501-3181

GENERAL SURFACE WATER DISCHARGE PERMIT

FOR MINOR NON-DISCHARGING DOMESTIC WASTEWATER TREATMENT FACILITIES

UNDER THE

SOUTH DAKOTA SURFACE WATER DISCHARGE SYSTEM

In compliance with the provisions of the South Dakota Water Pollution Control Act and the Administrative Rules of South Dakota (ARSD), Article 74:52,

Town of Yale

is directed by the South Dakota Department of Environment and Natural Resources to have **no discharge** from its wastewater treatment facility located in the southeast ¼ of the northwest ¼ of Section 12, Township 111 North, Range 60 West, in Beadle County, in accordance with the requirements as contained in the provisions of this general permit. The permittee must comply with all conditions of this general permit. Any permit noncompliance constitutes a violation of the South Dakota Water Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

This general permit shall become effective **April 01, 2006**. General permit coverage for the Town of Yale shall become effective **May 17, 2006**

This general permit shall expire at midnight **March 31, 2011**.

Signed this 29th day of March 2006.

Authorized Permitting Official

Steven M. Pirner
Secretary
Department of Environment and Natural Resources

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APPENDIXES –

A. NOTICE OF INTENT FOR COVERAGE UNDER THE GENERAL SURFACE WATER DISCHARGE PERMITS FOR MINOR PUBLICLY-OWNED TREATMENT WORKS
B. UNAUTHORIZED DISCHARGE MONITORING SUMMARY FORM

DEFINITIONS

ARSD means the Administrative Rules of South Dakota.

BOD_5 means Five-Day Biochemical Oxygen Demand. BOD is a measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a sample.

A **Bypass** is the intentional diversion of waste streams from any portion of a treatment facility. Bypasses do not include releases from the sanitary sewer collection system (see sanitary sewer overflow) or unauthorized releases from the treatment facility (see unauthorized release). Bypasses may result in a discharge or unauthorized release.

Composite samples shall be flow proportioned. The composite sample shall contain at least four samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous collection of sample, with sample collection rate proportional to flow rate.

Daily maximum (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

An **Emergency release** is a discharge from the lower end of the treatment or containment system through a release structure or over or through retention dikes. An emergency release is distinguished from a sanitary sewer overflow in that a sanitary sewer overflow discharges wastewater prior to treatment or containment.

A **Grab** sample, for monitoring requirements, is a single "dip and take" sample collected at a representative point in the discharge stream.

An **Instantaneous measurement**, for monitoring requirements, is a single reading, observation, or measurement.

pH is the measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

A **Publicly-owned treated works** or **POTW** is any device or system used in the treatment, including recycling and reclamation, of municipal sewage or industrial waste of a liquid nature which is owned by the state or a municipality. This term includes sewers, pipes, or other conveyances only if they convey wastewater to a publicly owned treatment works providing treatment.

A **Sanitary sewer overflow** is the intentional or unintentional discharge of untreated sewage from the sanitary sewer collection system, including sewer lines, manholes, lift stations, etc.

SDDENR means the South Dakota Department of Environment and Natural Resources.

Secretary means the Secretary of the South Dakota Department of Environment and Natural Resources, or authorized representative.

Severe property damage is substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Sewage sludge is any solid, semi-solid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes but is not limited to solids removed during primary, secondary or advanced wastewater treatment, scum, septage, portable toilet pumpings, and sewage sludge products. Sewage sludge does not include grit, screenings, or ash generated during the incineration of sewage sludge.

TSS means **Total Suspended Solids**. TSS is a measure of the filterable solids present in a sample.

1.0 EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1.1 Request for Coverage under General Permit

This general permit is potentially applicable to any non-discharging wastewater treatment facilities within South Dakota that are treating primarily domestic wastewater. In order for a facility to be eligible for coverage under this general permit, the owner, operator, and/or authorized agent of any facility desiring to obtain coverage under this general permit must complete and submit a Notice of Intent form, located in Appendix A of this general permit. Applications for individual Surface Water Discharge permits may also serve as a Notice of Intent form and be accepted by the Secretary, provided they contain the information and signatures required to properly grant or deny general permit coverage. The original form must be sent to the following address:

South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol
Pierre, South Dakota 57501-3181
Telephone: (605) 773-3351

Coverage provided under this general permit is limited to those activities specifically designated in the permittee's Notice of Intent and as approved in the letter from the Secretary granting general permit coverage. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from the permittee first learning of an unauthorized discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act.

1.2 Effluent Limits

Effective immediately and lasting through the life of this general permit, there shall be **no discharge** from the permittee's treatment facility except in accordance with the **Section 2.11 – 24-hour Notice of Noncompliance Reporting** provisions of this general permit. If an unauthorized release, bypass, sanitary sewer overflow, or other discharge occurs or is expected to occur, the permittee shall report the occurrence in accordance with Section 2.11 and take the appropriate measures to minimize the discharge of pollutants. Such measures may include the closing of facilities that contribute wastewater to the sewer system until the discharge is terminated.

1.3 Self-Monitoring Requirements

Promptly upon discovery of an emergency release, bypass, sanitary sewer overflow, or other discharge, the discharge shall be monitored as shown below. Knowingly discharging from an unauthorized location or failing to report a discharge within a reasonable time from the permittee first learning of a discharge could subject the permittee to penalties as provided under the South Dakota Water Pollution Control Act. The permittee shall report the monitoring results in accordance with **Section 2.3 – Reporting of Monitoring Results.**

Effluent Characteristic	Frequency	Sample Type
Flow Rate, million gallons per day	At least three per discharge [2]	Instantaneous
Total Flow, million gallons	each discharge	Calculated
Duration of Discharge, days	each discharge	Calculated
pH, standard units	At least three per discharge [2]	Instantaneous
Total Residual Chlorine, mg/L (only if chlorinating)	At least three per discharge [2]	Instantaneous
Water Temperature, °C	At least three per discharge [2]	Instantaneous
Total Suspended Solids, mg/L	At least three per discharge [2]	Grab or Composite
BOD_5, mg/L	At least three per discharge [2]	Grab or Composite
Ammonia as N, mg/L	At least three per discharge [2]	Grab or Composite
Fecal Coliform, no./100 mL	At least three per discharge [2]	Grab
Total Coliform, no./100 mL	At least three per discharge [2]	Grab

[1] See Definitions.

[2] A minimum of three samples shall be taken during any discharge. Samples shall be taken at the beginning, middle, and end of the discharge if the discharge is less than one week in duration. If a single, continuous discharge is greater than one week in duration, three samples shall be taken the first week and one each following week.

1.4 Inspection Requirements

The permittee shall inspect its wastewater treatment facility on at least a **monthly** basis. The inspection shall be conducted to determine if a discharge is occurring, has occurred since the previous inspection, and/or if a discharge is likely to occur before the next inspection. In addition, the inspection shall be performed to determine if proper operation and maintenance procedures are being undertaken at the wastewater treatment facility. Lift stations shall be inspected at least **weekly**. The permittee shall maintain a notebook recording information obtained during the inspection. At a minimum, the notebook shall include the following:

a. Date and time of the inspection;

b. Name of the inspectors;

c. The facility's discharge status;

d. The measured amount of freeboard in each cell and wetland at the outlet works;

e. Identification of operational problems and/or maintenance problems;

f. Recommendations, as appropriate, to remedy identified problems;

g. A brief description of any actions taken with regard to problems identified; and,

h. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the notebook available for inspection, upon request, by the Secretary or the U.S. Environmental Protection Agency.

2.0 MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

2.1 Representative Sampling

Samples taken in compliance with the monitoring requirements established under this general permit shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge.

2.2 Monitoring Procedures

Monitoring shall be conducted according to test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR, Part 136, unless other test procedures have been specified in this general permit.

2.3 Reporting of Monitoring Results

Monitoring results shall be summarized and reported on a photocopy of the Unauthorized Discharge Monitoring Summary Form located in Appendix B of this general permit, postmarked no later than the 28th day of the month following the discharge. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with **Section 2.4** and submitted to the Secretary and EPA at the following address:

original to: South Dakota Department of Environment and Natural Resources
Surface Water Quality Program
523 East Capitol Avenue
Pierre, South Dakota 57501-3181

copy to: US Environmental Protection Agency – Region VIII
Planning and Targeting Program (ENF-PT)
999 18th Street, Suite 300
Denver, Colorado 80202-2466

2.4 Signatory Requirements

All applications, reports or information submitted to the Secretary shall be signed and certified.

1. All Notice of Intent forms shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the general permit and other information requested by the Secretary shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described above and submitted to the Secretary; and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of superintendent or equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may be either a named individual or any individual occupying a named position.)

3. If an authorization under paragraph 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization shall be submitted to the Secretary.

4. Any person signing a document under this section shall make the following certification:

> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

2.5 Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this general permit, using test procedures approved under ARSD §74:52:03:06, a.b.r. 40 CFR 136 or as specified in this general permit, the results of this monitoring shall be used in determining compliance with this general permit.

2.6 Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The initials or names of the individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The time analyses was initiated;
5. The initials or names of individuals who performed the analyses;
6. References and written procedures, when available, for the analytical techniques or methods used; and,
7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7 Duty to Provide Information

The permittee shall furnish to the Secretary, within a reasonable time, any information the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this general permit, or to determine compliance with this general permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this general permit.

2.8 Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a Notice of Intent form, or submitted incorrect information in a Notice of Intent form or any report to the Secretary, it shall promptly submit such facts or information.

2.9 Planned Changes

The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutant discharged, or could result in noncompliance with permit conditions.

2.10 Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the application for this

general permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Secretary at any time. Data collected on site, copies of Unauthorized Discharge Monitoring Summary Form, a copy of this general permit, and the letter granting coverage under this general permit must be maintained on site during the duration of the permitted activity.

2.11 Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any emergency related to this general permit or permitted facility that may endanger health or the environment as soon as possible, but no later than 24 hours after becoming aware of the circumstances. The report shall be made to the Secretary at (605) 773-3351 during regular business hours (8:00 a.m. – 5:00 p.m. Central Time), or to South Dakota Emergency Management at (605) 773-3231 any other time.

2. Instances of noncompliance, unanticipated bypasses, sanitary sewer overflows, and unauthorized releases shall be reported to the Secretary at (605) 773-3351 by the first workday (8:00 a.m. - 5:00 p.m. Central Time) following the day the permittee became aware of the circumstances.

3. A written submission shall also be provided within five days of becoming aware of the circumstances above. The written submission shall contain:

   a. A description of the event and its cause;

   b. The period of the event, including exact dates and times;

   c. The estimated time the event is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the event.

4. The Secretary may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Surface Water Quality Program, South Dakota Department of Environment and Natural Resources, Pierre, (605) 773-3351.

5. Reports shall be submitted in accordance with Sections 2.3 and 2.4.

2.12 Permit Transfers

Coverage under this general permit may be transferred to a new permittee if:

1. The current permittee notifies the Secretary at least 30 days in advance of the proposed transfer date; and

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them.

The Secretary will notify the existing and new permittee of his or her intent to transfer, modify, or revoke and reissue the coverage under the general permit based on the information received and other permit information.

3.0 COMPLIANCE REQUIREMENTS

3.1 Duty to Comply

The permittee shall comply with all conditions of this general permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

3.2 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.

3.3 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and treatment and control systems (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this general permit or other conditions required by the Secretary upon granting coverage under this general permit. This may include the maintenance of freeboard levels of lagoons or holding ponds. Proper operation and maintenance may also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the general permit.

3.4 Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

3.5 Inspection and Entry

The permittee shall allow the Secretary or EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this general permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the South Dakota Water Pollution Control Act, any substances or parameters at any location.

3.6 Removed Substances

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard in accordance with applicable requirements of SDCL 34A-2, -6, and -11.

3.7 Emergency Releases and Bypasses

1. Emergency Release and Anticipated Bypass. Anticipated bypasses and emergency releases causing violation of effluent limits are prohibited, unless the Secretary approves the anticipated bypass or release after considering its adverse effects and determines that it will meet the following conditions:

   (a) The bypass or release was unavoidable to prevent loss of life, threat to public health, personal injury, or severe property damage;

   (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement or proper operation and maintenance to prevent a bypass or release that occurred during normal periods of equipment downtime or preventive maintenance; and,

(c) The permittee submitted notices as required under paragraph 3 of this section.

2. Anticipated Bypass Not Causing Violations. The permittee may allow anticipated bypasses to occur that do not cause effluent limit violations, but only if for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 1 and 3 of this section.

3. Notice of Emergency Release or Bypass:
   a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 10 days before the date of the bypass.
   b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Section 2.11.

3.8 Sanitary Sewer Overflows

1. Reporting. Overflows from the sanitary sewer collection system shall be reported to the Secretary at (605) 773-3351 as soon as possible, but no later than the first business day after becoming aware of the sanitary sewer overflow. Anticipated overflows shall be reported in advance, if possible. In addition to verbal notification, the permittee shall submit to the Secretary a written report in accordance with Section 2.11, paragraphs 3 and 4.

2. Sampling. Sanitary sewer overflows shall be sampled at the same or similar frequency and for the same parameters as required in Section 1.3. The results shall be included with the written report required in paragraph 1.

