Sanitary / Storm Sewer Facilities Applications
January 2015

January 8, 2015
Item 8

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. Dupree (17)
b. Mobridge (16)

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/BWNRappssssf0115.pdf

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

WRAP REVIEW SHEET
SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION
APPLICANT: CITY OF DUPREE

Project Title:	Wastewater System Improvements
Funding Requested:	$240,000
Other Proposed Funding:	$427,500 - CDBG $450,000 – Clean Water SRF CW-01
Total Project Cost:	$1,117,450
Green Reserve Amount:	$0
Project Description:	This project was funded at the BWNR meeting in June 2013. Additional funding is necessary due to higher than anticipated construction bid prices. The project includes rehabilitation of the main lift station and installing riprap at the wastewater treatment facility cells to correct erosion problems. The city's collection system is 90 years old and many of the lines need to be replaced. Therefore, the project includes televising the collection system to determine which lines to replace in the future.
Alternatives Evaluated:	Collection System: 1. No Action alternative was rejected because of the poor condition of the existing collection system. 2. Collection System Cleaning and Televising alternative is recommended. This alternative includes televising the collection system to determine the condition of the system in order to prioritize replacement. 3. Collection System Rehabilitation using Cured-in-Place Pipe or Replacement is rejected at this time. A combination of these two types of rehabilitation will be determined for future projects after televising is complete. 4. Main Lift Station Rehabilitation is recommended. This includes the replacement of the mechanical equipment and piping within the lift station due to extensive deterioration. Wastewater Treatment: 1. No Action alternative was rejected due to the extensive erosion of the treatment cells. 2. Riprap Lagoon Cells and Replace Splitter Box alternative is recommended. This will correct the erosion problems and other treatment system operational issues.

Implementation Schedule:	Dupree bid the project in September 2014 with a project completion date of August 2015.
Service Population:	525
Current Domestic Rate:	$25.55 flat rate
Proposed Domestic Rate at Project Completion:	$27.88 flat rate

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

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan, the City of Dupree would have to enact a surcharge of approximately $5.60. When added to current rate of $25.55 per 5,000 gallons, residents would be paying $31.15 per 5,000 gallons.

25% Funding Subsidy:	$60,000 subsidy with a loan of $180,000
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $180,000 the City of Dupree would have to enact a surcharge of approximately $4.19 thereby paying a rate of $29.64 per 5,000 gallons.

50% Funding Subsidy:	$120,000 subsidy with a loan of $120,000
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $120,000 the City of Dupree would have to enact a surcharge of approximately $2.80 thereby paying a rate $28.35 per 5,000 gallons.

75% Funding Subsidy:	$180,000 subsidy with a loan of $60,000
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $60,000 the City of Dupree would have to enact a surcharge of approximately $1.40 thereby paying a rate $26.95 per 5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: ERIC MEINTSMA

FINANCIAL REVIEW COMPLETED BY: ELAYNE LANDE

SD EForm - 2127LD V2

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OCT - 1 2014
Division of Financial & Technical Assistance

Sanitary/Storm Sewer Facilities Funding Application

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

Applicant	Proposed Funding Package		
City of Dupree	CWFCP / CWSRF		$240,000
Address	Local Cash		
PO Box 276 Dupree, South Dakota 57623-0276	Other	CWSRF Loan-Existing	$450,000
	Other	CDBG	$427,450
Subapplicant	Other		
N/A			
DUNS Number 164191181		**TOTAL**	$1,117,450

Project Title: Dupree Wastewater System Improvements

Description:

The City of Dupree proposes to undertake major improvements to the city's wastewater system. The city's main collection system was constructed in the 1920's and experiences excessive I and I. Based on cleaning and televising of the lines, repair and or replacement of lines will need to be determined. The main lift station was constructed in 1976 and is in extremely poor condition--severe rusting, inoperable valves, tripping hazards with the power cables, etc. Therefore, the lift station needs to be rehabilitated. The lagoons are in need of riprapping due to significant erosion, and the security fencing is in need of replacement, The city has violated their NPDES permit and has been in negotiations with EPA regarding the matter and the corrective actions that need to be addressed. To date the fine for the city has been lower from $30,000 to $3,000.The project will need to be phased and this project is Phase I which will include the lagoon and lift station improvements, as well as cleaning and televising of the lines. The second phase will include replacement/rehabilitation of sewer collection lines. The project has gone to bids twice and these are the city needs additional funds to complete Phase I of the project. The city already has a $450,000 CWSRF loan and a $427,450 CDBG for this project.

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.

Raymond J. Lenk, Mayor — 9/30/2014

Name & Title of Authorized Signatory (Typed) — Signature — Date

Sanitary/Storm Sewer Facilities Funding Application

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

Applicant

City of Dupree

Address

PO Box 276
Dupree, South Dakota 57623-0276

Subapplicant

N/A

DUNS Number

164191181

Proposed Funding Package

CWFCP / CWSRF		$240,000
Local Cash		
Other	CWSRF Loan-Existing	$450,000
Other	CDBG	$427,450
Other		
	TOTAL	$1,117,450

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Raymond J. Lenk, Mayor — Raymond J. Lenk — 9/30/2014

Name & Title of Authorized Signatory (Typed) — Signature — Date

Professional Consultants

Application Prepared By: Central South Dakota Enhancement District

Contact Person: Marlene Knutson, Executive Director

Mailing Address: PO Box 220

City, State, and Zip: Pierre, South Dakota 57501

Telephone Number: 605-773-2782 or 605-773-2780 Fax: 605-773-2784

Email address: mknutson@csded.org

Consulting Engineering Firm: Brosz Engineering

Contact Person: Chancey Shrake

Mailing Address: 3030 Airport Road, Suite A

City, State, and Zip: Pierre, South Dakota 57501

Telephone Number: 605-224-1123 Fax: 605-224-0659

Email address: chanceys@broszengineering.com

Legal Counsel's Firm: Bogue & Bogue

Legal Counsel: Cheryl or Eric Bogue

Mailing Address: PO Box 250

City, State, and Zip: Faith, South Dakota 57626

Telephone Number: 605-267-2529 Fax: Not Working

Email address: boguelaw@faithsd.com

Bond Counsel's Firm: Meierhenry Sargent, LLP

Bond Counsel: 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 CWFCP / DWSRF	B CWSRF Loan 1	C CDBG	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services						
B. Travel						
C. Legal including Bond Counsel	$2,400.00	$4,500.00				$6,900.00
D. Other publications, audits, admin. assist, etc	$150.00	$2,500.00	$12,450.00			$15,100.00
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees		$110,000.00				$110,000.00
B. Project Inspection Fees	$1,000.00	$46,000.00				$47,000.00
C. Other						
4. Construction and Project Improvement	$226,450.00	$240,550.00	$415,000.00			$882,000.00
5. Equipment						
6. Contractual Services						
7. Other Cleaning & Televising		$46,280.00				$46,280.00
8. Other						
9. Subtotal (Lines 1-8)	$230,000.00	$449,830.00	$427,450.00			$1,107,280.00
10. Contingencies	$10,000.00	$170.00				$10,170.00
11. Total (Lines 9 and 10)	$240,000.00	$450,000.00	$427,450.00			$1,117,450.00
12. Total %	21.48%	40.27%	38.25%	0.00%	0.00%	100.00%

Columns A - E: Identify each funding source and enter the amounts budgeted by cost category.

Comments: Dupree has secured the CDBG and a $450,000 CWSRF loan for the project. After the second bid opening, the city needs approximately $240,000 of additional funds. The city will need the entire $240,000 in CWFC and/or loan forgiveness to keep the sewer rates at $25.55 per month/user. If the city has to borrow the entire amount the city will need an approximately $5.60 wastewater surcharge/user/month for this additional $240,000. Continue last page!

Method of Financing

Source Header		Secured Funds	Unsecured Funds (Date Anticipated)
Local Cash (Identify Source)			
Other (Explain)	New CWFC/CWSRF		$240,000.00 1/2015
Other (Explain)	Existing CWSRF Loan	$450,000.00 6/2013	
Other (Explain)	Existing CDBG	$427,450.00 10/2013	
Other (Explain)			
Other (Explain)			
TOTAL		$877,450.00	$240,000.00

Comments: The city has secured the CDBG and the existing $450,000 CWSRF loan for the project. A $240,00 loan would involve a surcharge of approximately $5.60 month/user for the 206 wastewater users in Dupree. This would be added onto the existing $10.55 surcharge and $15 minimum, resulting in a wastewater fee of $31.15. The city would like to keep sewer rates as low as possible as the water rates are currently $64.85/month/user for 5,000 gallons. Further, this is only phase I of the wastewater project and it is anticipated collection system improvements will need to be undertaken.

7.4.1 Repayment Information

Interest rate and term you are applying for: 3.25 %, 30 years.

What security is being pledged toward the repayment of this loan?

- ☐ 1. General Obligation bond (requires bond election)
- ☐ 2. Wastewater Revenue bond
- ☐ 3. Storm Sewer Revenue bond
- ☒ 4. Project Surcharge Revenue bond
- ☐ 5. Sales Tax Revenue bond

7.4.2 Documents That Must Be Submitted With Application

Financial Documents

1. Most recent audit or unaudited financial statement to include specific accounting of fund pledged for repayment. See attached!
2. Current year's budget. See attached!

Planning and Legal Documents

1. Governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of Clean Water SRF application and signing of payment requests. This resolution must also include the maximum loan amount requested, interest rate and term being applied for, description of proposed project, and security pledged towards repayment of the loan. To be submitted! To be submitted

Facilities Plan (See section 8.4.16 for a detailed outline.)

7.4.3 General Information

The month and day your fiscal year begins: January 1

Population Served
Current 525 (2010 census) 2013 Census Population Estimate--529
2000 434 1990 484

Top Five Employers Within 30 Miles	Number of Employees	Type of Business
Cheyenne River Sioux Tribe	600	Government
Cheyenne-Eagle Butte School System	200	Education
IHS Hospital--Eagle Butte	145	Health Care
Lakota Thrifty Mart--Eagle Butte	77	Retail
Dupree School*	64	Education

Please indicate employers within boundary of issuing entity with an asterisk (*).

7.4.4 Wastewater Utility Information

Current Wastewater Utility Debt

Year	2013
Purpose	Wastewater
Security Pledged	WW Surcharge
Amount	$450,000.00
Maturity Date (mo/yr)	10/43 estimated
Debt Holder	BWNR
Debt Coverage Requirement	110%
Avg. Annual Required Payment	$23.538.64 *
Outstanding Balance	$450,000.00

*estimated as project is in progress.

Use additional sheets if more room is required to list all current wastewater utility debt.

Wastewater Utility Cash Flow

Fiscal Year	Prior Year 2012	Prior Year 2013	Current Year Budgeted 2014**	Future Year # 2016
OPERATING CASH FLOW				
Wastewater Sales	$35,761	$37,069.65	$37,080.00	$37,080.00
Surcharge Fee	$0	$6,034.71	$26,079.60	$31,840.00
Other (Explain) Connect Fee		$200.00		
OPERATING PAYMENTS				
Personal Services	($5,677)	($4,558.01)	($7,397.00)	($8,000.00)
Chemical, Material & Supplies	($5,324)	($10,613.69)	($10,000.00)	($11,000.00)
Electric & Other Utilities	($1,658)	($449.97)	($500.00)	($600.00)
Other (Explain) travel, training, insurance, fees, etc.	($5,111)	($843.69)	($1,400.00)	($1,600.00)
NET CASH FROM OPERATIONS	$17,991	$26,839.00	$43,862.60	$47,720.00
NONOPERATING CASH FLOW				
Interest Income				
Other Revenue (Explain) Small C Planning Grant/RD Grant	$26,661.40			
Transfers In (Explain)				
Fixed Asset Sale (Explain)				
Transfers Out (Explain)				
Fixed Asset Purchases (Explain)			($1,000.00)	
Generator for Lift Station/Jetter	($16,661.40)			
Debt Payment (Principal Only)				($11,027.94)
Debt Payment (Interest Only)				($17,741.50)
Other Expenses (Explain) Engineering Studies/Services; 2013 EPA FiNE	($20,630.00)	($3,013.31)		
NET CASH FROM NONOPERATING	($10,630)	($3,013.31)	($1,000.00)	($28,769.44)
Net Increase (Decrease) in Cash	$7,361	$23,825.69	$42,862.60	$18,950.56
Beginning Cash Balance	$185	$7,546.00	$31,371.69	$50,000.00
Ending Cash Balance	$7,546	$31,371.69	$74,234.29	$68,950.56
RESTRICTED BALANCE	$0	$0.00	$0.00	$0.00
UNRESTRICTED BALANCE	$7,546	$31,371.69	$74,234.29	$68,950.56

Future Year: First full year after project completion-2016 budget is based on a $550,000 loans total and $27.88 rates--enable the city to put money away for equipment and replacement of collection lines identified in current project.