3. Plan Development. In the event that the Secretary notifies the permittee of the need to develop a capacity, management, operation, and maintenance program in order to address, reduce, or eliminate the frequency of sanitary sewer overflows, the permittee shall submit such a plan to the Secretary. The plan shall, at a minimum, address the following areas:

   a. Sewer management program: This program includes personnel organizational structure, training, communication information systems, noncompliance notification program, and other appropriate items;
   b. Collection system operation program: This program includes operational budgeting, monitoring, safety, emergency preparedness and response, pump stations, operational recordkeeping, and other appropriate items;
   c. Collection system maintenance program: This program includes maintenance budgeting, planned and unplanned maintenance; sewer cleaning; maintenance recordkeeping, parts and equipment inventory, and other appropriate items; and
   d. Sewer system capacity evaluation: The capacity evaluation includes the following:
      1. System inventory (sewer locations, sizes, slopes, materials, age, condition, etc.);
      2. Identification of problem areas (overflows, surcharged lines, basement backups, etc.);
      3. Capacity evaluation of problem areas (utilizing flow and precipitation records, infiltration and inflow investigation, manhole and pipe inspections and televising, smoke and dye testing, and building inspections); and
      4. Sewer rehabilitation recommendations.

Upon the Secretary's approval of the plan, the permittee shall implement the plan.

3.9 Industrial Wastes (for Publicly Owned Treatment Works Only)

1. Each significant industrial user shall be identified as to qualitative and quantitative characteristics of the discharge as well as production data. A significant industrial user is defined as an industrial user discharging to a publicly-owned treatment works (POTW) that satisfies any of the following:

   (a) has a process wastewater flow of 25,000 gallons or more per average work day;

   (b) has a flow or loading greater than five percent of the flow or load carried by the municipal system receiving the waste;

   (c) has in its waste a toxic pollutant in toxic amounts as defined under Section 307(a) of the Federal Clean Water Act, or is otherwise developed under Section 307(b) of the Federal Clean Water Act; or,

   (d) is found by the Secretary to have a significant impact on the POTW or the quality of its effluent.

2. The permittee shall notify the Secretary of any new introductions by new or existing significant industrial users or any substantial change in pollutants from any significant industrial user. Such notice must contain the information described in paragraph 1 above and be forwarded no later than 60 days following the introduction or change.

3. Pretreatment Standards [ARSD §74:52:11:01, a.b.r. 40 CFR 403.5] developed pursuant to Section 307 of the Federal Clean Water Act require that under no circumstances shall the permittee allow the introduction of the following pollutants to the POTW from any source of nondomestic discharge:

   (a) Pollutants that create a fire or explosion hazard in the POTW, including but not limited to, wastestreams with a closed cup flashpoint of less than 60 degrees Celsius (140 degrees Fahrenheit) using the test methods specified in ARSD §74:28:22:01, a.b.r. 40 CFR 261.21;

   (b) Pollutants that will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0 standard units nor greater than 12.5 standard units;

   (c) Solid or viscous pollutants in amounts that will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

   (d) Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW;

   (e) Heat in amounts that will inhibit biological activity in the POTW resulting in interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Celsius (104 degrees Fahrenheit);

   (f) Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   (g) Pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

   (h) Any trucked or hauled pollutants, except at discharge points designated by the POTW;

   (i) Any pollutant that causes pass through or interference; and,

   (j) In addition to the general limits expressed above, more specific pretreatment limits have been promulgated for specific industrial categories under Section 307 of the Federal Clean Water Act (see ARSD, Chapter 74:52:10, a.b.r. 40 CFR Subchapter N, Parts 405 through 471, for specific information).

4. The permittee shall provide adequate notice to the Secretary of any substantial change in the volume or character of pollutants being introduced into the POTW by an industrial user. For the purposes of this section, adequate notice shall include information on:

   (a) The quality and quantity of effluent to be introduced into the POTW; and,

   (b) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

5. The Secretary retains the right to take legal action against the industrial user and/or the permittee, in those cases where a permit violation has occurred because of the failure of an industrial user to discharge at an acceptable level.

3.10 Duty to Reapply

If the permittee wishes to continue an activity regulated by this general permit after its expiration date, the permittee must apply for and obtain coverage under a new general permit. The Notice of Intent must be submitted at least 180 days before the expiration date of this general permit. If the permittee wishes to apply for an individual permit, the application must also be submitted at least 180 days before the expiration date of this general permit. Periodically during the term of this general permit and at the time of reissuance, the permittee may be requested to reaffirm its eligibility for coverage under this general permit.

3.11 Availability of Reports

Except for data determined to be confidential under ARSD §74:52:02:17, all reports prepared in accordance with the terms of this general permit shall be available for public inspection at the office of SDDENR. Permit applications, notices of intent, permits, and effluent data shall not be considered confidential.

3.12 Property Rights

The Secretary's issuance of this permit, adoption of design criteria, and approval of plans and specifications, does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant that the permittee's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The permittee is solely and severably liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal, state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

3.13 Severability

The provisions of this general permit are severable, and if any provision of this general permit, or the application of any provision of this general permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this general permit, shall not be affected thereby.

3.14 Reopener Provision

This general permit may be reopened and modified (following proper administrative procedures) to include appropriate effluent limits (and compliance schedules, if necessary), or other appropriate requirements if one or more of the following events occurs:

1. Water Quality Standards: The water quality standards of the receiving waters applicable to this general permit are modified in such a manner as to require different conditions than contained in this general permit.

2. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted that calls for different conditions than contained in this general permit.

3. Effluent Guidelines: Effluent limit guidelines are promulgated or revised for point sources covered by this general permit;

4. Total Maximum Daily Load: Additional controls in the permit are necessary to implement a total maximum daily load approved by the Secretary and/or EPA.

5. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the permit; or

6. Other Changes: Other conditions or standards change so that the permittee no longer qualifies for this permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items.

3.15 Requiring an Individual Permit

The Secretary may require any permittee covered under this general permit to apply for and obtain an individual permit if any of the following occur:

1. Noncompliance: The discharger is a significant contributor of pollution to waters of the state, presents a health hazard, or is in noncompliance with the conditions of the general permit; or

2. Other Changes: Other conditions or standards change so that the permittee no longer qualifies for this general permit, such as the permittee being designated as a major discharger, changes in necessary influent or effluent pollutant monitoring, additional industrial pretreatment requirements become applicable to the permittee, or other items that would necessitate an individual permit.

The Secretary will notify the permittee in writing that an application for an individual permit is required. When an individual permit is issued to a permittee otherwise covered under this general permit, the permittee's general permit coverage shall be automatically terminated upon the effective date of the individual permit.

3.16 Permit Actions

This general permit may be modified, revoked and reissued, or terminated for cause, including failure to comply with any provision of this general permit or any condition imposed by the Secretary upon granting coverage under this general permit. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4.0 PENALTIES FOR NONCOMPLIANCE

4.1 Penalties for Violations of Permit Conditions

Any person who violates a permit condition is in violation of the provisions of SDCL 34A-2-36, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state. Except as provided in Section 3.6, nothing in this general permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

4.2 Penalties for Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this general permit is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.3 Penalties for Falsification of Reports

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this general permit, including monitoring reports or reports of compliance or noncompliance, is in violation of the provisions of SDCL 34A-2-77, and is subject to penalties under SDCL 34A-2-75. In addition to a jail sentence authorized by SDCL 22-6-2, such violators are subject to a criminal fine not to exceed ten thousand dollars per day of violation. The violator is also subject to a civil penalty not to exceed ten thousand dollars per day of violation, or for damages to the environment of this state.

4.4 Oil and Hazardous Substance Liability

Nothing in this general permit shall be construed to preclude SDDENR from taking any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act.

APPENDIX A

Notice of Intent to Receive Coverage Under the General Surface Water Discharge Permit for Minor Non-Discharging Publicly Owned Treatment Works

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

South Dakota Surface Water Discharge Program
Application for Permit to Discharge Wastewater

APPENDIX A - PUBLICLY OWNED TREATMENT WORKS

1. List the name and actual (or, if unavailable, estimated) population for each municipality, quasi-municipality, or unincorporated area served by this treatment facility: _____
Also, list the population equivalent, if known: _____

2. Provide the following plant Design and Treatment Data:
A. Average design flow (MGD): _____
B. Peak design flow (MGD): _____
C. Average design organic treatment capacity: _____
D. Peak design organic treatment capacity: _____

3. Indicate the type of sewer collection system.
☐ A. Combined sanitary/storm sewer
☐ B. Both separate and combined sewer
☐ C. Separate sanitary/storm sewer
☐ D. Other (please specify): _____

4. If you checked "A" in question 3, during storm events is the increased flow:
☐ A. Bypassed to receiving stream with no treatment
☐ B. Given partial treatment and discharged
☐ C. Given complete treatment and discharged
☐ D. Stored for later treatment

5. Does this treatment facility receive industrial wastes?
☐ Yes
☐ No
If yes, list each significant Industrial User of the sewer system which meets any of the following criteria: Subject to National Categorical Pretreatment Standards; Discharges 25,000 gallons per day or more of process wastewater; Contributes process wastewater which makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or has a reasonable potential to adversely affect the POTW treatment plant. Attach additional sheets if necessary.
_____
_____
_____

What percentage of the total flow to the wastewater facility can be attributed to non-domestic industrial sources? _____% of total flow

6. **Are industrial discharges to the system controlled by ordinance?**
   - ☐ Yes
   - ☐ No

7. **Does the City currently have an approved Pretreatment Program approved under 40 CFR 403?**
   - ☐ Yes (See Note below)
   - ☐ No
   - ☐ Pretreatment Program is being developed

   NOTE: If the City has an approved Pretreatment Program, has the City evaluated the need to update their local limits?
   - ☐ Yes. When (attach any documentation) _____
   - ☐ No

   Will it be necessary to revise the City's local limits?
   - ☐ Yes
   - ☐ No

8. **Does the plant receive trucked-in waste?**
   - ☐ Yes
   - ☐ No

   If yes, describe wastes received, allowable discharge point(s), and if waste is subject to any other local, state, or federal regulations:

   _____

   _____

9. **Does your discharge contain or is it possible for your discharge to contain one or more of the following substances: ammonia, cyanide, aluminum, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols?**
   - ☐ Yes, circle the substances which apply.
   - ☐ No

10. **List all instances, over the last three years, of pollutant "pass-through" of the treatment system into the environment without adequate treatment or of "interference" with the operation of the treatment facilities. Give a brief description of why each "pass-through" or "interference" incident occurred.**

   _____

   _____

   _____

   _____

11. Indicate any discharge sample analyses which are routinely performed by a contract laboratory or consulting firm. For each pollutant for which such analysis is performed, list the name, address, and telephone number of each such laboratory or firm.

_____

_____

_____

_____

12. Indicate any operational or maintenance aspects of your facility for which a contractor is responsible. Supply the name, address, and telephone number of the contractor and describe the contractor's responsibilities.

_____

_____

_____

_____

13. Has this facility been classified as a "Major"?

☐ Yes, attach a copy of a Whole Effluent Toxicity (WET) Test.

☐ No

APPENDIX B

Unauthorized Discharge Monitoring Summary Form

UNAUTHORIZED DISCHARGE MONITORING SUMMARY FORM

This form is to be used to summarize effluent monitoring information for discharges from facilities covered under the General Surface Water Discharge Permit for Minor Non-Discharging Domestic Wastewater Treatment Facilities.

Permittee Name: _____

Permit No.: _____

Address: _____

Facility Contact: _____ Phone: _____

Describe the events leading to the discharge, and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance (use attachment if insufficient space):

_____

_____

_____

_____

Time and Date 24-Hour Notice of Noncompliance given to SDDENR: _____

Describe any adverse effects, such as fish kills, etc.: _____

Duration of discharge (include dates and times): _____

Total flow, million gallons: _____

ANALYTICAL RESULTS

Parameter	Sample 1	Sample 2	Sample 3	Sample 4
Date and time of sample				
Flow Rate, million gallons per day				
pH, standard units				
Water Temperature, °C				
Total Residual Chlorine, mg/L (if chlorinating)				
Fecal Coliform, no./100 mL				
Total Coliform, no./100 mL				
Ammonia as N, mg/L				
Total Suspended Solids, mg/L				
BOD_5, mg/L				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print): _____ Title: _____

Signature: _____ Date: _____

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Minor No Discharge General Permit Worksheet

Application Date: *July 29, 2005* Evaluation Date: *May 16, 2006*

I. Facility Information

Permittee Name: *Town of Yale*	Permit Number: *SDG822071* Old Permit Number: *SD0022071*
Does the permittee treat primarily domestic wastewater? ☒ *Yes* ☐ *No*	Number of Outfalls: *1*
Receiving Stream: *Unnamed tributary* then Cavour Lake	Receiving Stream Uses: *9, 10*
Other downstream waterbodies/uses/distances:	*Any discharge from this facility will flow overland about ½ mile to an unnamed tributary of Cavour Lake. The unnamed tributary flows 2 miles to Cavour Lake, which is classified for the following beneficial uses: 6, 7, 8, 9*

Facility Location Latitude: *44° 26' 06.8"* Longitude: *97° 58' 59.1"* GPS: ☒ *Yes* ☐ *No*

Section (Including ¼): *Southeast ¼ of the northwest ¼ of Section 12* Township: *111 North* Range: *60 West*

Outfall 001 Information: Latitude: *44° 26' 06.8"* Longitude: *97° 58' 59.1"*

Description: GPS: ☒ *Yes* ☐ *No*

Attach additional sheets for Outfall Descriptions if necessary

File Review (Check when completed):	☒ *Yes* ☐ *No* Has the facility discharged in the past five years? If yes, explain the circumstances and attach a summary of the monitoring data. ***The facility had unauthorized release in November and December 2004, due to excess precipitation and cool temperatures in the summer. The discharged last 4 days and the town collected samples***
	☒ Inspection Report Review - Date Inspected: ***June 7, 2005*** ☒ Enforcement History Review

Description of Wastestream and Treatment Process:

The town of Yale operates a wastewater treatment facility located on the east edge of town in Beadle County. The wastewater treatment facility serves a population of 118 (2000 Census), with no known industrial contributions. The facility consists of a lift station and a two-acre, bi-level stabilization pond. The facility began operation in 1957.

Comments:

The last inspection noted operation and maintenance issues and record-keeping violations.

II. Permit Issuance Information

Does the permittee's treatment system have capacity for total retention? (attach analysis if available)	☒ *Yes* ☐ *No*	Is the permittee eligible for coverage?	☒ *Yes* ☐ *No*

Comments:

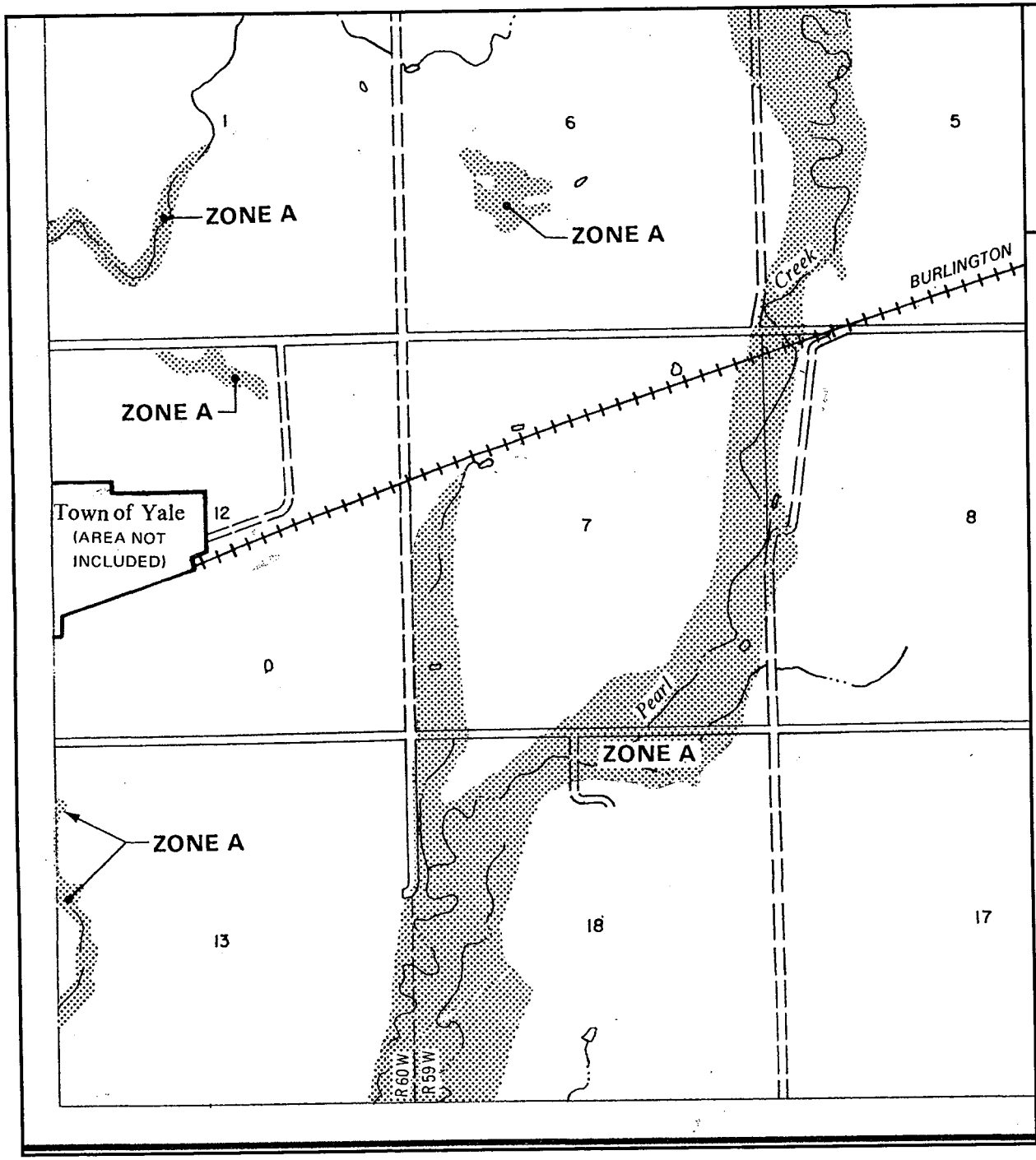
Coverage under the General No Discharge Permit for Minor Facilities will be granted.

Reviewer's Name: Kelli D. Buscher, P.E. Title: Natural Resources Engineering Director

Reviewer's Signature: Kelli Buscher Date: May 16, 2006

Appendix B

FEMA Firmette, and NWI Map



APPROXIMATE SCALE IN FEET

2000 0 2000

FLOOD HAZARD BOUNDARY MAP

BEADLE COUNTY, SOUTH DAKOTA

UNINCORPORATED AREA

PAGE 8 OF 16

(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE DATE:
JANUARY 10, 1978

CONVERTED BY LETTER
EFFECTIVE 10/1/97

COMMUNITY-PANEL NO.

460251 0008 A

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

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Designing Projects, Building Trust

CONSULTANTS:

PROJECT TITLE:

PROJECT LOCATION:
YALE
SOUTH DAKOTA

REV.	DATE	DESCRIPTION

DRAWN BY: JLU
DESIGNED BY: JM
CHECKED BY: JM
JOB NO.: 20917.00.00
DATE: FEB. 2009

0 1/2" 1"
SCALE REDUCTION BAR

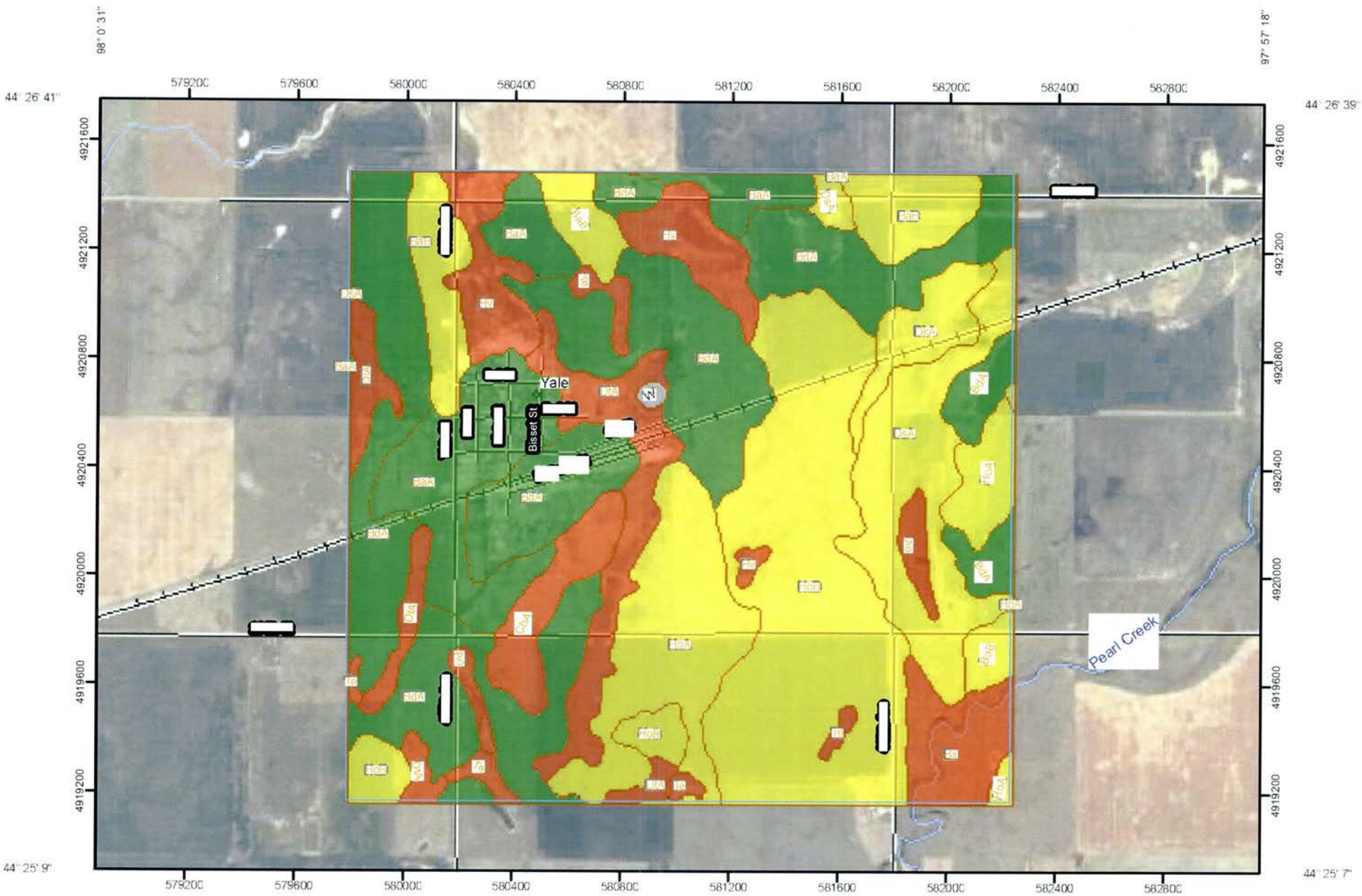
SHEET TITLE:

NWI
WETLAND
MAP

FIGURE NO.:
APPENDIX B

Appendix C

USDA Soil Survey Map and Soil Descriptions



Map Scale: 1:20,300 if printed on A size (8.5" x 11") sheet.

Meters: 0, 250, 500, 1,000, 1,500

Feet: 0, 1,000, 2,000, 4,000, 6,000

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Soil Ratings

Very limited

Somewhat limited

Not limited

Not rated or not available

Political Features

Cities

Water Features

Oceans

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

MAP INFORMATION

Map Scale: 1:20,300 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Beadle County, South Dakota
Survey Area Data: Version 12, Oct 15, 2008

Date(s) aerial images were photographed: 7/13/2004

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Suitabilities and Limitations for Use

Suitabilities and Limitations for Use— Summary by Map Unit — Beadle County, South Dakota						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Ao	Worthing silt loam, ponded	Very limited	Worthing (100%)	Ponding (1.00)	14.7	1.0%
				Depth to saturated zone (1.00)		
BaA	Beadle loam, 0 to 2 percent slopes	Not limited	Beadle (85%)		122.6	8.7%
			Jerauld (3%)			
BaB	Beadle loam, 2 to 6 percent slopes	Somewhat limited	Beadle (85%)	Slope (0.32)	93.5	6.7%
			Dudley (4%)	Depth to saturated zone (0.40)		
			Stickney (4%)	Depth to saturated zone (0.40)		
BdA	Beadle-Dudley complex, 0 to 2 percent slopes	Not limited	Beadle (55%)		396.3	28.3%
			Jerauld (5%)			
Bx	Bon silt loam, channeled	Very limited	Bon, channeled (90%)	Flooding (1.00)	38.8	2.8%
				Seepage (1.00)		
				Depth to saturated zone (0.71)		
			Egas (9%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
			Durrstein (1%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
CbA	Carthage-Blendon fine sandy loams, 0 to 2 percent slopes	Very limited	Carthage (50%)	Seepage (1.00)	34.8	2.5%
			Blendon (35%)	Seepage (1.00)		
			Elsmere (5%)	Seepage (1.00)		
				Depth to saturated zone (0.75)		
			Forestburg (5%)	Seepage (1.00)		
			Loup (4%)	Seepage (1.00)		
				Depth to saturated zone (1.00)		
				Flooding (0.40)		
			Shue (1%)	Seepage (1.00)		
				Depth to saturated zone (0.75)		
				Flooding (0.40)		

Suitabilities and Limitations for Use— Summary by Map Unit — Beadle County, South Dakota						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
DkA	Dudley-Jerauld silt loams, 0 to 3 percent slopes	Somewhat limited	Dudley (50%)	Depth to saturated zone (0.40)	28.9	2.1%
			Davison (5%)	Seepage (0.50)		
				Depth to saturated zone (0.04)		
DsA	Dudley-Stickney silt loams, 0 to 3 percent slopes	Somewhat limited	Dudley (45%)	Depth to saturated zone (0.40)	104.1	7.4%
			Stickney (35%)	Depth to saturated zone (0.40)		
			Davison (5%)	Seepage (0.50)		
				Depth to saturated zone (0.04)		
DtA	Dudley-Tetonka silt loams	Very limited	Dudley (55%)	Flooding (1.00)	98.5	7.0%
				Depth to saturated zone (1.00)		
			Tetonka (20%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Seepage (0.50)		
			Hoven (6%)	Depth to saturated zone (1.00)		
				Ponding (1.00)		
HoA	Houdek-Prosper loams, 0 to 2 percent slopes	Somewhat limited	Houdek (50%)	Seepage (0.50)	127.4	9.1%
			Prosper (35%)	Seepage (0.50)		
			Dudley (3%)	Depth to saturated zone (0.40)		
			Davison (3%)	Seepage (0.50)		
				Depth to saturated zone (0.04)		
			Stickney (3%)	Depth to saturated zone (0.40)		
HoB	Houdek-Prosper loams, 2 to 6 percent slopes	Somewhat limited	Houdek (55%)	Seepage (0.50)	253.9	18.1%
				Slope (0.32)		
			Prosper (30%)	Seepage (0.50)		
				Slope (0.32)		
			Dudley (3%)	Depth to saturated zone (0.40)		
			Davison (3%)	Seepage (0.50)		
				Depth to saturated zone (0.04)		
			Stickney (3%)	Depth to saturated zone (0.40)		