2014 Budget did not separate regular and surcharge rate.

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)

Others Systems - monthly rates at 7,000 gallons (935 cubic feet)

Check one: ✓ Incorporated Municipality or Sanitary District

or

___ Other System

Monthly:	Current Rate	Proposed Rate	# of Accounts	Average use gallons/cubic feet
Domestic	$25.55	$27.88*	186	4800*
Business	$25.55	$27.88 *	20	8857*
Other:				
Other:				

*Based on average water usage.

Are fees based on usage or flat rate? Flat Fee

When is proposed fee scheduled to take effect? actual rate will be determined based on funding package, but the$27.88 rate is based on a $100,000 loan.

When did the current fee take effect? August, 2013

What was the fee prior to the current rate? $23

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

A copy of the current rate is attached.

Five Largest Customers	Type of Business	% of System Revenues
Dupree School	Education	2
Rest are all equal		

Storm Sewer Projects: THIS SECTION IS NOT APPLICABLE!

Does sponsor have a separate storm water fee? Yes _____ No _____

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules. Identify below the rate charged and explain how fee is calculated.

7.4.5 Property Tax Information THIS SECTION IS NOT APPLICABLE!

(Complete this section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year			
Assessed Valuation			
Full & True Valuation			

Three year levies and collection trend:

Year			
Amount Levied			
Collected			
Penalties/Interest			
Late Payments			

Three Largest Taxpayers	Description	Assessed Valuation

List all current debt secured by General Obligation bond: N/A

Year					
Purpose					
Security Pledged					
Amount					
Maturity Date (mo/yr)					
Debt Holder					
Debt Coverage Requirement					
Avg. Annual Required Payment					
Outstanding Balance					

Use additional sheets if more room is required to list all current G.O. debt.

7.4.6 Sales Tax Information N/A

(Complete only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

List all current debt secured by sales tax:

Year Issued									
Purpose									
Amount									
Maturity Date (mo/yr)									
Debt Holder									
Debt Coverage Requirement									
Avg. Annual Required Payment									
Outstanding Balance									

Use additional sheets if more room is required to list all current sales tax debt.

7.4.7 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 help expedite the review process.

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 section 8.4.16.	×
♦ A public hearing held discussing the project and the use of an SRF loan to finance the project. (See section 8.4.15)	×
♦ Minutes of the public hearing prepared and submitted to the department for inclusion into the final Facilities Plan.	×
♦ The affidavit of publication of the public hearing received and submitted to the department for inclusion into the final Facilities Plan. (See section 8.4.15)	×
♦ The four review agencies contacted and responses received for inclusion into the final Facilities Plan. (See section 8.4.16)	×
The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. (See section 8.4.18)	X

As this is a request for additional funds, the environmental was completed as part of the initial CWSRF loan.

7.4.8 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	Proposed 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.	$240,000
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	Proposed 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. Cost 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		$240,000

City of Dupree

Name of Applicant

Signature of Authorized Representative

9/30/2014

Date

7.4.9 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 preharvest planning, 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 pumpout 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 underused 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 collection and 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		$0

City of Dupree

Name of Applicant

Signature of Authorized Representative

9/30/2014

Date

7.4.10 Preaward Compliance Review

FORM Approved By OMB: No. 2030-0020 Expires 12-31-2011

United States Environmental Protection Agency
Washington, DC 20460

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note : Read instructions on other side before completing form.

I. Applicant/Recipient (Name, Address, State, Zip Code).	DUNS No.
City of Dupree, PO Box 276, Dupree, SD 57623-0276	164191181

II. Is the applicant currently receiving EPA assistance? Currently approved for CWSRF Loan.

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) None

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective action taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) None

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3)). N/A

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below. Yes

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable bypersons with disabilities, explain how a regulatory exception (40 C.F.R. § 7.70) applies. The city provides wastewater services to all users regardless of disability status.

VII.* Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex,age, or disability in its programs or activities? (40 C.F.R. § 5.140 and § 7.95) Yes

a. Do the methods of notice accommodate those with impaired vision or hearing? Yes b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications? Yes c. Does the notice identify a designated civil rights coordinator? Yes

VIII.* Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. § 7.85(a)) Yes

IX.* Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)

X.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator. N/A -- less than 15 employees

XI* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet address for, or a copy of, the procedures. N/A--less than 15 employees

For the Applicant/Recipient I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official	B. Title of Authorized Official	C. Date
[signature]	Mayor	9/30/2014

For the U.S. Environmental Protection Agency I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preawardcompliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisionsof 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized EPA Official See ** note on reverse side.	B. Title of Authorized EPA Official	C. Date

EPA Form 4700-4 (Rev. 03/2008). Previous editions are obsolete.

7.4.11 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, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

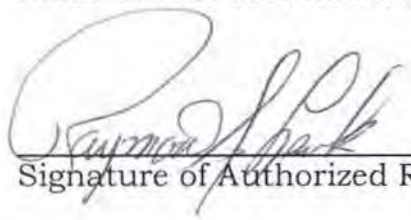
(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(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.

Raymond J Lenk, Mayor

Name & Title of Authorized Representative



9/30/2014

Signature of Authorized Representative Date

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

CITY OF DUPREE
BOX 276
DUPREE, SD 57623

Exhibit I

MUNICIPALITY OF DUPREE
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
31-Dec-13

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	500.00								500.00
Change and Petty Cash	200.00								200.00
Passbook Savings	215,121.49								215,121.49
Savings Certificates									
CD 12583	10,000.00								10,000.00
CD 12780	20,000.00								20,000.00
101 FUND CASH BALANCES (Note 1)	245,821.49								245,821.49

Municipal funds are deposited or invested with the following depositories:

First Financial Bank USA, Dupree, South Dakota	245,821.49
	245,821.49

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF DUPREE
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	Garbage Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue	215,967.43			148,594.16	43,304.36	33,451.83			441,317.78
Surcharge as Security for Debt									0.00
380.05 Lottery Revenues									0.00
330 Operating Grants (CDBG)(DENR)				338,068.00					338,068.00
Total Receipts	215,967.43			486,662.16	43,304.36	33,451.83			779,385.78
Disbursements (Function):									
411-419 General Government (414)	213,633.24								213,633.24
421 Police	21,000.00								21,000.00
422 Fire	0.00								0.00
423-429 Other Public Safety (429)	0.00								0.00
431 Highways and Streets (includes snow removal & street lights)	1,093.11								1,093.11
432 Sanitation (includes garbage & rubble sites)	20,556.49								20,556.49
437 Cemeteries	0.00								0.00
433-439 Other Public Works (435)	0.00								0.00
441-449 Health and Welfare (441)	3,778.87								3,778.87
451-459 Culture-Recreation (451)	600.00								600.00
461-469 Conservation and Development (465)	0.00								0.00
470 Debt Service	0.00								0.00
480 Intergovernmental Expenditures	0.00								0.00
490-492 Miscellaneous (492)	0.00								0.00

MUNICIPALITY OF DUPREE
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	Garbage Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services (Salaries)				36,686.74	4,636.32	4,558.44			45,881.50
420 Other Expenses (Grants)				337,682.60	0.00	0.00			337,682.60
426 Supplies and Materials				78,897.44	14,842.47	16,671.45			110,411.36
Total Disbursements	493,975.46			453,266.78	19,478.79	21,229.89			493,975.46
39101 Transfers In									
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	
391.2 Money Received From Borrowing									
Subtotal of Receipts, Disbursements and Transfers	754,637.17								754,637.17
Fund Cash Balance, January 1, 2014	245,821.49								245,821.49
Adjustments:									
Restated Fund Cash Balance, January 1, 2014	245,821.49								245,821.49
FUND CASH BALANCE, DECEMBER 31, 2014	245,821.49								245,821.49

Exhibit II
Page 1

MUNICIPALITY OF DUPREE
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	42,160.56								42,160.56
313 Sales Tax	65,499.07								65,499.07
316 911 Telephone Surcharge	0.00								0.00
311-319 Other Taxes (319)	1,094.78								1,094.78
320 Licenses and Permits	0.00								0.00
331 Federal Grants	50,000.00								50,000.00
335.1 Bank Franchise Tax	7,387.62								7,387.62
335.2 Motor Vehicle Commercial Prorate	4,437.50								4,437.50
335.3 Liquor Tax Reversion	2,794.61								2,794.61
335.4 Motor Vehicle Licenses (5%)	9,275.75								9,275.75
335.6 Fire Insurance Premium Reversion	0.00								0.00
335.7 Liquor License Reversion	0.00								0.00
335.8 Local Government Highway and Bridge Fund	17,855.87								17,855.87
338.1 County Road Tax (25%)	173.39								173.39
338.2 County Highway and Bridge Reserve Tax (25%)	0.00								0.00
338.3 County Wheel Tax	0.00								0.00
331-339 Other Intergovernmental Revenue (339)	0.00								0.00
341-349 Charges for Goods and Services (341)	640.00								640.00
351-359 Fines and Forfeits (351)	0.00								0.00
361 Investment Earnings	1,354.00								1,354.00
362 Rentals	0.00								0.00
363-369 Other Revenues (369)	13,294.28								13,294.28

2012 Ann Report.

Exhibit I

MUNICIPALITY OF Dupree, South Dakota
STATEMENT OF FUND CASH BALANCES
ALL FUNDS
31-Dec-12

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Cash Assets:									
Cash in Checking Accounts	500.00								500.00
Change and Petty Cash	200.00								200.00
Passbook Savings	127,859.34								127,859.34
Savings Certificates									0.00
									0.00
CD # 12583	10,000.00								10,000.00
CD # 12780	20,000.00								20,000.00
									0.00
101 FUND CASH BALANCES (Note 1)	158,559.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	158,559.34

Municipal funds are deposited or invested with the following depositories:

First Financial Bank USA, Dupree, South Dakota	158,559.34
	158,559.34

Note 1: These amounts must equal the amounts stated on the bottom line of Exhibit II, page 3.

MUNICIPALITY OF Dupree, South Dakota
STATEMENT OF RECEIPTS, DISBURSEMENTS AND CHANGES IN FUND CASH BALANCES
ALL FUNDS
For the Year Ended December 31, 2012

				Enterprise Funds					
	General Fund	Fund	Fund	Water Fund	Sewer Fund	Fund	Fund	Fund	Total
Receipts (Source):									
311 Property Taxes	40,951.63								40,951.63
313 Sales Tax	49,626.84								49,626.84
316 911 Telephone Surcharge									0.00
311-319 Other Taxes (319)	737.01								737.01
320 Licenses and Permits									0.00
331 Federal Grants	29,521.11								29,521.11
335.1 Bank Franchise Tax									0.00
335.2 Motor Vehicle Commercial Prorate	4,358.92								0.00 4,358.92
335.3 Liquor Tax Reversion	8,814.31								8,814.31
335.4 Motor Vehicle Licenses (5%)	8,919.98								8,919.98
335.6 Fire Insurance Premium Reversion									0.00 0.00
335.7 Liquor License Reversion									0.00
335.8 Local Government Highway and Bridge Fund	11,585.36								0.00 11,585.36
338.1 County Road Tax (25%)	173.39								173.39
338.2 County Highway and Bridge Reserve Tax (25%)									0.00 0.00
338.3 County Wheel Tax									0.00
331-339 Other Intergovernmental Revenue (339)									0.00 0.00
341-349 Charges for Goods and Services (341)	1,757.61								0.00 1,757.61
351-359 Fines and Forfeits (351)									0.00
361 Investment Earnings	1,028.21								1,028.21
362 Rentals	1,206.29								1,206.29
363-369 Other Revenues (369)	26,124.63								26,124.63

MUNICIPALITY OF Dupree, South Dakota
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	Garbage Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
380 Enterprise Operating Revenue				137,069.17	35,761.29	31,153.58			203,984.04
Surcharge as Security for Debt									0.00
380.05 Lottery Revenues									0.00
330 Operating Grants									0.00
Total Receipts	184,805.29	0.00	0.00	137,069.17	35,761.29	31,153.58	0.00	0.00	388,789.33
Disbursements (Function):									
411-419 General Government (414)	65,728.95								65,728.95
421 Police	21,000.00								21,000.00
422 Fire									0.00
423-429 Other Public Safety (429)									0.00
431 Highways and Streets (includes snow removal & street lights)	48,056.55								48,056.55
432 Sanitation (includes garbage & rubble sites)	39,410.33								39,410.33
437 Cemeteries									0.00
433-439 Other Public Works (435)	123,771.79								123,771.79
441-449 Health and Welfare (441)	1,181.41								1,181.41
451-459 Culture-Recreation (451)	2,435.22								2,435.22
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 Dupree, South Dakota
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	Garbage Fund	Fund	Fund	Total
ENTERPRISE FUNDS									
410 Personal Services				64417.29		8869.68			73,286.97
420 Other Expenses				59354.50	67281.28	3330.65			129,966.43
426 Supplies and Materials									0.00
Total Disbursements	301,584.25	0.00	0.00	123,771.79	67,281.28	12,200.33	0.00	0.00	504,837.65
39101 Transfers In									0.00
51100 Transfers Out	( )	( )	( )	( )	( )	( )	( )	( )	0.00
391.2 Money Received From Borrowing									0.00
2012 Revenue + Grants	184,805.29			137,069.17	35,761.29	31,153.58			424,550.62
2012 Disbursements	138,402.13			123,771.79	67,281.28	12,200.33			341,655.53
	46,403.16			13,297.38	(31,519.99)	18,953.25			47,133.80
Subtotal of Receipts, Disbursements and Transfers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fund Cash Balance, January 1, 2012	83,013.70								83,013.70
Adjustments:									
									0.00
									0.00
									0.00
Restated Fund Cash Balance, January 1, 2012	83,013.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83,013.70
FUND CASH BALANCE, DECEMBER 31, 2012	83,013.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83,013.70

2012
REVENUE REPORT

2012 Sewer Rev. Budget

012 Revenue Budget	Approved	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Revenue	Budget
City of Dupree, SD 57623	Budget	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	to Date	Balance
	2012														
01-311 **Property Taxes**															
311.01 City Real Estate Taxes	$35,100.00	719.75	2,280.75	1,254.30	2,190.33	11,516.74	2,079.69	3,898.80	4,023.91	1,194.34		9,585.97	2,207.05	40,951.63 ✓	-5,851.63
313 City Sales Tax	$56,000.00	4,962.49	2,603.65	4,361.70	6,316.10	2,677.76	6,505.75	2,059.92	2,597.87	4,126.13	7,876.99	3,426.13	2,112.35	49,626.84 ✓	6,373.16
315 Amusement Tax (Fireworks & etc.)	$100.00						100.00		96.00					196.00 ✓	-96.00
319 Interest & Penalties (Delinq. Taxes)	$500.00	26.71	19.88	5.53	3.65		7.31	333.55		32.34		11.09	100.95	541.01 ✓	-41.01
335 State Shared Revenue														0.00	
335.01 State Bank Franchise Tax	$1,000.00	0.00												0.00	1,000.00
335.02 Motor Vehicle Comm. Pro-Rate	$5,000.00		1,687.26						2,671.66					4,358.92 ✓	641.08
335.30 State Liquor Tax Reversion	$6,000.00	778.55			677.38	5,925.08		652.78			780.52			8,814.31 ✓	-2,814.31
335.40 City Motor Vehicle Licenses	$6,000.00	382.21	760.41	1,071.61	935.42	433.37	911.28	737.66	920.41	464.04	799.23	814.44	689.90	8,919.98 ✓	-2,919.98
335.80 Highway & Bridge Fund	$5,000.00	3,326.25						3,254.31			5,004.80			11,585.36 ✓	-6,585.36
335.90 Other	$0.00													0.00	0.00
338 County Shared Tax															
338.01 County Road Tax	$0.00						173.39							173.39 ✓	-173.39
340 City Charges (Services)	$100.00	-15.74	-5.00				28.35	1,650.00	100.00					1,757.61 ✓	-1,657.61
361 City Investment Earnings	$800.00	197.23	34.80	39.47					62.93	664.51		29.27		1,028.21 ✓	-228.21
362 City Rentals	$4,800.00					1,205.29			1.00					1,206.29 ✓	3,593.71
363 Other (Grant Sources)											OK				
363.1 Grant #1 - Waste Water Grant	$0.00	13,862.00	3,104.98			123.00					10,000.00			27,089.98	-27,089.98
363.2 Grant #2 - Energy Grant	$0.00												2,038.00	2,038.00	-2,038.00
363.3 Grant #3 - Equipment Grant	$0.00											393.13		393.13	-393.13
368 City Liquor 5% Agreement	$4,300.00			2,372.80	705.64	1,094.04	528.49	1,897.48	618.28	1,595.71	808.10	1,183.41	1,918.68	12,722.63 ✓	-8,422.63
369.99 Other	$0.00														0.00
390 Outside Sources -															
390.1 Incoming Transfers	$0.00													0.00	0.00
390.3 Sale of Municipal Property	$0.00	13,402.00												13,402.00 ✓	-13,402.00
390.5 Unencumbered Revenue	$0.00													0.00	0.00
Total General Revenue	**$124,700.00**	**37,641.45**	**10,486.73**	**9,105.41**	**10,828.52**	**22,975.28**	**10,334.26**	**14,484.50**	**11,092.06**	**8,077.07**	**25,269.64**	**15,443.44**	**9,066.93**	**184,805.29**	**-60,105.29**
Water Revenue															
381.1 Metered & Flat Water Sales	$118,800.00	9,774.04	9,455.50	1,256.37	9,658.46	11,256.38	13,414.03	11,975.10	12,478.84	14,506.27	13,183.47	8,705.98	12,702.06	$128,366.50	-9,566.50
381.3 Sales of Supplies & Materials	$1,000.00												155.96	$155.96	844.04
381.8 Grant Sources	$0.00													$0.00	0.00
381.9 Late Fees	$5,000.00	777.36	475.99	288.41	354.90	351.29	474.10	479.50	295.25	208.54	378.58	1,325.04	337.75	$5,746.71	-746.71
381.91 Meter Deposits	$0.00	300.00	200.00	100.00	200.00	300.00	400.00	400.00	200.00	300.00	200.00		200.00	$2,800.00	-2,800.00
Total Water Revenue	**$124,800.00**	**10,851.40**	**10,131.49**	**1,644.78**	**10,213.36**	**11,907.67**	**14,288.13**	**12,854.60**	**12,974.09**	**15,014.81**	**13,762.05**	**10,031.02**	**13,395.77**	**137,069.17**	**-12,269.17**
Solid Waste or Garbage Revenue															
388 Solid Waste Collection	$34,800.00	2,846.48	1,966.76	2,768.10	2,229.25	2,590.58	2,633.39	2,359.48	2,565.08	2,390.24	2,626.12	1,966.26	2,907.89	$29,849.63	4,950.37
388.7 Other Sources	$0.00													$0.00	0.00
388.8 Grant Sources	$0.00													$0.00	0.00
388.9 Sales Tax	$0.00	132.44	84.25	119.68	94.50	113.93	106.17	105.74	108.71	99.36	126.06	90.35	122.76	$1,303.95	-1,303.95
Total Solid Waste/Garbage Revenue	**$34,800.00**	**2,978.92**	**2,051.01**	**2,887.78**	**2,323.75**	**2,704.51**	**2,739.56**	**2,465.22**	**2,673.79**	**2,489.60**	**2,752.18**	**2,056.61**	**3,030.65**	**31,153.58**	**3,646.42**
Sewer Revenue															
383.1 Flat Sewer Rate	$36,700.00	3,581.60	2,540.84	3,268.61	2,736.10	3,155.93	3,088.86	2,617.73	3,158.00	2,896.32	3,323.49	2,369.95	3,023.86	$35,761.29	938.71
383.8 Grant Sources	$0.00													$0.00	0.00
383.9 Other Sources	$0.00													$0.00	0.00
Total Sewer Revenue	**$36,700.00**	**3,581.60**	**2,540.84**	**3,268.61**	**2,736.10**	**3,155.93**	**3,088.86**	**2,617.73**	**3,158.00**	**2,896.32**	**3,323.49**	**2,369.95**	**3,023.86**	**35,761.29**	**938.71**
Total Revenue From All Sources	**$321,000.00**	**55,053.37**	**25,210.07**	**16,906.58**	**26,101.73**	**40,743.39**	**30,450.81**	**32,422.05**	**29,897.94**	**28,477.80**	**45,107.36**	**29,901.02**	**28,517.21**	**388,789.33**	**-67,789.33**

* *5,862.07 this was an energy grant

@ 12,220 was written off Voided. but was posted.