Suitabilities and Limitations for Use— Summary by Map Unit — Beadle County, South Dakota						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Hv	Hoven silt loam	Very limited	Hoven (90%)	Depth to saturated zone (1.00)	67.9	4.8%
				Ponding (1.00)		
			Tetonka (10%)	Ponding (1.00)		
				Depth to saturated zone (1.00)		
				Seepage (0.50)		
Te	Tetonka-Hoven silt loams	Very limited	Tetonka (75%)	Ponding (1.00)	18.9	1.3%
				Depth to saturated zone (1.00)		
				Seepage (0.50)		
			Hoven (20%)	Depth to saturated zone (1.00)		
				Ponding (1.00)		
W	Water	Not rated	Water (100%)		2.0	0.1%
Totals for Area of Interest					**1,402.3**	**100.0%**

Suitabilities and Limitations for Use— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
Somewhat limited	607.8	43.3%
Not limited	519.0	37.0%
Very limited	273.6	19.5%
Null or Not Rated	2.0	0.1%
Totals for Area of Interest	**1,402.3**	**100.0%**

Description

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Ksat is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Appendix D

Yale WWTF Existing Flows

Lift Station Inspection Log
Year 2002

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2001							
2/2/02	3,864.0	4,356.0			266,871	33	8,087
2/23/02	3,877.0	4,368.0	13.0	12.0	169,818	21	8,087
3/11/02	3,889.0	4,377.0	12.0	9.0	141,552	16	8,847
4/4/02	3,906.0	4,392.0	17.0	15.0	217,002	24	9,042
4/16/02	3,914.0	4,399.0	8.0	7.0	101,688	12	8,474
5/14/02	3,935.0	4,416.0	21.0	17.0	256,866	28	9,174
6/1/02	3,949.0	4,428.0	14.0	12.0	176,124	18	9,785
6/2/02	3,950.0	4,429.0	1.0	1.0	13,626	1	13,626
6/15/02	3,958.0	4,436.0	8.0	7.0	101,688	13	7,823
7/12/02	4,042.0	4,518.0	84.0	82.0	1,129,944	27	41,850
7/13/02	4,044.0	4,520.0	2.0	2.0	27,252	1	27,252
7/15/02	4,046.0	4,521.0	2.0	1.0	19,932	2	9,966
7/22/02	4,050.0	4,525.0	4.0	4.0	54,504	7	7,787
8/7/02	4,059.0	4,533.0	9.0	8.0	115,314	16	7,208
9/3/02	4,076.0	4,548.0	17.0	15.0	217,002	27	8,038
10/1/02	4,094.0	4,563.0	18.0	15.0	223,308	28	7,976
11/2/02	4,113.0	4,580.0	19.0	17.0	244,254	32	7,633
12/7/02	4,133.0	4,597.0	20.0	17.0	250,560	35	7,159
12/13/02	4,137.0	4,600.0	4.0	3.0	47,184	6	7,864
12/31/02	4,147.9	4,610.2	10.9	10.2	143,918	18	7,996
TOTAL	---	---	**283.9**	**254.2**	**3,918,407**	**365**	---
Average Day							**10,735**
Peak Day							**41,850**
Peaking Factor							**3.9**
Minimum Day							**7,159**

Lift Station Inspection Log
Year 2003

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/02	4,147.9	4,610.2					
2/2/2003	4,168.0	4,629.0	20.1	18.8	263,849	33	7,996
2/12/2003	4,174.0	4,634.0	6.0	5.0	74,436	10	7,444
2/15/2003	4,176.0	4,634.0	2.0	0.0	12,612	3	4,204
2/20/2003	4,179.0	4,638.0	3.0	4.0	48,198	5	9,640
2/28/2003	4,183.0	4,643.0	4.0	5.0	61,824	8	7,728
3/17/2003	4,196.0	4,655.0	13.0	12.0	169,818	17	9,990
4/1/2003	4,210.0	4,668.0	14.0	13.0	183,444	15	12,230
4/10/2003	4,215.0	4,673.0	5.0	5.0	68,130	9	7,570
4/21/2003	4,223.0	4,681.0	8.0	8.0	109,008	11	9,910
4/26/2003	4,227.0	4,685.0	4.0	4.0	54,504	5	10,901
5/19/2003	4,247.0	4,708.0	20.0	23.0	294,480	23	12,804
5/28/2003	4,254.0	4,715.0	7.0	7.0	95,382	9	10,598
6/8/2003	4,262.0	4,726.0	8.0	11.0	130,968	11	11,907
6/24/2003	4,275.0	4,737.0	13.0	11.0	162,498	16	10,157
6/25/2003	4,280.0	4,742.0	5.0	5.0	68,130	1	68,130
7/13/2003	4,296.0	4,757.0	16.0	15.0	210,696	18	11,706
7/14/2003	4,298.0	4,759.0	2.0	2.0	27,252	1	27,252
7/31/2003	4,306.0	4,768.0	8.0	9.0	116,328	17	6,843
8/18/2003	4,318.0	4,780.0	12.0	12.0	163,512	18	9,084
9/4/2003	4,328.0	4,789.0	10.0	9.0	128,940	17	7,585
9/13/2003	4,333.0	4,793.0	5.0	4.0	60,810	9	6,757
9/17/2003	4,336.0	4,793.0	3.0	0.0	18,918	4	4,730
9/22/2003	4,339.0	4,799.0	3.0	6.0	62,838	5	12,568
9/24/2003	4,340.0	4,800.0	1.0	1.0	13,626	2	6,813
9/25/2003	4,341.0	4,801.0	1.0	1.0	13,626	1	13,626
10/6/2003	4,349.0	4,808.0	8.0	7.0	101,688	11	9,245
10/14/2003	4,354.0	4,813.0	5.0	5.0	68,130	8	8,517
10/25/2003	4,360.0	4,819.0	6.0	6.0	81,756	11	7,433
11/1/2003	4,364.0	4,823.0	4.0	4.0	54,504	7	7,787
12/3/2003	4,383.0	4,842.0	19.0	19.0	258,894	32	8,091
12/30/2003	4,399.0	4,867.0	16.0	25.0	283,896	27	10,515
12/31/2003	4,399.7	4,868.4	0.7	1.4	14,778	1	14,778
TOTAL	---	---	**251.1**	**256.8**	**3,477,473**	**365**	---
Average Day							**9,527**
Peak Day							**27,252**
Peaking Facor							**2.9**
Minimum Day							**4,204**

Lift Station Inspection Log
Year 2004

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2003	4,399.7	4,868.4					
1/17/2004	4,411.0	4,893.0	11.3	24.6	251,215	17	14,778
1/27/2004	4,418.0	4,899.0	7.0	6.0	88,062	10	8,807
2/16/2004	4,436.0	4,914.0	18.0	15.0	223,308	20	11,166
3/4/2004	4,450.0	4,926.0	14.0	12.0	176,124	17	10,361
3/21/2004	4,463.0	4,936.0	13.0	10.0	155,178	17	9,129
3/27/2004	4,472.0	4,945.0	9.0	9.0	122,634	6	20,439
4/4/2004	4,480.0	4,951.0	8.0	6.0	94,368	8	11,796
4/13/2004	4,488.0	4,957.0	8.0	6.0	94,368	9	10,486
4/25/2004	4,505.0	4,985.0	17.0	28.0	312,162	12	26,014
4/26/2004	4,505.8	4,986.0	0.8	1.0	12,365	1	12,365
4/27/2004	4,506.8	4,986.8	1.0	0.8	12,163	1	12,163
4/28/2004	4,507.6	4,987.4	0.8	0.6	9,437	1	9,437
5/2/2004	4,511.3	4,990.4	3.7	3.0	45,293	4	11,324
5/7/2004	4,516.2	4,994.4	4.9	4.0	60,180	5	12,036
5/12/2004	4,523.1	4,997.9	6.9	3.5	69,132	5	13,827
5/16/2004	4,527.1	5,000.9	4.0	3.0	47,184	4	11,796
8/4/2004	4,557.4	5,162.4	30.3	161.5	1,373,252	80	17,166
8/7/2004	4,560.9	5,164.7	3.5	2.3	38,908	3	12,970
8/10/2004	4,565.7	5,167.6	4.8	2.9	51,497	3	17,166
8/15/2004	4,571.6	5,171.1	5.9	3.5	62,826	5	12,566
8/24/2004	4,589.7	5,183.0	18.1	11.9	201,247	9	22,361
9/2/2004	4,600.3	5,189.9	10.6	6.9	117,352	9	13,040
9/10/2004	4,652.3	5,198.8	52.0	8.9	393,061	8	49,133
9/16/2004	4,714.2	5,209.3	61.9	10.5	467,202	6	77,867
9/21/2004	4,759.4	5,215.9	45.2	6.6	333,344	5	66,669
9/27/2004	4,761.9	5,229.1	2.5	13.2	112,390	6	18,732
9/29/2004	4,762.2	5,235.0	0.3	5.9	45,080	2	22,540
10/12/2004	4,779.2	5,249.3	17.0	14.3	211,879	13	16,299
10/18/2004	4,785.4	5,254.5	6.2	5.2	77,162	6	12,861
10/23/2004	4,793.9	5,261.4	8.5	6.9	104,109	5	20,822
11/14/2004	4,843.3	5,304.4	49.4	43.0	626,277	22	28,468
11/29/2004	4,927.0	5,352.0	83.7	47.6	876,245	15	58,417
12/31/2004	4,939.1	5,362.7	12.1	10.7	154,313	32	4,823
TOTAL	---	---	**539.4**	**494.2**	**7,019,317.0**	**366**	---
Average Day							**19,178**
Peak Day							**77,867**
Peaking Factor							**4.1**
Minimum Day							**4,823**

Lift Station Inspection Log
Year 2005

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2004	4,939.1	5,362.7					
1/13/2005	4,944.0	5,367.0	4.9	4.3	62,690	13	4,823
2/2/2005	4,964.0	5,385.0	20.0	18.0	257,880	20	12,894
2/16/2005	4,981.0	5,411.0	17.0	26.0	297,522	14	21,252
2/26/2005	4,992.0	5,430.0	11.0	19.0	208,446	10	20,845
3/6/2005	5,001.0	5,445.0	9.0	15.0	166,554	8	20,820
3/12/2005	5,006.0	5,454.0	5.0	9.0	97,410	6	16,235
3/15/2005	5,009.0	5,459.0	3.0	5.0	55,518	3	18,506
4/9/2005	5,034.0	5,480.0	25.0	21.0	311,370	25	12,455
4/15/2005	5,040.0	5,485.0	6.0	5.0	74,436	6	12,406
4/28/2005	5,055.0	5,494.0	15.0	9.0	160,470	13	12,344
5/15/2005	5,072.0	5,507.0	17.0	13.0	202,362	17	11,904
5/28/2005	5,084.0	5,518.0	12.0	11.0	156,192	13	12,015
6/11/2005	5,101.0	5,530.0	17.0	12.0	195,042	14	13,932
6/13/2005	5,108.0	5,535.0	7.0	5.0	80,742	2	40,371
6/22/2005	5,126.0	5,547.0	18.0	12.0	201,348	9	22,372
7/17/2005	5,154.0	5,568.0	28.0	21.0	330,288	25	13,212
7/20/2005	5,160.0	5,573.0	6.0	5.0	74,436	3	24,812
7/25/2005	5,165.0	5,577.0	5.0	4.0	60,810	5	12,162
8/4/2005	5,195.0	5,585.0	30.0	8.0	247,740	10	24,774
8/8/2005	5,199.0	5,588.0	4.0	3.0	47,184	4	11,796
9/6/2005	5,226.0	5,609.0	27.0	21.0	323,982	29	11,172
9/12/2005	5,234.0	5,614.0	8.0	5.0	87,048	6	14,508
9/20/2005	5,250.0	5,627.0	16.0	13.0	196,056	8	24,507
10/10/2005	5,275.0	5,649.0	25.0	22.0	318,690	20	15,935
10/17/2005	5,282.0	5,655.0	7.0	6.0	88,062	7	12,581
10/29/2005	5,293.0	5,665.0	11.0	10.0	142,566	12	11,881
11/14/2005	5,307.0	5,676.0	14.0	11.0	168,804	16	10,551
11/26/2005	5,315.0	5,683.0	8.0	7.0	101,688	12	8,474
12/29/2005	5,339.0	5,702.0	24.0	19.0	290,424	33	8,801
12/31/2005	5,340.9	5,703.6	1.9	1.6	23,298	2	11,649
TOTAL	---	---	**401.8**	**340.9**	**5,029,058**	**365**	---
Average Day							**13,778**
Peak Day							**40,371**
Peaking Factor							**2.9**
Minimum Day							**4,823**