2012
EXPENSE REPORT

2012 Sewer Exp Budget

428 Utilities (Electricity)	$1,500.00	72.40	29.77	34.54										$136.71	1,363.29
429 Other (Dues, Subscriptions, etc.)	$500.00									25.00		112.84	189.92	$327.76	172.24
431 Sales Tax (SD Dept. of Revenue)	$0.00						644.32						652.98	$1,297.30	-1,297.30
Total Sanitary Administration	$19,891.94	943.99	502.33	504.58	528.78	506.36	1,081.08	421.39	434.38	595.33	940.06	1,097.92	1,313.48	8,869.68	11,022.26
432.4 Garbage Collection & Disposal															
421 Insurance	$1,100.00	559.00								577.36		89.00		$1,225.36	-125.36
424 Rentals	$0.00													$0.00	0.00
425 Repairs & Maintenance	$2,000.00			136.85				16.04						$152.89	1,847.11
426 Collection Supplies	$6,000.00			338.00	265.64	160.43	163.63	200.36	297.80					$1,425.86	4,574.14
428 Landfill Charges (Disposal)	$5,000.00								20.00	20.00	25.00	25.00	25.00	$115.00	4,885.00
429 Other (Part time help)	$250.00							230.32	131.22			50.00		$411.54	-161.54
434 Machinery & Equipment	$2,000.00													0.00	2,000.00
Total 432.4 Garbage Collection & Disp.	$16,350.00	559.00	0.00	474.85	265.64	160.43	163.63	446.72	449.02	597.36	25.00	164.00	25.00	3,330.65	13,019.35
Total Garbage Administration & Disp	36,241.94	1,502.99	502.33	979.43	794.42	666.79	1,244.71	868.11	883.40	1,192.69	965.06	1,261.92	1,338.48	12,200.33	24,041.61
432.5 Sewer (Liquid Distribution)															
411 Salaries & Wages (Net @ 25%)	$9,516.00	298.50	327.05	353.27	310.80	349.16	303.02	295.11	303.85	304.72	320.48	489.39	245.58	3,900.93	5,615.07
411.1 FICA (Employee)	$0.00	26.60	47.30	52.90	41.40	53.20	42.40	39.90	41.50	41.60	43.60	63.90	24.80	519.10	-519.10
412 OASI & Medicare (Employee)	$309.24	21.43	24.68	26.04	22.14	25.42	21.87	21.18	21.80	21.87	22.89	33.60	17.04	279.96	29.28
412.1 OASI & Medicare (Employer)	$418.73	29.02	33.41	35.26	29.98	34.42	29.62	28.64	29.53	29.61	31.00	45.48	23.05	379.02	39.71
413 Retirement (Both)	$597.97	34.74	40.13	42.56	35.10	44.17	39.84	36.55	37.68	37.80	36.64	58.41	23.78	467.40	130.57
414 Workers Compensation (%)	$550.00			-40.00							170.90			130.90	419.10
421 Insurance	$400.00									577.36		89.00		666.36	-266.36
422 Services & Fees	$200.00												560.00	560.00	-360.00
424 Rentals	$0.00													0.00	0.00
425 Repairs	$5,000.00									481.64	47.35	59.42		588.41	4,411.59
426 Supplies	$5,000.00	272.00	235.57			59.19		9.00	1,340.65	1,379.64	1,346.90	13.56	79.11	4,735.62	264.38
427 Travel	$250.00			208.65	185.59		81.40	33.30	16.65	94.81				620.40	-370.40
428 Utilities (Electricity)	$3,000.00	1,033.44	59.77	88.34	33.66	30.32	101.39	124.30	40.68	40.68	40.68	40.68	23.82	1,657.76	1,342.24
429 Other (Grant)	$500.00	2,789.49	162.53	312.00			12,220.00			20,630.00				36,114.02	-35,614.02
434 Machinery & Equipment	$2,000.00						14,990.00	1,671.40						16,661.40	-14,661.40
Total 432.5 Sewer (Liquid Discarge)	$27,741.94	4,505.22	930.44	1,079.02	658.67	595.88	27,829.54	2,259.38	1,832.34	23,639.73	2,060.44	893.44	997.18	67,281.28	-39,539.34
														55 06)	28
433.4 Water Distribution for Dupree															
425 Repairs & Maintenance	$8,000.00				3.98			52.78	312.50	38.09	38.09	38.09	38.09	521.62	7,478.38
426 Supplies	$15,000.00	1,701.32	254.71		449.81	460.09	72.08	124.81	669.46	9.30	3,456.30			7,197.88	7,802.12
429 Water Purchase (Tri-County Water)	$54,000.00	3,933.00	4,057.20	4,508.00	4,176.80	2,102.20	5,405.00	5,395.80	5,276.20	4,857.60	4,471.20	3,726.00	3,726.00	51,635.00	2,365.00
434 Machinery & Equipment	$0.00													0.00	0.00
Total Water Distribution	$77,000.00	5,634.32	4,311.91	4,508.00	4,630.59	2,562.29	5,477.08	5,573.39	6,258.16	4,904.99	7,965.59	3,764.09	3,764.09	59,354.50	17,645.50
433.5 Water Administration & General															
411 Salaries & Wages (Net)	$26,364.00	2,271.39		3,362.00	2,355.09	2,629.85	2,378.95	2,319.62	2,357.41	2,306.64	2,289.38	3,790.20	2,260.41	28,320.94	-1,956.94
[Note-Finance Officer @ 70%]														0.00	0.00
411.1 FICA (Employee)	$0.00	106.40	243.10	311.70	220.20	281.40	229.80	217.00	224.10	217.50	216.40	355.70	173.40	2,796.70	-2,796.70
412 OASI & Medicare (Employee)	$856.76	157.73	161.39	234.14	158.41	179.62	160.99	156.27	159.10	155.67	154.67	250.16	149.15	2,077.30	-1,220.54
412.1 OASI & Medicare (Employer)	$1,160.09	213.58	218.52	318.40	214.49	243.21	217.98	211.60	215.44	210.79	209.11	338.68	201.88	2,813.68	-1,653.59
413 Retirement (Both)	$1,581.86	285.30	287.91	258.02	140.40	176.69	159.37	146.21	150.70	151.21	146.56	233.64	95.14	2,231.15	-649.29
414 Workers Compensation (%)	$750.00	1,118.00		-40.00							683.61			1,761.61	-1,011.61
421 Insurance	$2,000.00									577.36		356.00		933.36	1,066.64
422 Service Fees	$3,000.00	15.16	40.23	13.00	28.30	28.37	28.37	28.30	28.16	33.16	28.30	25.37	28.37	325.09	2,674.91
424 Rentals	$0.00										2,000.00			2,000.00	-2,000.00
425 Repairs & Maintenance	$0.00					337.91	162.73	20.37	25.16	71.74	341.03			958.94	-958.94
426 Supplies	$1,500.00	672.10	395.91	326.15	1,198.52	832.44	3,562.02	1,993.39	244.20	2,724.30	163.60	364.29	668.92	13,145.84	-11,645.84
427 Travel	$200.00				67.13	74.21	60.49							201.83	-1.83
428 Utilities (Electricity & Telephone)	$5,000.00	236.20	59.35	362.82	364.97	193.91	112.79	121.59	196.55	176.36	208.87	216.35	121.91	2,371.67	2,628.33
429 Other	$1,000.00		280.35	5.00					370.00					655.35	344.65
429.1 Meter Refunds	$0.00							100.00	100.00					200.00	-200.00
434 Machinery & Equipment	$0.00	33.24												33.24	-33.24
434.1 Equipment Repairs	$0.00	659.74		538.10										1,197.84	-1,197.84
434.3 Equipment Supplies	$0.00	299.78												299.78	-299.78

17,281.28
- Grant
37,810.11

$12,220 posted + Sick

2013 Redonas Budget

REVENUE REPORT

Revenue Budget	Approved	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Revenue	Budget
City of Dupree, SD 57623	2013 Budget	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	to Date	Balance
General Revenue Sources															
311 City Real Estate Taxes	$38,200.00	835.24	5,283.67	2,881.53	1,326.12	11,000.13	4,277.48	11.28	66.71		291.60	12,553.03	3,633.77	42,160.56	-$3,960.56
313 City Sales Tax	$50,500.00	13,406.35	4,703.43	3,587.08	4,702.25	4,793.89	4,667.90	4,945.01	4,596.73	2,368.94	8,397.00	2,389.36	6,941.13	65,499.07	-$14,999.07
315 Amusement Tax (Fireworks & etc.)	$100.00						100.00		72.00					172.00	-$72.00
319 Interest & Penalties (Delinq. Taxes)	$500.00	57.86	644.70	32.30	5.06	20.32		0.18	1.00		9.68	45.53	106.35	922.78	-$422.78
335 State Shared Revenue															
5.1 Bank Franchise Tax	$0.00		7,387.62											7,387.62	-$7,387.62
335.2 Motor Vehicle Comm. Pro-Rate	$3,500.00		1,460.01						2,977.49					4,437.50	-$937.50
335.3 State Liquor Tax Reversion	$10,000.00	653.18			800.64				616.21		724.58			2,794.61	$7,205.39
335.4 City Motor Vehicle Licenses	$8,000.00	351.90	922.70	1,071.89	836.01	386.27	1,192.86	1,395.88	607.30	408.57	561.54	1,011.01	531.82	9,275.75	-$1,275.75
335.8 Highway & Bridge Fund	$6,000.00	3,391.85				6,063.47		3,222.00			5,178.55			17,855.87	-$11,855.87
338 County Shared Tax															
338.1 25 % County Road Tax	$0.00							173.39						173.39	-$173.39
340 City Charges (Services)	$100.00							40.00					600.00	640.00	-$540.00
361 City Investment Earnings (M Mkt.)	$500.00	183.74		166.16	92.93	103.83	35.86	234.63	102.78	91.72	94.34	88.10	159.91	1,354.00	-$854.00
362 City Rentals	$1,200.00													0.00	$1,200.00
363 Other (Grant Sources)															
363.1 Grant # 3 - USDA RD - Motor Grader	$0.00									50,000.00				50,000.00	-$50,000.00
368 City Liquor 5% Agreement	$0.00	333.75	1,695.73	448.77	1,004.82	935.61	1,282.28	569.87	1,255.67	1,004.09	663.48	858.97	1,214.92	11,267.96	-$11,267.96
369.9 Other	$0.00	358.92							10.00					368.92	-$368.92
390 Outside Sources -															
1 General / Unencumbered Monies	$0.00						1,418.83	82.00				156.57		1,657.40	-$1,657.40
3 Encumbered / Borrowed Monies	$0.00								50,000.00					50,000.00	-$50,000.00
General Revenue	$118,600.00	19,572.79	22,097.86	8,187.73	8,767.83	23,303.52	12,975.21	10,672.24	60,305.89	53,873.32	15,920.77	17,102.37	13,187.90	265,967.43	-$147,367.43
Water Revenue															
1 Metered & Bulk Water Sales $0.87 / cwt.	$126,000.00	9,823.57	12,873.23	10,259.80	10,790.60	12,728.77	9,202.83	13,044.14	13,927.52	13,427.93	10,907.93	11,721.01	10,043.50	138,750.83	-$12,750.83
3 Sales of Supplies & Materials	$0.00							21.04			230.00			251.04	-$251.04
4 Surcharge for Grant Repayment $1.35	$0.00	20.31	246.24	250.34	266.56	282.53	227.50	282.20	234.85	318.64	232.65	206.98	270.90	2,839.70	$0.00
7 Late Fees	$0.00	213.76	394.81	250.69	288.61	317.65	195.92	327.81	398.14	389.60	351.29	348.20	276.11	3,752.59	$0.00
8 Grant # 1 - Water Line Improvement	$5,000.00				24,151.00			11,680.00		34,225.00	122,148.00	44,978.00	100,886.00	338,068.00	-$333,068.00
9 Meter Deposits & Connect Fees	$2,500.00		100.00	100.00	300.00	300.00	100.00		300.00	200.00	100.00	400.00	1,100.00	3,000.00	-$500.00
Water Revenue	$133,500.00	10,057.64	13,614.28	10,860.83	35,796.77	13,628.95	9,726.25	25,355.19	14,860.51	48,561.17	133,969.87	57,654.19	112,576.51	486,662.16	-$353,162.16
ewer Revenue															
3 Sewer Rate - $15.00	$36,700.00	2,385.48	2,898.44	2,726.46	3,017.69	4,761.32	3,960.07	4,789.06	3,847.17	3,320.40	2,554.10	2,809.46	3,611.42	37,069.65	$36,700.00
6 Surcharge for Grant Repayment $10.55										2,307.43	1,774.91	1,952.37	2,509.60	6,034.71	
8 Grant # 2 - Sewer Line, Lift, & Lagoon	$0.00													0.00	$0.00
383.9 Other Sources & Connect Fees	$0.00				100.00						100.00			200.00	$0.00
al Sewer Revenue	$36,700.00	2,385.48	2,898.44	2,726.46	3,117.69	4,761.32	3,960.07	4,789.06	3,847.17	5,627.83	4,429.01	4,761.83	6,121.02	43,304.36	$36,700.00
Lids or Garbage Revenue															
3 Solid Waste / Garbage Collection $10.00	$34,800.00	1,873.92	1,331.45	1,854.74	1,502.38	1,591.96	1,467.59	2,127.52	1,225.50	1,684.26	1,274.13	1,382.40	1,824.25	19,340.10	$15,459.90
1 Garbage Collection Sales Tax $0.50	$0.00	80.76	72.41	87.44	68.58	63.15	57.84	62.12	53.18	68.07	48.92	58.32	78.92	799.71	-$799.71
8 Dumpster Rentals $38.10	$0.00	152.40	1,066.80	1,143.00	1,257.30	1,295.40	1,025.76	808.76	914.40	1,485.90	1,028.70	1,143.00	1,333.50	12,654.92	-$12,654.92
5 Dumpster Rental Sales Tax $1.90	$0.00	7.60	53.20	57.00	62.70	64.60	51.00	66.50	45.60	74.10	51.30	57.00	66.50	657.10	-$657.10
Other Sources	$0.00													0.00	$0.00
1 Grant Sources	$0.00													0.00	$0.00
id Waste/Garbage Revenue	$34,800.00	$2,114.68	$2,723.86	$3,142.18	$2,890.96	$3,015.11	$2,602.19	$3,064.90	$2,238.68	$3,312.33	$2,403.05	$2,640.72	$3,303.17	33,451.83	$1,348.17
venue From All Sources	$323,600.00	$34,130.59	$41,334.44	$24,917.20	$50,573.25	$44,708.90	$29,263.72	$43,881.39	$81,252.25	$111,374.65	$156,722.70	$82,159.11	$135,188.60	700,318.29	-$462,481.42

EXPENSE REPORT

Total Sanitary Administration	$10,673.43	497.16	422.55	536.22	975.65	539.03	1,502.76	1,766.58	754.73	538.80	711.03	1,021.67	1,690.24	$10,946.42	-$272.99
Garbage Collection & Disposal															
abor & Part Time Help	$0.00	800.00	400.00	400.00	500.00	417.00		400.00	350.00					$3,267.00	-$3,267.00
421 Insurance	$1,100.00								308.70					$308.70	$791.30
424 Rentals	$0.00													$0.00	$0.00
epairs & Maintenance	$1,000.00	210.87												$210.87	$789.13
ollection Supplies	$2,500.00			411.25	50.00									$461.25	$2,038.75
andfill Charges (Disposal)	$6,500.00	20.00	20.00	20.00	25.00	1,107.90	20.00	1,136.25	622.70	1,064.75	733.40	20.00	1,245.65	$6,035.65	$464.35
ther	$250.00													$0.00	$250.00
lachinery & Equipment	$2,000.00													$0.00	$2,000.00
Total Sanitation, Collection & Disposal	$13,350.00	1,030.87	420.00	831.25	575.00	1,524.90	20.00	1,536.25	1,281.40	1,064.75	733.40	20.00	1,245.65	$10,283.47	$3,066.53
Total Sanitation, Administration & Disposal	24,023.43	1,528.03	842.55	1,367.47	1,550.65	2,063.93	1,522.76	3,302.83	2,036.13	1,603.55	1,444.43	1,041.67	2,935.89	$21,229.89	$2,793.54
432.5 Sewer (Administration & Distribution)															
411 Salaries & Wages (Nat 6@ 10%)	$5,326.00		235.22	252.72	252.72	236.08	426.18	567.08	416.88	251.57	271.33	283.67	277.20	$3,470.63	$1,855.37
411.1 FICA (Employee)	$0.00		1.26	3.40	3.40	3.40	26.50	29.38	16.70	5.40	8.00	10.20	8.90	$116.46	-$116.46
412 OASI & Medicare (Employee)	$407.43		20.40	21.21	21.21	21.22	39.01	39.82	35.53	22.70	24.74	26.03	25.34	$295.21	$112.22
412.1 OASI & Medicare (Employer)	$0.00		20.40	21.21	21.21	21.22	39.01	39.82	35.53	22.70	24.74	26.03	25.34	$295.21	-$295.21
413 Retirement (Both)	$240.00					33.28	36.32	38.95	36.92	35.71	38.31	40.84	39.76	$300.79	-$60.79
414 Workers Compensation (%)	$800.00			5.31							74.50			$79.81	$720.19
420 Labor & Part Time Help	$0.00														
421 Insurance	$400.00								308.69					$308.69	$91.31
422 Services & Fees	$200.00								525.00					$525.00	-$325.00
ewer Surcharge - Wastewater Grant Repayment	$0.00														
ntals	$0.00													$0.00	$0.00
pairs	$5,000.00				3.20								2,192.86	$2,196.06	$2,803.94
pplies	$5,000.00		5,269.25		372.20	40.97	135.00	2,556.64	43.50					$8,417.65	-$3,417.65
ucation, Conferencing, & Travel	$250.00								10.00					$10.00	$240.00
ilities (Electricity)	$1,800.00	28.89	28.89	28.89	28.89	28.89	28.89	28.89	28.89	28.89	28.89	28.89	132.18	$449.97	$1,350.03
ber - Waste Water Improvement - Grant	$500.00						3,013.31							$3,013.31	-$2,513.31
achinery & Equipment	$2,000.00													$0.00	$2,000.00
Sewage Collection & Disposal	$21,923.43	28.89	5,575.42	332.74	702.91	385.86	3,744.42	3,300.50	1,453.64	366.97	479.99	415.66	2,707.58	$19,478.79	$2,444.64
ater															
Water Distribution for Duprie															
pairs & Maintenance	$8,000.00	28.09	38.09	38.09		28.09	41.90		41.90	41.90			41.90	41.90	$361.86	$7,638.14
pplies	$15,000.00				367.12		715.72	856.45		1,031.63				$2,990.92	$12,009.08
ter Purchase (Tri-County Water)	$58,000.00	3,726.00	5,883.40	3,785.80	4,121.60	5,046.20	5,423.40	6,624.00	4,768.60	5,713.20	5,878.80	3,873.20	4,434.40	$59,298.60	-$1,298.60
achinery & Equipment	$0.00													$0.00	$0.00
Water Distribution	$81,000.00	3,764.89	5,921.49	3,823.89	4,488.72	5,074.29	6,181.02	7,480.45	4,810.50	6,786.73	5,878.80	3,915.10	4,476.30	$62,351.38	$18,648.62
33.5 Water Administration & General															
11 Salaries & Wages (Nat)	$37,684.00	1,212.82	2,165.16	2,235.16	2,235.16	2,168.60	2,929.04	3,492.63	2,891.83	2,230.56	2,309.52	2,359.00	2,353.12	$28,562.59	$9,121.41
(Non-Finance Officer @ 70%)														$0.00	
ICA (Employee)	$0.00	80.08	73.63	82.20	82.20	82.20	174.60	185.80	135.40	90.20	100.60	109.40	104.20	$1,300.51	-$1,300.51
SI & Medicare (Employee)	$2,882.81	107.10	188.70	191.96	191.96	191.97	263.14	266.38	241.23	198.16	206.08	211.24	208.49	$2,466.41	$416.40
ASI & Medicare (Employer)	$0.00	107.10	188.70	191.96	191.96	191.97	263.14	266.38	241.23	198.16	206.08	211.24	208.49	$2,466.41	-$2,466.41
irement (Both)	$960.00						233.42	146.08	135.80	147.70	142.84	155.26	163.36	159.84	$1,203.20	-$243.20
rkers Compensation (%)	$1,050.00			22.42								582.70			$605.12	$444.88
or & Part Time Help	$0.00			82.50											$82.50	-$82.50
rance	$2,000.00								1,234.77						$1,234.77	$765.23
vice Fees	$1,000.00	24.29	24.29	23.56	24.29	704.29	24.61	24.24	404.24	375.99	29.05	200.29	24.24	$1,883.38	-$883.38
ter Surcharge - Water Imp. Grant Repayment															
ntals	$0.00													$0.00	$0.00
airs & Maintenance	$0.00				274.28		29.61						2,101.35	$2,396.24	-$2,396.24
plies	$1,500.00	85.06	36.70	405.94	616.57	208.91	89.96	2,253.66	1,730.24	1,287.80	127.71	57.10	1,670.50	$7,470.05	-$5,970.05
cation, Conferencing, & Travel	$200.00							180.80	10.00					$190.80	$9.20
ilities (Electricity & Telephone)	$2,500.00	235.63	251.09	221.58	234.19	215.05	212.64	214.57	207.16	208.43	298.08	245.22	256.91	$2,780.55	-$280.55
Other - Water Line Improvement Proj. Grant	$1,000.00					23,720.00		11,680.00		34,325.00	122,148.00	44,923.60	100,886.00	$337,682.60	-$336,682.60
9.1 Meter Refunds	$0.00							100.00	290.27					$390.27	-$390.27

REVENUE REPORT 2014

Revenue Budget		Approved	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Revenue	Budget
	City of Dupree, SD 57623	2014 Budget	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	to Date	Balance
101-)	City Tax Revenue Sources -															
311	City Real Estate Taxes	$39,500.00	950.32	1,824.05	3,770.33	5,352.91	8,175.85	894.50		187.07					21,155.03	$18,344.97
313	City Sales Tax	$56,400.00	4,710.40	2,249.65	3,583.41	3,211.72	3,496.42	2,386.29	5,404.69	3,574.40					28,616.98	$27,783.02
315	Amusement Tax (Fireworks & etc.)	$100.00						100.00	84.00						184.00	-$84.00
319	Interest & Penalties (Delinq. Taxes)	$600.00	45.54	22.54	1.45			26.29		2.89					98.71	$501.29
335	State Shared Revenue Sources -															
5.1	Bank Franchise Tax	$0.00		37,088.19											37,088.19	-$37,088.19
335.2	Motor Vehicle Comm. Pro-Rate	$3,500.00		1,777.40						2,982.47					4,759.87	-$1,259.87
335.3	State Liquor Tax Reversion	$3,000.00		895.59		656.43			651.26						2,203.28	$796.72
335.4	City Motor Vehicle Licenses	$9,500.00	796.95	1,111.22	1,195.48	993.00	652.16	1,024.58	1,006.76	1,230.41					8,010.56	$1,489.44
335.8	Highway & Bridge Fund	$9,000.00	4,024.95				7,136.67		3,402.40						14,564.02	-$5,564.02
338	City Service Revenue Sources -															
338.1	25 % County Road Tax	$0.00								173.39					173.39	-$173.39
340	City Charges (Services)	$100.00	40.00			200.00		3,100.00		5.00					3,345.00	-$3,245.00
361	City Investment Earnings (M Mkt.)	$1,000.00	198.71	97.51	170.41	117.72	105.85	157.60							847.80	$152.20
362	City Rentals	$0.00	320.00	320.00	320.00	320.00	320.00	320.00	320.00	320.00					2,560.00	-$2,560.00
363	Other Revenue - (Grant Sources)															
363.1	Grant # 3 - Dept. of Health - Mosquito	$0.00							3,181.00						3,181.00	-$3,181.00
368	City Liquor 5% Agreement	$9,000.00	454.92	1,042.25	1,027.03	339.38	901.15	872.42	997.19	777.79					6,412.13	$2,587.87
369.9	Other	$0.00	316.00						100.00						416.00	-$416.00
390	Outside Revenue Sources -															
.1	General / Unencumbered Monies - NSF	$0.00				460.52		161.00	100.00						721.52	-$721.52
.3	Encumbered / Borrowed Monies	$0.00														$0.00
	General Revenue	$131,700.00	$11,857.79	$46,428.40	$10,068.11	$11,651.68	$20,788.10	$9,042.68	$15,247.30	$9,253.42	$0.00	$0.00	$0.00	$0.00	134,337.48	-$2,637.48
	Water Revenue															
1	Metered & Bulk Water Sales $0.87 / cwt.	$126,000.00	10,994.49	11,558.47	11,360.34	11,796.15	11,783.69	11,048.03	13,107.62	13,531.55					95,180.34	$30,819.66
3	Sales of Supplies & Materials	$0.00						375.00							375.00	-$375.00
4	Surcharge for Grant Repayment $1.35	$3,050.00	285.77	267.41	249.26	280.37	283.82	261.66	288.33	262.43					2,179.05	$3,050.00
7	Late Fees	$0.00	386.59	369.81	333.35	349.04	393.01	336.32	402.80	490.04					3,060.96	$0.00
8	Grant # 1 - Water Line Improvement	$5,000.00	3,783.00			28,466.00	27,181.00	69,684.00							129,114.00	-$124,114.00
9	Meter Deposits & Connect Fees	$2,000.00	100.00			200.00	200.00	500.00	200.00	200.00					1,400.00	$600.00
	Water Revenue	$136,050.00	$15,549.85	$12,195.69	$11,942.95	$41,091.56	$39,841.52	$82,205.01	$13,998.75	$14,484.02	$0.00	$0.00	$0.00	$0.00	231,309.35	-$95,259.35
	Sewer Revenue															
3	Sewer Rate - $15.00	$41,500.00	3,180.65	2,969.31	2,969.89	3,086.39	3,076.46	2,906.96	3,295.35	2,900.98					24,385.99	$41,500.00
5	Surcharge for Grant Repayment $10.55	$0.00	2,210.28	2,063.42	2,063.80	2,144.18	2,137.87	2,020.09	2,125.06	2,015.95					16,780.65	
8	Grant # 2 - Sewer Line, Lift, & Lagoon	$850,000.00	56,201.00	7,568.00				25,765.00							89,534.00	$850,000.00
83.9	Other Sources & Connect Fees	$0.00	484.69					200.00	100.00						784.69	$0.00
	Sewer Revenue	$891,500.00	$62,076.62	$12,600.73	$5,033.69	$5,230.57	$5,214.33	$30,892.05	$5,520.41	$4,916.93	$0.00	$0.00	$0.00	$0.00	131,485.33	$891,500.00
	Solids or Garbage Revenue															
	Solid Waste / Garbage Collection $10.00	$19,500.00	1,541.38	1,335.32	1,547.52	1,492.85	1,428.01	1,385.63	1,439.67	1,378.59					11,548.97	$7,951.03
	Garbage Collection Sales Tax $0.50	$850.00	68.54	54.35	67.11	66.70	64.55	54.39	61.27	57.85					494.76	$355.24
	Dumpster Rentals $38.10	$12,000.00	1,145.00	1,181.10	1,137.52	1,224.68	1,183.00	952.50	1,338.50	1,090.55					9,245.85	$2,754.15
	Dumpster Rental Sales Tax $1.90	$600.00	57.00	58.90	56.62	60.80	58.90	47.50	66.50	54.38					460.60	$139.40
	Other Sources	$0.00														$0.00
	Grant Sources	$0.00														$0.00
	Solid Waste/Garbage Revenue	$32,950.00	$2,809.92	$2,629.67	$2,808.77	$2,845.03	$2,734.46	$2,440.02	$2,900.94	$2,581.37	$0.00	$0.00	$0.00	$0.00	21,750.18	$11,199.82
	Revenue From All Sources	$1,192,200.00	$92,294.18	$73,854.49	$29,853.52	$60,818.84	$68,578.41	$124,579.76	$37,667.40	$31,235.74	$0.00	$0.00	$0.00	$0.00	518,882.34	$804,862.99