Lift Station Inspection Log
Year 2006

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2005	5,338.1	5,700.8					
1/29/2006	5,371.0	5,729.0	32.9	28.2	413,783	29	14,269
2/12/2006	5,393.0	5,811.0	22.0	82.0	738,972	14	52,784
3/5/2006	5,416.0	5,830.0	23.0	19.0	284,118	21	13,530
3/20/2006	5,431.0	5,847.0	15.0	17.0	219,030	15	14,602
4/3/2006	5,460.0	5,866.0	29.0	19.0	321,954	14	22,997
4/14/2006	5,480.0	5,883.0	20.0	17.0	250,560	11	22,779
4/20/2006	5,490.0	5,891.0	10.0	8.0	121,620	6	20,270
4/24/2006	5,498.0	5,898.0	8.0	7.0	101,688	4	25,422
4/29/2006	5,505.0	5,903.0	7.0	5.0	80,742	5	16,149
5/14/2006	5,525.0	5,920.0	20.0	17.0	250,560	15	16,704
5/17/2006	5,529.0	5,924.0	4.0	4.0	54,504	3	18,168
6/4/2006	5,549.0	5,939.0	20.0	15.0	235,920	18	13,107
6/15/2006	5,576.0	5,951.0	27.0	12.0	258,102	11	23,464
6/20/2006	5,580.0	5,954.0	4.0	3.0	47,184	5	9,437
6/30/2006	5,588.0	5,961.0	8.0	7.0	101,688	10	10,169
7/14/2006	5,599.0	5,970.0	11.0	9.0	135,246	14	9,661
7/26/2006	5,607.0	5,977.0	8.0	7.0	101,688	12	8,474
8/3/2006	5,612.0	5,981.0	5.0	4.0	60,810	8	7,602
8/10/2006	5,616.0	5,985.0	4.0	4.0	54,504	7	7,787
9/12/2006	5,643.0	6,009.0	27.0	24.0	345,942	33	10,484
9/28/2006	5,661.0	6,026.0	18.0	17.0	237,948	16	14,872
10/14/2006	5,675.0	6,039.0	14.0	13.0	183,444	16	11,466
10/29/2006	5,687.0	6,050.0	12.0	11.0	156,192	15	10,413
12/31/2006	5,730.6	6,088.8	43.6	38.8	558,830	63	8,871
TOTAL	---	---	**392.5**	**387.9**	**5,315,029.0**	**365**	---
Average Day							**14,562**
Peak Day							**52,784**
Peaking Factor							**3.6**
Minimum Day							**7,602**

* Interpolated Values in Blue Text

Lift Station Inspection Log
Year 2007

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2006	5,730.6	6,088.8					
2/3/2007	5,753.0	6,109.0	22.4	20.2	289,247	34	8,508
3/19/2007	5,784.0	6,137.0	31.0	28.0	400,446	44	9,102
4/1/2007	5,805.0	6,156.0	21.0	19.0	271,506	13	20,886
4/13/2007	5,833.0	6,181.0	28.0	25.0	359,568	12	29,964
4/23/2007	5,861.0	6,215.0	28.0	34.0	425,448	10	42,545
5/10/2007	5,923.0	6,281.0	62.0	66.0	874,092	17	51,418
5/21/2007	5,939.0	6,298.0	16.0	17.0	225,336	11	20,486
5/24/2007	5,943.0	6,303.0	4.0	5.0	61,824	3	20,608
6/10/2007	5,967.0	6,341.0	24.0	38.0	429,504	17	25,265
6/19/2007	6,005.0	6,378.0	38.0	37.0	510,468	9	56,719
6/28/2007	6,020.0	6,396.0	15.0	18.0	226,350	9	25,150
7/13/2007	6,034.0	6,416.0	14.0	20.0	234,684	15	15,646
8/5/2007	6,054.0	6,460.0	20.0	44.0	448,200	23	19,487
8/22/2007	6,071.0	6,489.0	17.0	29.0	319,482	17	18,794
9/7/2007	6,086.0	6,511.0	15.0	22.0	255,630	16	15,977
9/14/2007	6,092.0	6,523.0	6.0	12.0	125,676	7	17,954
10/4/2007	6,109.0	6,547.0	17.0	24.0	282,882	20	14,145
10/20/2007	6,127.0	6,583.0	18.0	36.0	377,028	16	23,565
11/5/2007	6,147.0	6,619.0	20.0	36.0	389,640	16	24,353
12/21/2007	6,192.0	6,717.0	45.0	98.0	1,001,130	46	21,764
12/31/2007	6,202.7	6,732.5	10.7	15.5	180,621	10	18,063
TOTAL	---	---	**472.1**	**643.7**	**7,688,762.0**	**365**	---
Average Day (gpd)							**21,065**
Peak Day (gpd)							**56,719**
Peaking Factor							**2.7**
Minimum Day (gpd)							**8,508**

Lift Station Inspection Log
Year 2008

Location: Main Lift
Pump Capacity (gpm): **Pump 1 (South) =** 105.1 **Pump 2 (North) =** 122
Date of most recent pump calibration: February 18th, 2009

Date	Meter Reading Pump 1	Meter Reading Pump 2	Pump 1 Run Time (hrs.)	Pump 2 Run Time (hrs.)	Flow Volume (Gallons)	Time between Meter Readings (days)	Flow Rate (Gallons per Day)
12/31/2007	6,202.7	6,732.5					
1/6/2008	6,206.0	6,739.0	3.3	6.5	68,704	6	11,451
1/23/2008	6,220.0	6,761.0	14.0	22.0	249,324	17	14,667
2/6/2008	6,232.0	6,779.0	12.0	18.0	207,432	14	14,817
3/16/2008	6,259.0	6,804.0	27.0	25.0	353,262	39	9,058
3/29/2008	6,268.0	6,811.0	9.0	7.0	107,994	13	8,308
4/3/2008	6,272.0	6,814.0	4.0	3.0	47,184	5	9,437
4/23/2008	6,290.0	6,829.0	18.0	15.0	223,308	20	11,166
5/3/2008	6,305.0	6,841.0	15.0	12.0	182,430	10	18,243
5/11/2008	6,319.0	6,852.0	14.0	11.0	168,804	8	21,101
5/17/2008	6,331.0	6,862.0	12.0	10.0	148,872	6	24,812
5/30/2008	6,344.0	6,877.0	13.0	15.0	191,778	13	14,753
6/13/2008	6,368.0	6,899.0	24.0	22.0	312,384	14	22,314
6/26/2008	6,398.0	6,956.0	30.0	57.0	606,420	13	46,648
7/8/2008	6,413.0	6,996.0	15.0	40.0	387,390	12	32,283
7/20/2008	6,422.0	7,004.0	9.0	8.0	115,314	12	9,610
7/29/2008	6,429.0	7,010.0	7.0	6.0	88,062	9	9,785
8/5/2008	6,435.0	7,016.0	6.0	6.0	81,756	7	11,680
8/19/2008	6,447.0	7,026.0	12.0	10.0	148,872	14	10,634
9/7/2008	6,470.0	7,212.0	23.0	186.0	1,506,558	19	79,293
9/21/2008	6,480.0	7,222.0	10.0	10.0	136,260	14	9,733
10/13/2008	6,498.0	7,238.0	18.0	16.0	230,628	22	10,484
11/2/2008	6,529.0	7,269.0	31.0	31.0	422,406	20	21,121
11/5/2008	6,534.0	7,273.0	5.0	4.0	60,810	3	20,270
11/16/2008	6,558.0	7,298.0	24.0	25.0	334,344	11	30,395
11/30/2008	6,571.0	7,310.0	13.0	12.0	169,818	14	12,130
12/9/2008	6,581.0	7,319.0	10.0	9.0	128,940	9	14,327
12/30/2008	6,600.0	7,335.0	19.0	16.0	236,934	21	11,283
12/31/2008	6,600.9	7,335.8	0.9	0.8	11,595	1	11,595
TOTAL	---	---	**398.2**	**603.3**	**6,927,583.0**	**366.0**	---
Average Day (gpd)							**18,928**
Peak Day (gpd)							**79,293**
Peaking Factor							**4.2**
Minimum Day (gpd)							**8,308**

Lift Station Inspection Log Summary
Year 2002 - 2008

Year	Flow Vol. (gal.)	Average Day (gpd)
2002	3,918,407	10,735
2003	3,477,473	9,527
2004	7,019,317	19,178
2005	5,029,058	13,778
2006	5,315,029	14,562
2007	7,688,762	21,065
2008	6,927,583	18,928
Average	5,625,090	15,396

Appendix E

Treatment Process Design

Calculations for Improvements

Yale WWTF - Improvements
Total Retention - Alternative 1 and 2
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Loadings as per SDDENR criteria

TSS	0.2 lbs/capita/day
BOD_5	20 lb/acre per day on overall system.
	30 lb/acre per day on the primary pond
	0.22 lbs/capita/day

Retention time	365	days (Total Retention)	
Population	118	People	
Design Flow	11,855	gpd	
Design WW Flow Rate	101	gpcd	
Average flow pumped:	4.3	MG for 365 days	
	11850	gal/day	
	0.01185	MG/day	
	13.3	acre-feet	
BOD_5	26.0	lb/d	
Evaporation	3.36	ft	
Precipitation	1.74	ft	
Design Net Evaporation	1.62	ft	
Seepage (1/32" per day)	1.0	ft	
Min area of primary pond	0.9	Acres	(Based on BOD loading)
Min area of pond system	1.3	Acres	(Based on BOD loading)
Min area of pond system	5.10	Acres	(Based on Hydraulic loading)
Total area of Ponds	**5.2**	**acres**	

Proposed Primary Total Retention Stabilization Pond

Working depth	3.5	ft
Area of pond	2.60	acre
	113256	ft^2

Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

Pond Perimeters and Areas at Various Liquid Depths

Depth ft	Perimeter ft	Area ac	ft^2
Bottom	1340	2.2	
2.0	1407	2.4	93,719
3.5	1456	2.6	113,288
4.0	1472	2.7	
5.0	1505	2.8	122,169
6.5	1553	3.0	

557,533 ft^3

Volume of Pond from (Bottom to 5')
4.2 MG

Volume of Pond from (2' to 5')
2.5 MG

Detention time
211 days

Yale WWTF - Improvements
Total Retention - Alternative 1 and 2
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
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Length of Dike on Ponds

Dike Length =	1074	+	571	=	1645 Feet
				TOTAL	1645 Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	552720	Cu Ft
	20470	Cu Yd
@ 1.3 Shrinkage =	**27000**	**Cu Yd**
Volume of Gravel for Road =	4112.5	Cu Ft
	152	Cu Yd
TOTAL	**305**	**Tons**

Seeding (From fence to top of dike)

From Fence	13800	SF	0.32	Ac
Outside Dike =	36547	SF	0.84	Ac
TOTAL	**50347**	**SF**	**1.20**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.20	Ac
	52272	SF
x 0.5' =	26136	CF
Volume of Topsoil =	**968**	**CY**
@ 30% Shrinkage Factor =	**1300**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	33150	ft^2
RIPRAP Needed =	**2500**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**3700**	**Yd^2**

12" SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	137919	ft^2
Volume of Soil Liner =	137919	Cu Ft
	5110	Cu Yd
@ 1.3 Shrinkage =	**7000**	**Cu Yd**

Yale WWTF - Improvements
Total Retention - Alternative 1 and 2
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Proposed Secondary Total Retention Stabilization Pond

Working depth	3.5	ft
Area of pond	2.60	acre
	113256	ft^2
L:W	2.0	:1
Width	238	ft
Length	476	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 596
F = 358

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft	Length Ft	Width Ft	Area Ac	ft^2
Bottom	440	210	2.2	94,080
2.0	464	226	2.4	
3.5	476	238	2.6	113,288
4.0	480	242	2.7	
5.0	488	250	2.8	122,000
6.5	500	262	3.0	

557,693 ft^3

Volume of Pond from (Bottom to 5')
4.2 MG

Volume of Pond from (2' to 5')
2.5 MG

Detention time
211 days

Yale WWTF - Improvements
Total Retention - Alternative 1 and 2
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
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Length of Dike on Ponds

Dike Length =	1044	+	568	=	1612 Feet
			TOTAL		1612 Feet

X-Sectional Area of Dike =	336	Sq.Ft.		
Volume of Embankment =	366240	Cu Ft		
	13560	Cu Yd		
@ 1.3 Shrinkage =	**18000**	**Cu Yd**		
Volume of Gravel for Road =	2725	Cu Ft		
	101	Cu Yd		
TOTAL	**202**	**Tons**		
Fencing Required for Both Ponds=			**2800**	**Ft**
Seeding (From fence to top of dike)				
From Fence	19480	SF	0.45	Ac
Outside Dike =	39615	SF	0.91	Ac
TOTAL	**59095**	**SF**	**1.40**	**Ac**
Top Soil Replacement (6" of Topsoil in seeded areas)				
Seeded Area =	1.40	Ac		
	60984	SF		
x 0.5' =	30492	CF		
Volume of Topsoil =	**1129**	**CY**		
@ 30% Shrinkage Factor =	**1500**	**CY**		
RIPRAP (2' from Bottom to Top of Dike)				
Hypotenuse =	24.7			
Area of RIPRAP =	32556	ft^2		
RIPRAP Needed =	**2500**	**Tons**		
DRAINAGE FABRIC				
Drainage Fabric Needed =	**3700**	**Yd^2**		
SOIL LINER				
Hypotenuse =	32.98			
Area of Soil Liner =	141710	ft^2		
Volume of Soil Liner =	141710	Cu Ft		
	5250	Cu Yd		
@ 1.3 Shrinkage =	**7000**	**Cu Yd**		
TOTAL AREA NEEDED FOR BOTH PONDS				
(Including 10 feet around the outside area)				
Area =	**13.00**	**Acres**		

Yale WWTF - Improvements
Total Retention - Alternative 3
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Loadings as per SDDENR criteria

TSS	0.2 lbs/capita/day
BOD_5	20 lb/acre per day on overall system.
	30 lb/acre per day on the primary pond
	0.22 lbs/capita/day