EXPENSE REPORT

...ral Sanitary Administration	$10,236.88	560.06	630.93	564.91	720.73	727.63	1,596.72	1,027.40	832.02	0.00	0.00	0.00	0.00	6,650.40	$3,586.48
...arbage Collection & Disposal															
...oyer & Part Time Help	$5,750.00	400.00	400.00	350.00	500.00	300.00	50.00	100.00	150.00					2,250.00	$5,750.00
...surance	$1,250.00													0.00	$1,250.00
24 Rentals	$0.00													0.00	$0.00
25 Repairs & Maintenance	$1,000.00													0.00	$1,000.00
...lection Supplies	$1,200.00		94.29											94.29	$1,105.71
...sposal Charges (Disposal)	$8,150.00	497.55	475.00	578.05	731.70	614.10	556.68	635.75	829.55					4,918.10	$3,231.90
...ense	$250.00													0.00	$250.00
...achinery & Equipment	$1,000.00													0.00	$1,000.00
...ewer Sanitation, Collection & Disposal	$18,600.00	$897.55	$969.29	$928.05	$1,231.70	$914.10	$606.60	$735.75	$979.55	$0.00	$0.00	$0.00	$0.00	7,262.59	$11,337.61
...ital Sanitation, Administration & Disposal	$28,836.88	$1,457.61	$1,600.22	$1,492.96	$1,952.43	$1,641.73	$2,203.32	$1,763.15	$1,811.57	$0.00	$0.00	$0.00	$0.00	13,912.79	$14,924.09
42.5 Sewer (Administration & Distribution)															
41 Salaries & Wages (Net @ 10%)	$4,621.46	243.16	260.82	257.47	302.02	372.15	439.34	539.36	348.62					2,743.15	$1,879.31
42 FICA (Employee)	$118.50	3.80	4.20	3.70	22.99	28.50	27.20	35.40	16.30					138.09	-$19.59
42 OASI & Medicare (Employee)	$477.96	21.87	23.65	23.71	52.61	34.29	40.53	48.05	32.05					276.46	$201.50
42.1 OASI & Medicare (Employer)	$477.96	21.87	23.65	23.71	52.61	34.29	40.53	48.05	32.05					276.46	$201.50
43 Retirement (Both)	$500.00	34.32	37.11	36.57	43.65	44.94	45.38	50.41	43.98					336.56	$163.44
44 Workers Compensation (%)	$500.00			-41.29										-41.29	$541.29
50 Labor & Part Time Help	$700.00													0.00	$700.00
51 Insurance	$700.00													0.00	$700.00
52 Services & Fees - Legal - NSF Checks	$200.00			4,980.00					4,525.06					9,505.06	-$9,305.06
54 Sewer Surcharge - Wastewater Grant Repayment	$0.00													0.00	$0.00
...ds	$0.00													0.00	$0.00
...ies	$5,000.00							2,000.00						2,000.00	$3,000.00
...lies	$5,000.00		94.29	43.72	131.64	224.05			36.75					530.45	$4,469.55
...ation, Conferencing, & Travel	$500.00		205.97		44.30									350.27	$149.73
...es (Electricity)	$500.00	129.13	118.85	112.01	96.92	79.58	27.25	28.89	28.89					623.50	-$123.50
...- Sewer Grant	$500.00	60,595.00	1,835.00			23,930.00								86,360.00	-$86,860.00
...inery & Equipment	$1,000.00													0.00	$1,000.00
...age Collection & Discarge	$20,796.88	61,049.13	2,785.55	5,440.80	748.74	24,740.00	620.43	2,730.36	5,063.70	0.00	0.00	0.00	0.00	103,098.71	-$82,301.83
...er Distribution for Dupree															
...n & Maintenance	$5,000.00	41.90	41.90	41.90	41.90	46.08	46.08	2,046.08	46.08					2,351.92	$2,648.08
...es	$5,000.00		94.29	75.91	243.09			2,752.22						3,165.51	$1,834.49
...Purchase (Tri-County Water)	$67,500.00	10,745.60	4,321.80	4,333.20	4,623.00	4,997.20	5,202.56	5,980.00	5,073.80					45,477.16	$22,022.84
...inery & Equipment	$0.00													0.00	$0.00
...er Distribution	$77,500.00	10,787.50	4,657.99	4,451.01	4,907.99	5,043.28	5,248.64	10,778.30	5,119.88	0.00	0.00	0.00	0.00	50,994.59	$26,505.41
...er Administration & General															
Salaries & Wages (Net)	$17,731.56	2,232.92	2,286.82	2,256.58	2,434.78	2,715.28	2,984.06	3,304.93	2,621.17					20,836.54	-$3,104.98
...-Finance Officer @ 78%]															
...(Employee)	$1,297.20	86.60	113.00	127.80	289.86	187.00	213.80	246.60	170.20					1,434.86	-$137.66
...Medicare (Employee)	$2,528.76	197.83	204.94	203.57	419.10	247.86	272.45	302.55	238.51					2,086.81	$441.95
...& Medicare (Employer)	$2,528.76	197.83	204.94	203.57	419.10	247.86	272.45	302.55	238.51					2,086.81	$441.95
...ent (Both)	$1,800.00	137.28	148.44	146.29	174.61	179.76	182.24	201.65	175.90					1,346.27	$453.73
...s Compensation (%)	$500.00			-169.32										-169.32	$669.32
...bor & Part Time Help	$2,350.00													0.00	$2,350.00
...ce	$1,500.00													0.00	$1,500.00
...Fees - Legal - NSF Checks	$1,000.00	35.48	24.37	74.72	29.33	173.13	291.40	28.38	319.24					926.06	$73.92
...charge - Water Imp. Grant Repayment	$0.00								1,047.61					1,047.61	-$1,047.61
...ds	$0.00													0.00	$0.00
...& Maintenance	$1,000.00	484.69						897.96						1,382.65	-$382.65
...s	$1,500.00	413.76	168.60	69.82	46.98	34.00	290.59	484.00	276.34					2,083.52	-$583.52
...on, Conferencing, & Travel	$100.00		186.20		44.25									230.45	-$130.45
...(Electricity & Telephone)	$2,500.00	251.29	229.83	233.39	234.53	275.47	273.34	264.45	255.72					2,015.22	$484.78
...ter - Water Grant	$1,000.00	1,782.50			28,466.76	138,266.59								170,515.85	-$169,515.85
...Meter Refunds	$200.00					118.29								118.29	$81.71

Loan Amortization Calculator

Almost any data field on this form may be calculated. Enter the appropriate numbers in each slot, leaving blank (or zero) the value that you wish to determine, and then click "Calculate" to update the page.

Principal	Payments per Year
240000.00	4
Annual Interest Rate	**Number of Regular Payments**
3.2500	120
Balloon Payment	**Payment Amount**
	3138.49

☑ Show Amortization Schedule

Calculate

= 12,553.96 /yr
1,255.40
13,809.36 ÷12 month
1,150.78 /month ÷206 wks
5.59 or 5.60 /week

This loan calculator is written and maintained by Bret Whissel.
See Bret's Blog for help, a spreadsheet, derivations, calculator news, and more information.

Summary

Principal borrowed:	$240,000.00	**Annual Payments:**	4
Regular Payment amount:	$3,138.49	**Total Payments:**	120 (30.00 years)
Final Balloon Payment:	$0.00	**Annual interest rate:**	3.25%
Interest-only payment:	$1,950.00	**Periodic interest rate:**	0.8125%
***Total Repaid:**	$376,618.80	**Debt Service Constant:**	5.2308%
***Total Interest Paid:**	$136,618.80	***Total interest paid as a percentage of Principal:**	56.925%

**These results are estimates which do not account for accumulated error of payments being rounded to the nearest cent. See the amortization schedule for more accurate values.*

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
1	1,188.49	1,950.00	1,188.49	1,950.00	238,811.51
2	1,198.15	1,940.34	2,386.64	3,890.34	237,613.36
3	1,207.88	1,930.61	3,594.52	5,820.95	236,405.48
4	1,217.70	1,920.79	4,812.22	7,741.74	235,187.78
5	1,227.59	1,910.90	6,039.81	9,652.64	233,960.19
6	1,237.56	1,900.93	7,277.37	11,553.57	232,722.63
7	1,247.62	1,890.87	8,524.99	13,444.44	231,475.01
8	1,257.76	1,880.73	9,782.75	15,325.17	230,217.25
9	1,267.97	1,870.52	11,050.72	17,195.69	228,949.28
10	1,278.28	1,860.21	12,329.00	19,055.90	227,671.00
11	1,288.66	1,849.83	13,617.66	20,905.73	226,382.34
12	1,299.13	1,839.36	14,916.79	22,745.09	225,083.21
13	1,309.69	1,828.80	16,226.48	24,573.89	223,773.52
14	1,320.33	1,818.16	17,546.81	26,392.05	222,453.19
15	1,331.06	1,807.43	18,877.87	28,199.48	221,122.13
16	1,341.87	1,796.62	20,219.74	29,996.10	219,780.26
17	1,352.78	1,785.71	21,572.52	31,781.81	218,427.48
18	1,363.77	1,774.72	22,936.29	33,556.53	217,063.71
19	1,374.85	1,763.64	24,311.14	35,320.17	215,688.86
20	1,386.02	1,752.47	25,697.16	37,072.64	214,302.84
21	1,397.28	1,741.21	27,094.44	38,813.85	212,905.56
22	1,408.63	1,729.86	28,503.07	40,543.71	211,496.93
23	1,420.08	1,718.41	29,923.15	42,262.12	210,076.85
24	1,431.62	1,706.87	31,354.77	43,968.99	208,645.23
25	1,443.25	1,695.24	32,798.02	45,664.23	207,201.98
26	1,454.97	1,683.52	34,252.99	47,347.75	205,747.01
27	1,466.80	1,671.69	35,719.79	49,019.44	204,280.21
28	1,478.71	1,659.78	37,198.50	50,679.22	202,801.50
29	1,490.73	1,647.76	38,689.23	52,326.98	201,310.77
30	1,502.84	1,635.65	40,192.07	53,962.63	199,807.93
31	1,515.05	1,623.44	41,707.12	55,586.07	198,292.88
32	1,527.36	1,611.13	43,234.48	57,197.20	196,765.52
33	1,539.77	1,598.72	44,774.25	58,795.92	195,225.75
34	1,552.28	1,586.21	46,326.53	60,382.13	193,673.47
35	1,564.89	1,573.60	47,891.42	61,955.73	192,108.58
36	**1,577.61**	**1,560.88**	**49,469.03**	**63,516.61**	**190,530.97**
37	1,590.43	1,548.06	51,059.46	65,064.67	188,940.54
38	1,603.35	1,535.14	52,662.81	66,599.81	187,337.19
39	1,616.38	1,522.11	54,279.19	68,121.92	185,720.81
40	1,629.51	1,508.98	55,908.70	69,630.90	184,091.30
41	1,642.75	1,495.74	57,551.45	71,126.64	182,448.55
42	1,656.10	1,482.39	59,207.55	72,609.03	180,792.45
43	1,669.55	1,468.94	60,877.10	74,077.97	179,122.90
44	1,683.12	1,455.37	62,560.22	75,533.34	177,439.78
45	1,696.79	1,441.70	64,257.01	76,975.04	175,742.99
46	1,710.58	1,427.91	65,967.59	78,402.95	174,032.41
47	1,724.48	1,414.01	67,692.07	79,816.96	172,307.93
48	1,738.49	1,400.00	69,430.56	81,216.96	170,569.44

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
49	1,752.61	1,385.88	71,183.17	82,602.84	168,816.83
50	1,766.85	1,371.64	72,950.02	83,974.48	167,049.98
51	1,781.21	1,357.28	74,731.23	85,331.76	165,268.77
52	1,795.68	1,342.81	76,526.91	86,674.57	163,473.09
53	1,810.27	1,328.22	78,337.18	88,002.79	161,662.82
54	1,824.98	1,313.51	80,162.16	89,316.30	159,837.84
55	1,839.81	1,298.68	82,001.97	90,614.98	157,998.03
56	1,854.76	1,283.73	83,856.73	91,898.71	156,143.27
57	1,869.83	1,268.66	85,726.56	93,167.37	154,273.44
58	1,885.02	1,253.47	87,611.58	94,420.84	152,388.42
59	1,900.33	1,238.16	89,511.91	95,659.00	150,488.09
60	1,915.77	1,222.72	91,427.68	96,881.72	148,572.32
61	1,931.34	1,207.15	93,359.02	98,088.87	146,640.98
62	1,947.03	1,191.46	95,306.05	99,280.33	144,693.95
63	1,962.85	1,175.64	97,268.90	100,455.97	142,731.10
64	1,978.80	1,159.69	99,247.70	101,615.66	140,752.30
65	1,994.88	1,143.61	101,242.58	102,759.27	138,757.42
66	2,011.09	1,127.40	103,253.67	103,886.67	136,746.33
67	2,027.43	1,111.06	105,281.10	104,997.73	134,718.90
68	2,043.90	1,094.59	107,325.00	106,092.32	132,675.00
69	2,060.51	1,077.98	109,385.51	107,170.30	130,614.49
70	2,077.25	1,061.24	111,462.76	108,231.54	128,537.24
71	2,094.12	1,044.37	113,556.88	109,275.91	126,443.12
72	2,111.14	1,027.35	115,668.02	110,303.26	124,331.98
73	2,128.29	1,010.20	117,796.31	111,313.46	122,203.69
74	2,145.59	992.90	119,941.90	112,306.36	120,058.10
75	2,163.02	975.47	122,104.92	113,281.83	117,895.08
76	2,180.59	957.90	124,285.51	114,239.73	115,714.49
77	2,198.31	940.18	126,483.82	115,179.91	113,516.18
78	2,216.17	922.32	128,699.99	116,102.23	111,300.01
79	2,234.18	904.31	130,934.17	117,006.54	109,065.83
80	2,252.33	886.16	133,186.50	117,892.70	106,813.50
81	2,270.63	867.86	135,457.13	118,760.56	104,542.87
82	2,289.08	849.41	137,746.21	119,609.97	102,253.79
83	2,307.68	830.81	140,053.89	120,440.78	99,946.11
84	2,326.43	812.06	142,380.32	121,252.84	97,619.68
85	2,345.33	793.16	144,725.65	122,046.00	95,274.35
86	2,364.39	774.10	147,090.04	122,820.10	92,909.96
87	2,383.60	754.89	149,473.64	123,574.99	90,526.36
88	2,402.96	735.53	151,876.60	124,310.52	88,123.40
89	2,422.49	716.00	154,299.09	125,026.52	85,700.91
90	2,442.17	696.32	156,741.26	125,722.84	83,258.74
91	2,462.01	676.48	159,203.27	126,399.32	80,796.73
92	2,482.02	656.47	161,685.29	127,055.79	78,314.71
93	2,502.18	636.31	164,187.47	127,692.10	75,812.53
94	2,522.51	615.98	166,709.98	128,308.08	73,290.02
95	2,543.01	595.48	169,252.99	128,903.56	70,747.01
96	2,563.67	574.82	171,816.66	129,478.38	68,183.34

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
97	2,584.50	553.99	174,401.16	130,032.37	65,598.84
98	2,605.50	532.99	177,006.66	130,565.36	62,993.34
99	2,626.67	511.82	179,633.33	131,077.18	60,366.67
100	2,648.01	490.48	182,281.34	131,567.66	57,718.66
101	2,669.53	468.96	184,950.87	132,036.62	55,049.13
102	2,691.22	447.27	187,642.09	132,483.89	52,357.91
103	2,713.08	425.41	190,355.17	132,909.30	49,644.83
104	2,735.13	403.36	193,090.30	133,312.66	46,909.70
105	2,757.35	381.14	195,847.65	133,693.80	44,152.35
106	2,779.75	358.74	198,627.40	134,052.54	41,372.60
107	2,802.34	336.15	201,429.74	134,388.69	38,570.26
108	2,825.11	313.38	204,254.85	134,702.07	35,745.15
109	2,848.06	290.43	207,102.91	134,992.50	32,897.09
110	2,871.20	267.29	209,974.11	135,259.79	30,025.89
111	2,894.53	243.96	212,868.64	135,503.75	27,131.36
112	2,918.05	220.44	215,786.69	135,724.19	24,213.31
113	2,941.76	196.73	218,728.45	135,920.92	21,271.55
114	2,965.66	172.83	221,694.11	136,093.75	18,305.89
115	2,989.75	148.74	224,683.86	136,242.49	15,316.14
116	3,014.05	124.44	227,697.91	136,366.93	12,302.09
117	3,038.54	99.95	230,736.45	136,466.88	9,263.55
118	3,063.22	75.27	233,799.67	136,542.15	6,200.33
119	3,088.11	50.38	236,887.78	136,592.53	3,112.22
120	*3,112.22	25.29	240,000.00	136,617.82	0.00

*The final payment has been adjusted to account for payments having been rounded to the nearest cent.

Loan Amortization Calculator

Almost any data field on this form may be calculated. Enter the appropriate numbers in each slot, leaving blank (or zero) the value that you wish to determine, and then click "Calculate" to update the page.

Principal	Payments per Year
100000.00	4
Annual Interest Rate	**Number of Regular Payments**
3.2500	120
Balloon Payment	**Payment Amount**
	1307.70

x4 = 5,230.80 year x 10%
523.08
5,753.88 ÷ 12 months
479.49 ÷ 206 loans
2.33 / loan/month.

☑ Show Amortization Schedule

Calculate

This loan calculator is written and maintained by Bret Whissel.
See Bret's Blog for help, a spreadsheet, derivations, calculator news, and more information.

Summary

Principal borrowed:	$100,000.00	**Annual Payments:**	4
Regular Payment amount:	$1,307.70	**Total Payments:**	120 (30.00 years)
Final Balloon Payment:	$0.00	**Annual interest rate:**	3.25%
Interest-only payment:	$812.50	**Periodic interest rate:**	0.8125%
***Total Repaid:**	$156,924.00	**Debt Service Constant:**	5.2308%
***Total Interest Paid:**	$56,924.00	***Total interest paid as a percentage of Principal:**	56.924%

**These results are estimates which do not account for accumulated error of payments being rounded to the nearest cent. See the amortization schedule for more accurate values.*

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
1	495.20	812.50	495.20	812.50	99,504.80
2	499.22	808.48	994.42	1,620.98	99,005.58
3	503.28	804.42	1,497.70	2,425.40	98,502.30
4	507.37	800.33	2,005.07	3,225.73	97,994.93
5	511.49	796.21	2,516.56	4,021.94	97,483.44
6	515.65	792.05	3,032.21	4,813.99	96,967.79
7	519.84	787.86	3,552.05	5,601.85	96,447.95
8	524.06	783.64	4,076.11	6,385.49	95,923.89
9	528.32	779.38	4,604.43	7,164.87	95,395.57
10	532.61	775.09	5,137.04	7,939.96	94,862.96
11	536.94	770.76	5,673.98	8,710.72	94,326.02
12	541.30	766.40	6,215.28	9,477.12	93,784.72
13	545.70	762.00	6,760.98	10,239.12	93,239.02
14	550.13	757.57	7,311.11	10,996.69	92,688.89
15	554.60	753.10	7,865.71	11,749.79	92,134.29
16	559.11	748.59	8,424.82	12,498.38	91,575.18
17	563.65	744.05	8,988.47	13,242.43	91,011.53
18	568.23	739.47	9,556.70	13,981.90	90,443.30
19	572.85	734.85	10,129.55	14,716.75	89,870.45
20	577.50	730.20	10,707.05	15,446.95	89,292.95
21	582.19	725.51	11,289.24	16,172.46	88,710.76
22	586.93	720.77	11,876.17	16,893.23	88,123.83
23	591.69	716.01	12,467.86	17,609.24	87,532.14
24	596.50	711.20	13,064.36	18,320.44	86,935.64
25	601.35	706.35	13,665.71	19,026.79	86,334.29
26	606.23	701.47	14,271.94	19,728.26	85,728.06
27	611.16	696.54	14,883.10	20,424.80	85,116.90
28	616.13	691.57	15,499.23	21,116.37	84,500.77
29	621.13	686.57	16,120.36	21,802.94	83,879.64
30	626.18	681.52	16,746.54	22,484.46	83,253.46
31	631.27	676.43	17,377.81	23,160.89	82,622.19
32	636.39	671.31	18,014.20	23,832.20	81,985.80
33	641.57	666.13	18,655.77	24,498.33	81,344.23
34	646.78	660.92	19,302.55	25,159.25	80,697.45
35	652.03	655.67	19,954.58	25,814.92	80,045.42
36	**657.33**	**650.37**	**20,611.91**	**26,465.29**	**79,388.09**
37	662.67	645.03	21,274.58	27,110.32	78,725.42
38	668.06	639.64	21,942.64	27,749.96	78,057.36
39	673.48	634.22	22,616.12	28,384.18	77,383.88
40	678.96	628.74	23,295.08	29,012.92	76,704.92
41	684.47	623.23	23,979.55	29,636.15	76,020.45
42	690.03	617.67	24,669.58	30,253.82	75,330.42
43	695.64	612.06	25,365.22	30,865.88	74,634.78
44	701.29	606.41	26,066.51	31,472.29	73,933.49
45	706.99	600.71	26,773.50	32,073.00	73,226.50
46	712.73	594.97	27,486.23	32,667.97	72,513.77
47	718.53	589.17	28,204.76	33,257.14	71,795.24
48	724.36	583.34	28,929.12	33,840.48	71,070.88