Retention time	365	days (Total Retention)	
Population	118	People	
Design Flow	15,396	gpd	
Design WW Flow Rate	131	gpcd	
Average flow pumped:	5.6	MG for 365 days	
	15400	gal/day	
	0.0154	MG/day	
	17.3	acre-feet	
BOD_5	26.0	lb/d	
Evaporation	3.36	ft	
Precipitation	1.74	ft	
Design Net Evaporation	1.62	ft	
Seepage (1/32" per day)	1.0	ft	
Min area of primary pond	0.9	Acres	(Based on BOD loading)
Min area of pond system	1.3	Acres	(Based on BOD loading)
Min area of pond system	6.70	Acres	(Based on Hydraulic loading)
Total area of Ponds	**6.8**	**acres**	

Proposed Primary Total Retention Stabilization Pond

Working depth	3.5	ft
Area of pond	3.40	acre
	148104	ft^2

Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

Pond Perimeters and Areas at Various Liquid Depths

Depth Ft	Perimeter Ft	Area Ac	ft^2
Bottom	1581	3.0	131,744
2.0	1614	3.2	
3.5	1643	3.4	147,968
4.0	1660	3.5	
5.0	1713	3.6	158,098
5.5	1738	3.8	

734,762 ft^3

Volume of Pond from (Bottom to 5')
5.5 MG

Volume of Pond from (2' to 5')
3.3 MG

Detention time
214 days

Yale WWTF - Improvements
Total Retention - Alternative 3
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
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Length of Dike on Ponds

Dike Length =	1214	+	639	=	1930 Feet
				TOTAL	1930 Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	648480	Cu Ft
	24020	Cu Yd
@ 1.3 Shrinkage =	**32000**	**Cu Yd**
Volume of Gravel for Road =	4825	Cu Ft
	179	Cu Yd
TOTAL	**357**	**Tons**

Seeding (From fence to top of dike)

From Fence	15147	SF	0.35	Ac
Outside Dike =	41099	SF	0.94	Ac
TOTAL	**56246**	**SF**	**1.30**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.30	Ac
	56628	SF
x 0.5' =	28314	CF
Volume of Topsoil =	**1049**	**CY**
@ 30% Shrinkage Factor =	**1400**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	39112	ft^2
RIPRAP Needed =	**3000**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**4400**	**Yd^2**

12" SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	183893	ft^2
Volume of Soil Liner =	183893	Cu Ft
	6810	Cu Yd
@ 1.3 Shrinkage =	**9000**	**Cu Yd**

Yale WWTF - Improvements
Total Retention - Alternative 3
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BA! No. 20917.00.00

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Proposed Secondary Total Retention Stabilization Pond

Working depth	3.5	ft
Area of pond	3.40	acre
	148104	ft^2
L:W	2.0	:1
Width	272	ft
Length	544	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 664
F = 392

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft	Length Ft	Width Ft	Area Ac	ft^2
Bottom	516	244	2.9	
2.0	532	260	3.2	125,904
3.5	544	272	3.4	147,968
4.0	548	276	3.5	
5.0	556	284	3.6	157,904
5.5	560	288	3.6	

729,733 ft^3

Volume of Pond from (Bottom to 5')
5.5 MG

Volume of Pond from (2' to 5')
3.3 MG

Detention time
214 days

Yale WWTF - Improvements
Total Retention - Alternative 3
(Total Retention Stabilization Pond at Eastern Site)
Stabilization Pond Sizing and Quantities
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Length of Dike on Ponds

Dike Length =	1180	+	636	=	1816	Feet
				TOTAL	1816	Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	411936	Cu Ft
	15260	Cu Yd
@ 1.3 Shrinkage =	**20000**	**Cu Yd**
Volume of Gravel for Road =	3065	Cu Ft
	114	Cu Yd
TOTAL	**227**	**Tons**

Fencing Required for Both Ponds= **3024** **Ft**

Seeding (From fence to top of dike)

From Fence	21520	SF	0.49	Ac
Outside Dike =	44101	SF	1.01	Ac
TOTAL	**65621**	**SF**	**1.60**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.60	Ac
	69696	SF
x 0.5' =	34848	CF
Volume of Topsoil =	**1291**	**CY**
@ 30% Shrinkage Factor =	**1700**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	37603	ft^2
RIPRAP Needed =	**2900**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**4200**	Yd^2

SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	180263	ft^2
Volume of Soil Liner =	180263	Cu Ft
	6680	Cu Yd
@ 1.3 Shrinkage =	**9000**	**Cu Yd**

TOTAL AREA NEEDED FOR BOTH PONDS
(Including 10 feet around the outside area)

Area =	**13.00**	**Acres**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 4
(180-Day Stabilization Ponds at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Loadings as per SDDENR criteria

TSS	0.2 lbs/capita/day
BOD_5	20 lb/acre per day on overall system.
	30 lb/acre per day on the primary pond
	0.22 lbs/capita/day

Stabilization Pond Retention ti	180	days	
Population	118	People	
Design Flow	26,763	gpd	
Design WW Flow Rate	227	gpcd	
Average flow pumped	0.804	MG/month	4.8 MG/180 days
	26,786	gal/day	
	0.026786	MG/day	
	14.8	acre-feet	
BOD_5	26.0	lb/d	
Min area of primary pond	0.9	acres	(Based on BOD loadings)
Min area of pond system	1.3	acres	(Based on BOD loadings)
Storage Provided by pond sys	3.3	MG/180 days	
Detention Time Provided by pi	186.0	days	
Total area of Ponds	**5.8**	acres	

Proposed Primary Stabilization Pond

Seepage (1/32" per day)	0.5	ft/ 180 days
Precipitation	0.9	ft/180 days
Working depth	3.5	ft
Area of pond	2.90	acre
	126324	ft^2
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

Pond Perimeters and Areas at Various Liquid Depths

Depth Ft	Perimeter Ft	Area Ac	ft^2
Bottom	1421	2.4	
2.0	1467.0	2.7	117,185
3.5	1506.0	2.9	126,256
4.0	1523.0	3.0	
5.0	1569.0	3.1	135,617
5.5	1595.0	3.3	

Volume of Pond (from 2' to 5')	378913	ft^3
Volume of Pond (from 2' to 5')	2.8	MG
Seepage	0.5	MG/180 days
Precipitation	-0.8	MG/180 days
Volume of Pond (from 2' to 5') +Seepage - Precipitation	**2.5**	**MG**
Detention Time	**93**	**days**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 4
(180-Day Stabilization Ponds at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Length of Dike on Ponds

Dike Length =	1128	+	598	=	1726 Feet
			TOTAL		1726 Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	579936	Cu Ft
	21480	Cu Yd
@ 1.3 Shrinkage =	**28000**	**Cu Yd**
Volume of Gravel for Road =	4315	Cu Ft
	160	Cu Yd
TOTAL	**320**	**Tons**

Seeding (From fence to top of dike)

From Fence	14300	SF	0.33	Ac
Outside Dike =	38328	SF	0.88	Ac
TOTAL	**52628**	**SF**	**1.30**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.30	Ac
	56628	SF
x 0.5' =	28314	CF
Volume of Topsoil =	**1049**	**CY**
@ 30% Shrinkage Factor =	**1400**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	35154	ft^2
RIPRAP Needed =	**2700**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**4000**	**Yd^2**

12" SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	46871	ft^2
Volume of Soil Liner =	46871	Cu Ft
	1740	Cu Yd
@ 1.3 Shrinkage =	**3000**	**Cu Yd**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 4
(180-Day Stabilization Ponds at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Proposed Secondary Stabilization Pond

Seepage (1/32" per day)	0.5	ft/ 180 days
Precipitation	0.9	ft/180 days
Working depth	3.5	ft
Area of pond	2.90	acre
	126324	ft^2
L:W	2.0	:1
Width	251	ft
Length	502	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 622
F = 371

Pond Dimensions and Areas at Various Liquid Depths

Depth (ft)	Length (ft)	Width (ft)	Area (ac)	ft^2
Bottom	474	253	2.4	
2.0	490	239	2.7	117,110
2.5	502	251	2.9	126,002
4.0	506	255	3.0	
5.0	514	263	3.1	135,182
6.5	526	275	3.3	

Volume of Pond (from 2' to 5')	378150	ft^3
Volume of Pond (from 2' to 5')	2.8	MG
Seepage	0.5	MG/180 days
Precipitation	-0.8	MG/180 days
Volume of Pond (from 2' to 5') +Seepage - Precipitation	**2.5**	**MG**
Detention Time	**93**	**days**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 4
(180-Day Stabilization Ponds at Eastern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Length of Dike on Ponds

Dike Length =	1096	+	594	=	1690	Feet
				TOTAL	1690	Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	383712	Cu Ft
	14210	Cu Yd
@ 1.3 Shrinkage =	**19000**	**Cu Yd**
Volume of Gravel for Road =	2855	Cu Ft
	106	Cu Yd
TOTAL	**211**	**Tons**

Fencing Required for Both Ponds= **2900** **Ft**

Seeding (From fence to top of dike)

From Fence	20260	SF	0.47	Ac
Outside Dike =	41330	SF	0.95	Ac
TOTAL	**61590**	**SF**	**1.50**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.50	Ac
	65340	SF
x 0.5' =	32670	CF
Volume of Topsoil =	**1210**	**CY**
@ 30% Shrinkage Factor =	**1600**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	34486	ft^2
RIPRAP Needed =	**2600**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**3900**	**Yd^2**

SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	155905	ft^2
Volume of Soil Liner =	155905	Cu Ft
	5770	Cu Yd
@ 1.3 Shrinkage =	**8000**	**Cu Yd**

TOTAL AREA NEEDED FOR BOTH PONDS
(Including 10 feet around the outside area)

Area =	**13.00**	**Acres**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 5
(180-Day Stabilization Ponds at Southern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Loadings as per SDDENR criteria

TSS	0.2 lbs/capita/day
BOD_5	20 lb/acre per day on overall system.
	30 lb/acre per day on the primary pond
	0.22 lbs/capita/day

Stabilization Pond Retention tim	180	days	
Population	118	People	
Design Flow	26,763	gpd	
Design WW Flow Rate	227	gpcd	
Average flow pumped	0.804	MG/month	4.8 MG/180 days
	26,786	gal/day	
	0.026786	MG/day	
	14.8	acre-feet	
BOD_5	26.0	lb/d	
Min area of primary pond	0.9	acres	(Based on BOD loadings)
Min area of pond system	1.3	acres	(Based on BOD loadings)
Storage Provided by pond syste	5.0	MG/180 days	
Detention Time Provided by pon	186.0	days	
Total area of Ponds	**5.8**	acres	

Proposed Primary Stabilization Pond

Seepage (1/32" per day)	0.5	ft/ 180 days
Precipitation	0.9	ft/180 days
Area of pond	2.90	acres
	126324	ft^2
L:W	2.0	:1
Width	251	ft
Length	502	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 622
F = 371

Pond Dimensions and Areas at Various Liquid Depths

Depth Ft	Length FL	Width Ft	Area Ac	ft^2
0	474	223	2.4	
2.0	490	239	2.7	117110
3.5	502	251	2.9	126002
4.0	506	255	2.9	
5.0	514	263	3.1	135182
6.5	526	275	3.3	

Volume of Pond (from 2' to 5')	378150	ft^3
Volume of Pond (from 2' to 5')	2.8	MG
Seepage	0.5	MG/180 days
Precipitation	-0.8	MG/180 days
Volume of Pond (from 2' to 5') +Seepage - Precipitat	**2.5**	**MG**
Detention Time	**93**	**days**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 5
(180-Day Stabilization Ponds at Southern Site)
Stabilization Pond Sizing and Quantities
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Length of Dike on Ponds

Dike Length =	1096	+	594	=	1690 Feet
				TOTAL	1690 Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	567840	Cu Ft
	21030	Cu Yd
@ 1.3 Shrinkage =	**28000**	**Cu Yd**
Volume of Gravel for Road =	4225	Cu Ft
	156	Cu Yd
TOTAL	**313**	**Tons**

Seeding (From fence to top of dike)

From Fence	20260	SF	0.47	Ac
Outside Dike =	41330	SF	0.95	Ac
TOTAL	**61590**	**SF**	**1.50**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.50	Ac
	65340	SF
x 0.5' =	32670	CF
Volume of Topsoil =	**1210**	**CY**
@ 30% Shrinkage Factor =	**1600**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	34486	ft^2
RIPRAP Needed =	**2600**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**3900**	**Yd^2**

SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	155905	ft^2
Volume of Soil Liner =	155905	Cu Ft
	5770	Cu Yd
@ 1.3 Shrinkage =	**8000**	**Cu Yd**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 5
(180-Day Stabilization Ponds at Southern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Proposed Secondary Stabilization Pond

Seepage (1/32" per day)	0.5	ft/ 180 days
Precipitation	0.9	ft/180 days
Area of pond	2.90	acres
	126324	ft^2
L:W	2.0	:1
Width	251	ft
Length	502	ft
Dike slope	4	:1
Width of road	10	ft
Ht of Embankment	8	ft

Calculate Outside Dimensions

E = 622
F = 371

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Volume of Pond (from 2' to 5')	378150	ft^3
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Seepage	0.5	MG/180 days
Precipitation	-0.8	MG/180 days
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Detention Time	**93**	**days**

Yale WWTF - Improvements
180 Day Retention Period - Alternative 5
(180-Day Stabilization Ponds at Southern Site)
Stabilization Pond Sizing and Quantities
Yale, SD
BAI No. 20917.00.00

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Length of Dike on Ponds

Dike Length =	1096	+	594	=	1690 Feet
				TOTAL	1690 Feet

X-Sectional Area of Dike =	336	Sq.Ft.
Volume of Embankment =	383712	Cu Ft
	14210	Cu Yd
@ 1.3 Shrinkage =	**19000**	**Cu Yd**
Volume of Gravel for Road =	2855	Cu Ft
	106	Cu Yd
TOTAL	**211**	**Tons**

Fencing Required for Both Ponds = **2700** **Ft**

Seeding (From fence to top of dike)

From Fence	20260	SF	0.47	Ac
Outside Dike =	41330	SF	0.95	Ac
TOTAL	**61590**	**SF**	**1.50**	**Ac**

Top Soil Replacement (6" of Topsoil in seeded areas)

Seeded Area =	1.50	Ac
	65340	SF
x 0.5' =	32670	CF
Volume of Topsoil =	**1210**	**CY**
@ 30% Shrinkage Factor =	**1600**	**CY**

RIPRAP (2' from Bottom to Top of Dike)

Hypotenuse =	24.7	
Area of RIPRAP =	34486	ft^2
RIPRAP Needed =	**2600**	**Tons**

DRAINAGE FABRIC

Drainage Fabric Needed =	**3900**	**Yd^2**

SOIL LINER

Hypotenuse =	32.98	
Area of Soil Liner =	155905	ft^2
Volume of Soil Liner =	155905	Cu Ft
	5770	Cu Yd
@ 1.3 Shrinkage =	**8000**	**Cu Yd**

TOTAL AREA NEEDED FOR BOTH PONDS
(Including 10 feet around the dike outside area)
Area = **11.00** **Acres**

Appendix F

Opinion of Probable Capital Costs and Annual O&M Costs

Opinion of Probable Project Cost

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www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00

ALTERNATIVE NO. 1 - REPLACEMENT OF COLLECTION SYSTEM & NEW TOTAL RETENTION POND SYSTEM

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$64,800	$65,000
COLLECTION SYSTEM:					
1	Base Course and Gravel Surfacing	5,000	Ton	$13	$65,000
2	Granular Embedment	1,300	Ton	$14	$18,200
3	Pipe Foundation Material	700	Ton	$17	$11,900
4	Geotechnical Services	1	Lump Sum	$6,100	$6,100
5	Compaction - Moisture / Density Tests	24	Each	$220	$5,500
6	8" Dia. PVC Gravity Sewer Pipe	6,000	L.F.	$25	$150,000
7	6" Dia. PVC Gravity Sewer Pipe	820	L.F.	$21	$17,300
8	12" Dia. Steel Encasement Pipe - Bored Highway / Road Crossing	150	L.F.	$180	$27,000
9	4" Sewer Service Connection	54	Each	$220	$11,900
10	48" Dia. Sanitary Sewer Manhole Rehab.	24	Each	$2,600	$62,400
11	Seeding	4	Acre	$1,300	$5,200
TREATMENT SYSTEM:					
1	Land Purchase for Stabilization Pond System	21	Acre	$4,000	$84,000
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$8,000	$8,000
3	Remove Existing Lift Station Pumps and Equipment	1	Each	$2,000	$2,000
4	Granular Embedment	200	Ton	$14	$2,800
5	Pipe Foundation Material	100	Ton	$17	$1,700
6	Stabilization Pond Unclassified Excavation - New Pond Site	45,000	C.Y.	$4	$180,000
7	Stabilization Pond 12 inch Clay Liner - New Pond Site	14,000	C.Y.	$4	$56,000
8	Topsoil Placement - New Pond Site	3,000	C.Y.	$3	$9,000
9	Geotechnical Services	1	Lump Sum	$6,100	$6,100
10	Compaction - Moisture / Density Tests	25	Each	$220	$5,500
11	Percolation or Permeability Tests	7	Each	$540	$3,800
12	Exploratory Excavation	50	Hour	$220	$11,000
13	8" Dia. PVC Forcemain	800	L.F.	$20	$16,000
14	8" Transition Coupling	1	Each	$220	$300
15	6" DI MJ 90° Bend w/ Joint Restraints	2	Each	$220	$500
16	6" DI MJ 45° Bend w/ Joint Restraints	1	Each	$220	$300
17	6" DI MJ 22.5° Bend w/ Joint Restraints	1	Each	$220	$300
18	Concrete for Blocks, Floatation Collars and Encasement	40	C.Y.	$220	$8,800
19	2" Sewage Air Release Valve and Manhole	1	Each	$3,900	$3,900
20	Stabilization Pond Headwall / Level Indicator Structure - New Pond	2	Each	$2,900	$5,800
21	Stabilization Pond Inlet Structure - New Pond	1	Each	$3,900	$3,900
22	48" Dia. Stabilization Pond Inlet Control Structure - New Pond	1	Each	$4,000	$4,000
23	72" Dia. Stabilization Pond Transfer Structure w/ Gate Valve - New Pond	1	Each	$9,200	$9,200
24	Base Course and Gravel Surfacing	550	Ton	$13	$7,200
25	48-inch Woven Wire with 2-Strand Barbed Wire Fence	2,800	L.F.	$5	$14,000
26	16-foot Tubular Frame Gate	1	Each	$520	$400
27	Warning Sign	4	Each	$220	$900
28	Seeding	3	Acre	$1,300	$3,900
29	Erosion Control Blanket	7,400	S.Y.	$3	$22,200
30	Silt Fence	2,900	L.F.	$5	$14,500
31	Erosion Bales	150	Each	$13	$2,000
32	Riprap	5,000	Ton	$29	$145,000
33	Lift Station - Valve Vault, Controls and Appurtenances	1	Lump Sum	$102,000	$102,000

Opinion of Probable Construction Costs Subtotal =	$1,177,500
Contingencies (10% Construction Costs Subtotal) =	$117,800
Opinion of Probable Construction Costs (April 2009) =	**$1,295,300**
Engineering, Design and Bid Phase Services =	$92,500
Resident Engineering and Surveying =	$65,800
Operation and Maintenance Manual =	$10,000
Construction Plans of Record =	$1,500
Total Engineering =	$169,800
Administration and Legal =	$84,800
Opinion of Probable Project Cost (April 2009) =	**$1,550,900**

Opinion of Probable Project Cost

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Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00

ALTERNATIVE NO. 2 - LINING OF COLLECTIONS SYSTEM & NEW TOTAL RETENTION POND SYSTEM

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$56,600	$59,000
COLLECTION SYSTEM:					
2	8" Dia. PVC Gravity Sewer Pipe Lining	6,000	L.F.	$30	$180,000
3	6" Dia. PVC Gravity Sewer Pipe Lining	820	L.F.	$30	$24,600
4	48" Dia. Sanitary Sewer Manhole Rehab.	24	Each	$2,600	$62,400
5	4" Sewer Service Connection	54	Each	$220	$11,900
TREATMENT SYSTEM:					
1	Land Purchase for Stabilization Pond System	21	Acre	$4,000	$84,000
2	Storm Water Pollution Prevention Plan	1	Lump Sum	$6,000	$6,000
3	Remove Existing Lift Station Pumps and Equipment	1	Each	$2,000	$2,000
4	Granular Embedment	200	Ton	$14	$2,800
5	Pipe Foundation Material	100	Ton	$17	$1,700
6	Stabilization Pond Unclassified Excavation - New Pond Site	45,000	C.Y.	$4	$180,000
7	Stabilization Pond 12 inch Clay Liner - New Pond Site	14,000	C.Y.	$4	$56,000
8	Topsoil Placement - New Pond Site	3,000	C.Y.	$3	$9,000
9	Geotechnical Services	1	Lump Sum	$6,100	$6,100
10	Compaction - Moisture / Density Tests	25	Each	$220	$5,500
11	Percolation or Permeability Tests	7	Each	$540	$3,800
12	Exploratory Excavation	50	Hour	$220	$11,000
13	6" Dia. PVC Forcemain	800	L.F.	$20	$16,000
14	6" Transition Coupling	1	Each	$220	$300
15	6" DI MJ 90° Bend w/ Joint Restraints	2	Each	$220	$500
16	6" DI MJ 45° Bend w/ Joint Restraints	1	Each	$220	$300
17	6" DI MJ 22.5° Bend w/ Joint Restraints	1	Each	$220	$300
18	Concrete for Blocks, Floatation Collars and Encasement	40	C.Y.	$220	$8,800
19	2" Sewage Air Release Valve and Manhole	1	Each	$3,900	$3,900
20	Stabilization Pond Headwall / Level Indicator Structure - New Pond	2	Each	$2,900	$5,800
21	Stabilization Pond Inlet Structure - New Pond	1	Each	$3,900	$3,900
22	48" Dia. Stabilization Pond Inlet Control Structure - New Pond	1	Each	$4,000	$4,000
23	72" Dia. Stabilization Pond Transfer Structure w/ Gate Valve - New Pond	1	Each	$8,200	$8,200
24	Base Course and Gravel Surfacing	550	Ton	$13	$7,200
25	48-inch Woven Wire with 2-Strand Barbed Wire Fence	2,800	L.F.	$5	$14,000
26	16-foot Tubular Frame Gate	1	Each	$320	$400
27	Warning Sign	4	Each	$220	$900
28	Seeding	3	Acre	$1,300	$3,900
29	Erosion Control Blanket	7,400	S.Y.	$3	$22,200
30	Silt Fence	2,900	L.F.	$5	$14,500
31	Erosion Bales	150	Each	$13	$2,000
32	Riprap	5,000	Ton	$29	$145,000
33	Lift Station - Valve Vault, Controls and Appurtenances	1	Lump Sum	$102,000	$102,000

Opinion of Probable Construction Costs Subtotal =	$1,069,900
Contingencies (10% Construction Costs Subtotal) =	$107,000
Opinion of Probable Construction Costs (April 2009) =	**$1,176,900**
Engineering: Design and Bid Phase Services =	$85,400
Resident Engineering and Surveying =	$78,900
Operation and Maintenance Manual =	$10,000
Construction Plans of Record =	$1,500
Total Engineering =	$175,800
Administration and Legal =	$58,000
Opinion of Probable Project Cost (April 2009) =	**$1,411,600**

Opinion of Probable Project Cost

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Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00

ALTERNATIVE NO. 3 - TOTAL RETENTION STABILIZATION POND SYSTEM AT EASTERN SITE

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$47,200	$48,000
2	Land Purchase for Stabilization Pond System	22	Acre	$4,000	$88,000
3	Storm Water Pollution Prevention Plan	1	Lump Sum	$6,000	$6,000
4	Remove Existing Lift Station Pumps and Equipment	1	Each	$2,000	$2,000
5	Granular Embedment	200	Ton	$14	$2,800
6	Pipe Foundation Material	100	Ton	$17	$1,700
7	Stabilization Pond Unclassified Excavation - New Pond Site	52,000	C.Y.	$4	$208,000
8	Stabilization Pond 12 inch Clay Liner - New Pond Site	18,000	C.Y.	$4	$72,000
9	Topsoil Placement - New Pond Site	3,100	C.Y.	$3	$9,300
10	Geotechnical Services	1	Lump Sum	$6,100	$6,100
11	Compaction - Moisture / Density Tests	25	Each	$220	$5,500
12	Percolation or Permeability Tests	7	Each	$540	$3,800
13	Exploratory Excavation	50	Hour	$220	$11,000
14	6" Dia. PVC Forcemain	800	L.F.	$20	$16,000
15	6" Transition Coupling	1	Each	$920	$900
16	6" DI MJ 90° Bend w/ Joint Restraints	3	Each	$220	$700
17	6" DI MJ 45° Bend w/ Joint Restraints	3	Each	$220	$700
18	6" DI MJ 22.5° Bend w/ Joint Restraints	2	Each	$220	$500
19	Concrete for Blocks, Floatation Collars and Encasement	40	C.Y.	$220	$8,800
20	2" Sewage Air Release Valve and Manhole	1	Each	$3,900	$3,900
21	Stabilization Pond Headwall / Level Indicator Structure - New Pond	2	Each	$2,900	$5,800
22	Stabilization Pond Inlet Structure - New Pond	1	Each	$3,900	$3,900
23	48" Dia. Stabilization Pond Inlet Control Structure - New Pond	1	Each	$4,000	$4,000
24	72" Dia. Stabilization Pond Transfer Structure w/ Gate Valve - New Pond	1	Each	$8,200	$8,200
25	Base Course and Gravel Surfacing	600	Ton	$13	$7,800
26	48-inch Woven Wire with 2-Strand Barbed Wire Fence	3,100	L.F.	$5	$15,500
27	16-foot Tubular Frame Gate	1	Each	$320	$400
28	Warning Sign	4	Each	$220	$900
29	Seeding	4	Acre	$1,300	$5,200
30	Erosion Control Blanket	5,600	S.Y.	$5	$25,800
31	Silt Fence	3,100	L.F.	$5	$15,500
32	Erosion Bales	150	Each	$13	$2,000
33	Riprap	5,700	Ton	$29	$166,000
34	Lift Station, Valve Vault, Controls and Appurtenances	1	Lump Sum	$102,000	$102,000
				Opinion of Probable Construction Costs Subtotal =	$858,100
				Contingencies (10% Construction Costs Subtotal) =	$85,900
				Opinion of Probable Construction Costs (April 2009) =	**$944,000**
				Engineering: Design and Bid Phase Services =	$71,400
				Resident Engineering and Surveying =	$65,300
				Operation and Maintenance Manual =	$10,000
				Construction Plans of Record =	$1,500
				Total Engineering =	$148,200
				Administration and Legal =	$47,200
				Opinion of Probable Project Cost (April 2009) =	**$1,137,400**

Opinion of Probable Project Cost

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Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00

ALTERNATIVE NO. 4 - 180-DAY STABILIZATION POND SYSTEM AT EASTERN SITE

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$65,400	$66,000
2	Land Purchase for Stabilization Pond System	21	Acre	$4,000	$84,000
3	Storm Water Pollution Prevention Plan	1	Lump Sum	$6,000	$6,000
4	Remove Existing Lift Station Pumps and Equipment	1	Each	$2,000	$2,000
5	Granular Embedment	1,600	Ton	$14	$22,400
6	Pipe Foundation Material	800	Ton	$17	$13,600
7	Stabilization Pond Unclassified Excavation - New Pond	47,000	C.Y.	$4	$188,000
8	Stabilization Pond 12 inch Clay Liner - New Pond	16,000	C.Y.	$4	$64,000
9	Topsoil Placement - New Pond Site	3,200	C.Y.	$3	$9,600
10	Geotechnical Services	1	Lump Sum	$6,100	$6,100
11	Compaction - Moisture / Density Tests	25	Each	$220	$5,500
12	Percolation or Permeability Tests	7	Each	$540	$3,800
13	Exploratory Excavation	50	Hour	$220	$11,000
14	6" Dia. PVC Forcemain	8,200	L.F.	$20	$164,000
15	6" Transition Coupling	1	Each	$220	$300
16	6" DI MJ 90° Bend w/ Joint Restraints	5	Each	$220	$1,100
17	6" DI MJ 45° Bend w/ Joint Restraints	3	Each	$220	$700
18	6" DI MJ 22.5° Bend w/ Joint Restraints	2	Each	$220	$500
19	Concrete for Blocks, Floatation Collars and Encasement	40	C.Y.	$220	$8,800
20	2" Sewage Air Release Valve and Manhole	1	Each	$3,900	$3,900
21	6" Dia. Directional Bored Gravity Sewer Pipe	300	L.F.	$49	$14,700
22	12" Dia. Steel Encasement Pipe - Bored Highway / Road Crossing	300	L.F.	$220	$66,000
23	Stabilization Pond Headwall / Level Indicator Structure - New Pond	2	Each	$2,900	$5,800
24	Stabilization Pond Inlet Structure - New Pond	1	Each	$3,900	$3,900
25	48" Dia. Stabilization Pond Inlet Control Structure - New Pond	1	Each	$4,000	$4,000
26	72" Dia. Stabilization Pond Transfer Structure w/ Gate Valve - New Pond	1	Each	$8,200	$8,200
27	Base Course and Gravel Surfacing	600	Ton	$13	$7,800
28	48 inch Woven Wire with 2-Strand Barbed Wire Fence	2,700	L.F.	$5	$13,500
29	16-foot Tubular Frame Gate	1	Each	$320	$400
30	Warning Sign	4	Each	$220	$900
31	Seeding	7	Acre	$1,300	$9,100
32	Erosion Control Blanket	7,800	S.Y.	$3	$23,400
33	Silt Fence	2,800	L.F.	$5	$14,000
34	Erosion Bales	150	Each	$13	$2,000
35	Riprap	6,200	Ton	$24	$151,000
36	Lift Station, Valve Vault, Controls and Appurtenances	2	Lump Sum	$102,000	$204,000

Opinion of Probable Construction Costs Subtotal =	$1,190,000
Contingencies (10% Construction Costs Subtotal) =	$119,000
Opinion of Probable Construction Costs (April 2009) =	**$1,309,000**
Engineering: Design and Bid Phase Services =	$83,300
Resident Engineering and Surveying =	$87,500
Operation and Maintenance Manual =	$10,000
Construction Plans of Record =	$1,500
Total Engineering =	$192,500
Administration and Legal =	$65,500
Opinion of Probable Project Cost (April 2009) =	**$1,567,100**

Opinion of Probable Project Cost

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Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00

ALTERNATIVE NO. 5 - 180-DAY STABILIZATION POND SYSTEM AT SOUTHERN SITE

ITEM NO.	DESCRIPTION OF WORK AND MATERIALS	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization	1	Lump Sum	$60,600	$61,000
2	Land Purchase for Stabilization Pond System	11	Acre	$4,000	$44,000
3	Storm Water Pollution Prevention Plan	1	Lump Sum	$6,000	$6,000
4	Remove Existing Lift Station Pumps and Equipment	1	Each	$2,000	$2,000
5	Granular Embedment	1,600	Ton	$14	$22,400
6	Pipe Foundation Material	800	Ton	$17	$13,600
7	Stabilization Pond Unclassified Excavation - New Pond	47,000	C.Y.	$4	$188,000
8	Imported Clay Liner Material - New Pond	16,000	C.Y.	$8.00	$128,000
9	Topsoil Placement - New Pond Site	3,200	C.Y.	$3	$9,600
10	Geotechnical Services	1	Lump Sum	$6,100	$6,100
11	Compaction - Moisture / Density Tests	25	Each	$220	$5,500
12	Percolation or Permeability Tests	7	Each	$540	$3,800
13	Exploratory Excavation	50	Hour	$220	$11,000
14	8" Dia. PVC Gravity Sewer Pipe	2,200	L.F.	$25	$55,000
15	6" Dia. PVC Forcemain	5,900	L.F.	$20	$118,000
16	6" DI MJ 90° Bend w/ Joint Restraints	4	Each	$220	$900
17	6" DI MJ 45° Bend w/ Joint Restraints	2	Each	$220	$500
18	Concrete for Blocks, Flotation Collars and Encasement	40	C.Y.	$220	$8,800
19	2" Sewage Air Release Valve and Manhole	2	Each	$3,900	$7,800
20	6" Dia. Directional Bored Gravity Sewer Pipe	200	L.F.	$49	$9,800
21	12" Dia. Steel Encasement Pipe - Bored Highway / Road Crossing	100	L.F.	$220	$22,000
20	Stabilization Pond Headwall / Level Indicator Structure - New Pond	2	Each	$2,900	$5,800
21	Stabilization Pond Inlet Structure - New Pond	1	Each	$3,900	$3,900
22	48" Dia. Stabilization Pond Inlet Control Structure - New Pond	1	Each	$4,000	$4,000
23	72" Dia. Stabilization Pond Transfer Structure w/ Gate Valve - New Pond	1	Each	$8,200	$8,200
24	72" Dia. Stabilization Pond Effluent Structure w/ Gate Valve - New Pond	1	Each	$8,200	$8,200
25	Effluent Parshall Flume and Instrument Shelter	1	Lump Sum	$24,000	$24,000
24	Base Course and Gravel Surfacing	600	Ton	$13	$7,800
25	48-inch Woven Wire with 2-Strand Barbed Wire Fence	2,700	L.F.	$5	$13,500
26	16-foot Tubular Frame Gate	1	Each	$320	$400
27	Warning Sign	4	Each	$220	$900
28	Seeding	7	Acre	$1,300	$9,100
29	Erosion Control Blanket	7,800	S.Y.	$3	$23,400
30	Silt Fence	2,800	L.F.	$5	$14,000
31	Erosion Bales	150	Each	$13	$2,000
32	Riprap	5,200	Ton	$29	$151,000
33	Lift Station, Valve Vault, Controls and Appurtenances	1	Lump Sum	$102,000	$102,000

Opinion of Probable Construction Costs Subtotal =	$1,102,000
Contingencies (10% Construction Costs Subtotal) =	$110,200
Opinion of Probable Construction Costs (April 2009) =	**$1,212,200**
Engineering: Design and Bid Phase Services =	$97,500
Resident Engineering and Surveying =	$81,300
Operation and Maintenance Manual =	$10,000
Construction Plans of Record =	$1,500
Total Engineering =	$190,300
Administration and Legal =	$50,700
Opinion of Probable Project Cost (April 2009) =	**$1,453,200**

Opinion of Probable Maintenance Cost

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Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00
Description: Alternatives 1, 2 and 3 (Total Retention Stabilization Pond System at Eastern Site)

Sewer Salaries for additional stabilization pond:

3 hrs per week for April 1-Oct 30 at $12.00/hr	$1,008.00	
1 hrs per for Nov.1 - March 30 at $12/hr	$240.00	
	$1,248.00	**per year**

Sewer Professional, Repair, Maintence and Miscellaneous:

Forcemain	$ 100.00	
Lift Station	$ 500.00	
	$600.00	**per year**

Existing Operation and Maintenance Cost =	$1,800.00	per year
Additional Stabilization cost =	$1,848.00	per year
Total Operation and Maintenance Cost =	**$3,600.00**	**per year**

Opinion of Probable Maintenance Cost

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Engineering | Architecture | Surveying
Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
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Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00
Description: Alternative 4 (180-Day Stabilization Pond System at Eastern Site)

Lab Work:

Self-Monitoring Requirements prior to April 1 discharge:
A grab sample from each cell (4) prior to discharge — 4 Samples

Test	Cost per sample	Number of Anlyses Pior to discharge	Analyses Cost (Including $20 Shipping and Handling)
BOD_5	$16.75	2	$52.50
Total Suspended Solids	$13.65	2	$47.30
Fecal Coliform	$22.00	2	$64.00
Ammonia Nitrogen	$23.00	2	$66.00
pH	$0.00	2	$0.00
Water Temperature	$0.00	2	$0.00

$270.80 Total

Self-Monitoring Requirements for continues discharge from April 1 through Oct. 30:

3 samples the first week of discharge	3 Samples
1 per week for the first month	3 Samples
1 per month after the first month	6 Samples
Fecal Coliform only tested for from May 1 through Sept. 30	5 Samples
Assuming Clear Lake will not be chlorinating	
and discharge does not become intermittent from seepage and evaporation	

Test	Cost per sample	Number of Samples from April 1-Oct. 30	Analyses Cost (Including $20 Shipping and Handling)
BOD_5	$36.75	12	$441.00
Total Suspended Solids	$13.65	12	$403.80
Fecal Coliform	$22.00	5	$220.00
Ammonia Nitrogen	$23.00	12	$276.00
pH	$0.00	12	$0.00
Water Temperature	$0.00	12	$0.00

$1,810.80 Total

Total Cost for Lab Work pior to discharge:	$270.80	
Total Cost for Lab Work from April 1 - Oct. 30:	$1,810.80	
Total Increased Cost for all Lab Work:	**$2,081.60**	**per year**

Sewer Salaries for additional stabilization pond:

3 hrs per week for April 1-Oct 30 at $12.00/hr	$1,008.00	
1 hrs per for Nov.1 - March 30 at $12/hr	$240.00	
	$1,248.00	**per year**

Sewer Professional, Repair, Maintence and Miscellaneous:

Forcemain	$ 200.00	
Lift Station	$ 800.00	
	$1,000.00	**per year**

Existing Operation and Maintenance Cost	$1,800.00	per year
Additional Stabilization cost =	$2,248.00	per year
Additional Lab Work =	$2,081.60	per year
Total Operation and Maintenance Cost for Alternative 1 =	**$6,100.00**	**per year**

Opinion of Probable Maintenance Cost

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Banner Associates, Inc. | 409 22nd Ave So | PO Box 298
Brookings, South Dakota 57006 | 605.692.6342
www.bannerassociates.com

Location: Yale, SD
Date: April 1, 2009
Project: Yale WWTF Facility Plan
BAI 20917.00.00
Description: Alternative 5 (180-Day Stabilization Pond System at Southern Site)

Lab Work:

Self-Monitoring Requirements prior to April 1 discharge:

A grab sample from each cell (2) prior to discharge — 2 Samples

Test	Cost per sample	Number of Anlyses Pior to discharge	Analyses Cost (including $20 Shipping and Handling)
BOD5	$35.75	2	$91.50
Total Suspended Solids	$13.65	2	$47.30
Fecal Coliform	$22.00	2	$64.00
Ammonia Nitrogen	$23.00	2	$66.00
pH	$0.00	2	$0.00
Water Temperature	$0.00	2	$0.00

$270.80 Total

Self-Monitoring Requirements for continues discharge from April 1 through Oct. 30:

3 samples the first week of discharge	3 Samples
1 per week for the first month	3 Samples
1 per month after the first month	6 Samples
Fecal Coliform only tested for from May 1 through Sept. 30	5 Samples
Assuming Clear Lake will not be chlorinating	
and discharge does not become intermittent from seepage and evaporation	

Test	Cost per sample	Number of Samples from April 1-Oct. 30	Analyses Cost (including $20 Shipping and Handling)
BOD5	$35.75	12	$441.00
Total Suspended Solids	$13.65	12	$403.80
Fecal Coliform	$22.00	5	$110.00
Ammonia Nitrogen	$23.00	12	$316.00
pH	$0.00	12	$0.00
Water Temperature	$0.00	12	$0.00

$1,810.80 Total

Total Cost for Lab Work pior to discharge:	$270.80	
Total Cost for Lab Work from April 1 - Oct. 30:	$1,810.80	
Total Increased Cost for all Lab Work:	**$2,081.60**	**per year**

Sewer Salaries for additional stabilization pond:

3 hrs per week for April 1-Oct 30 at $12.00/hr	$1,008.00	
1 hrs per for Nov.1 - March 30 at $12/hr	$240.00	
	$1,248.00	**per year**

Sewer Professional, Repair, Maintence and Miscellaneous:

Forcemain	$ 100.00	
Lift Station	$ 500.00	
	$600.00	**per year**

Existing Operation and Maintenance Cost	$1,800.00	per year
Additional Stabilization cost =	$1,848.00	per year
Additional Lab Work =	$2,081.60	per year
Total Operation and Maintenance Cost for Alternative 1 =	**$5,700.00**	**per year**

Appendix G

Regulatory Agency Letters

Appendix H

Review Comment Letters