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
49	730.25	577.45	29,659.37	34,417.93	70,340.63
50	736.18	571.52	30,395.55	34,989.45	69,604.45
51	742.16	565.54	31,137.71	35,554.99	68,862.29
52	748.19	559.51	31,885.90	36,114.50	68,114.10
53	754.27	553.43	32,640.17	36,667.93	67,359.83
54	760.40	547.30	33,400.57	37,215.23	66,599.43
55	766.58	541.12	34,167.15	37,756.35	65,832.85
56	772.81	534.89	34,939.96	38,291.24	65,060.04
57	779.09	528.61	35,719.05	38,819.85	64,280.95
58	785.42	522.28	36,504.47	39,342.13	63,495.53
59	791.80	515.90	37,296.27	39,858.03	62,703.73
60	798.23	509.47	38,094.50	40,367.50	61,905.50
61	804.72	502.98	38,899.22	40,870.48	61,100.78
62	811.26	496.44	39,710.48	41,366.92	60,289.52
63	817.85	489.85	40,528.33	41,856.77	59,471.67
64	824.49	483.21	41,352.82	42,339.98	58,647.18
65	831.19	476.51	42,184.01	42,816.49	57,815.99
66	837.95	469.75	43,021.96	43,286.24	56,978.04
67	844.75	462.95	43,866.71	43,749.19	56,133.29
68	851.62	456.08	44,718.33	44,205.27	55,281.67
69	858.54	449.16	45,576.87	44,654.43	54,423.13
70	865.51	442.19	46,442.38	45,096.62	53,557.62
71	872.54	435.16	47,314.92	45,531.78	52,685.08
72	879.63	428.07	48,194.55	45,959.85	51,805.45
73	886.78	420.92	49,081.33	46,380.77	50,918.67
74	893.99	413.71	49,975.32	46,794.48	50,024.68
75	901.25	406.45	50,876.57	47,200.93	49,123.43
76	908.57	399.13	51,785.14	47,600.06	48,214.86
77	915.95	391.75	52,701.09	47,991.81	47,298.91
78	923.40	384.30	53,624.49	48,376.11	46,375.51
79	930.90	376.80	54,555.39	48,752.91	45,444.61
80	938.46	369.24	55,493.85	49,122.15	44,506.15
81	946.09	361.61	56,439.94	49,483.76	43,560.06
82	953.77	353.93	57,393.71	49,837.69	42,606.29
83	961.52	346.18	58,355.23	50,183.87	41,644.77
84	969.34	338.36	59,324.57	50,522.23	40,675.43
85	977.21	330.49	60,301.78	50,852.72	39,698.22
86	985.15	322.55	61,286.93	51,175.27	38,713.07
87	993.16	314.54	62,280.09	51,489.81	37,719.91
88	1,001.23	306.47	63,281.32	51,796.28	36,718.68
89	1,009.36	298.34	64,290.68	52,094.62	35,709.32
90	1,017.56	290.14	65,308.24	52,384.76	34,691.76
91	1,025.83	281.87	66,334.07	52,666.63	33,665.93
92	1,034.16	273.54	67,368.23	52,940.17	32,631.77
93	1,042.57	265.13	68,410.80	53,205.30	31,589.20
94	1,051.04	256.66	69,461.84	53,461.96	30,538.16
95	1,059.58	248.12	70,521.42	53,710.08	29,478.58
96	1,068.19	239.51	71,589.61	53,949.59	28,410.39

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
97	1,076.87	230.83	72,666.48	54,180.42	27,333.52
98	1,085.62	222.08	73,752.10	54,402.50	26,247.90
99	1,094.44	213.26	74,846.54	54,615.76	25,153.46
100	1,103.33	204.37	75,949.87	54,820.13	24,050.13
101	1,112.29	195.41	77,062.16	55,015.54	22,937.84
102	1,121.33	186.37	78,183.49	55,201.91	21,816.51
103	1,130.44	177.26	79,313.93	55,379.17	20,686.07
104	1,139.63	168.07	80,453.56	55,547.24	19,546.44
105	1,148.89	158.81	81,602.45	55,706.05	18,397.55
106	1,158.22	149.48	82,760.67	55,855.53	17,239.33
107	1,167.63	140.07	83,928.30	55,995.60	16,071.70
108	1,177.12	130.58	85,105.42	56,126.18	14,894.58
109	1,186.68	121.02	86,292.10	56,247.20	13,707.90
110	1,196.32	111.38	87,488.42	56,358.58	12,511.58
111	1,206.04	101.66	88,694.46	56,460.24	11,305.54
112	1,215.84	91.86	89,910.30	56,552.10	10,089.70
113	1,225.72	81.98	91,136.02	56,634.08	8,863.98
114	1,235.68	72.02	92,371.70	56,706.10	7,628.30
115	1,245.72	61.98	93,617.42	56,768.08	6,382.58
116	1,255.84	51.86	94,873.26	56,819.94	5,126.74
117	1,266.05	41.65	96,139.31	56,861.59	3,860.69
118	1,276.33	31.37	97,415.64	56,892.96	2,584.36
119	1,286.70	21.00	98,702.34	56,913.96	1,297.66
120	*1,297.66	10.54	100,000.00	56,924.50	0.00

*The final payment has been adjusted to account for payments having been rounded to the nearest cent.

Loan Amortization Calculator

Almost any data field on this form may be calculated. Enter the appropriate numbers in each slot, leaving blank (or zero) the value that you wish to determine, and then click "Calculate" to update the page.

Principal	Payments per Year
450000.00	4
Annual Interest Rate	**Number of Regular Payments**
3.2500	120
Balloon Payment	**Payment Amount**
	5884.66

☑ Show Amortization Schedule

Calculate

This loan calculator is written and maintained by Bret Whissel.
See Bret's Blog for help, a spreadsheet, derivations, calculator news, and more information.

Summary

Principal borrowed:	$450,000.00	**Annual Payments:**	4
Regular Payment amount:	$5,884.66	**Total Payments:**	120 (30.00 years)
Final Balloon Payment:	$0.00	**Annual interest rate:**	3.25%
Interest-only payment:	$3,656.25	**Periodic interest rate:**	0.8125%
***Total Repaid:**	$706,159.20	**Debt Service Constant:**	5.2308%
***Total Interest Paid:**	$256,159.20	***Total interest paid as a percentage of Principal:**	56.924%

**These results are estimates which do not account for accumulated error of payments being rounded to the nearest cent. See the amortization schedule for more accurate values.*

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
1	2,228.41	3,656.25	2,228.41	3,656.25	447,771.59
2	2,246.52	3,638.14	4,474.93	7,294.39	445,525.07
3	2,264.77	3,619.89	6,739.70	10,914.28	443,260.30
4	2,283.17	3,601.49	9,022.87	14,515.77	440,977.13
5	2,301.72	3,582.94	11,324.59	18,098.71	438,675.41
6	2,320.42	3,564.24	13,645.01	21,662.95	436,354.99
7	2,339.28	3,545.38	15,984.29	25,208.33	434,015.71
8	2,358.28	3,526.38	18,342.57	28,734.71	431,657.43
9	2,377.44	3,507.22	20,720.01	32,241.93	429,279.99
10	2,396.76	3,487.90	23,116.77	35,729.83	426,883.23
11	2,416.23	3,468.43	25,533.00	39,198.26	424,467.00
12	2,435.87	3,448.79	27,968.87	42,647.05	422,031.13
13	2,455.66	3,429.00	30,424.53	46,076.05	419,575.47
14	2,475.61	3,409.05	32,900.14	49,485.10	417,099.86
15	2,495.72	3,388.94	35,395.86	52,874.04	414,604.14
16	2,516.00	3,368.66	37,911.86	56,242.70	412,088.14
17	2,536.44	3,348.22	40,448.30	59,590.92	409,551.70
18	2,557.05	3,327.61	43,005.35	62,918.53	406,994.65
19	2,577.83	3,306.83	45,583.18	66,225.36	404,416.82
20	2,598.77	3,285.89	48,181.95	69,511.25	401,818.05
21	2,619.89	3,264.77	50,801.84	72,776.02	399,198.16
22	2,641.17	3,243.49	53,443.01	76,019.51	396,556.99
23	2,662.63	3,222.03	56,105.64	79,241.54	393,894.36
24	2,684.27	3,200.39	58,789.91	82,441.93	391,210.09
25	2,706.08	3,178.58	61,495.99	85,620.51	388,504.01
26	2,728.06	3,156.60	64,224.05	88,777.11	385,775.95
27	2,750.23	3,134.43	66,974.28	91,911.54	383,025.72
28	2,772.58	3,112.08	69,746.86	95,023.62	380,253.14
29	2,795.10	3,089.56	72,541.96	98,113.18	377,458.04
30	2,817.81	3,066.85	75,359.77	101,180.03	374,640.23
31	2,840.71	3,043.95	78,200.48	104,223.98	371,799.52
32	2,863.79	3,020.87	81,064.27	107,244.85	368,935.73
33	2,887.06	2,997.60	83,951.33	110,242.45	366,048.67
34	2,910.51	2,974.15	86,861.84	113,216.60	363,138.16
35	2,934.16	2,950.50	89,796.00	116,167.10	360,204.00
36	**2,958.00**	**2,926.66**	**92,754.00**	**119,093.76**	**357,246.00**
37	2,982.04	2,902.62	95,736.04	121,996.38	354,263.96
38	3,006.27	2,878.39	98,742.31	124,874.77	351,257.69
39	3,030.69	2,853.97	101,773.00	127,728.74	348,227.00
40	3,055.32	2,829.34	104,828.32	130,558.08	345,171.68
41	3,080.14	2,804.52	107,908.46	133,362.60	342,091.54
42	3,105.17	2,779.49	111,013.63	136,142.09	338,986.37
43	3,130.40	2,754.26	114,144.03	138,896.35	335,855.97
44	3,155.83	2,728.83	117,299.86	141,625.18	332,700.14
45	3,181.47	2,703.19	120,481.33	144,328.37	329,518.67
46	3,207.32	2,677.34	123,688.65	147,005.71	326,311.35
47	3,233.38	2,651.28	126,922.03	149,656.99	323,077.97
48	3,259.65	2,625.01	130,181.68	152,282.00	319,818.32

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
49	3,286.14	2,598.52	133,467.82	154,880.52	316,532.18
50	3,312.84	2,571.82	136,780.66	157,452.34	313,219.34
51	3,339.75	2,544.91	140,120.41	159,997.25	309,879.59
52	3,366.89	2,517.77	143,487.30	162,515.02	306,512.70
53	3,394.24	2,490.42	146,881.54	165,005.44	303,118.46
54	3,421.82	2,462.84	150,303.36	167,468.28	299,696.64
55	3,449.62	2,435.04	153,752.98	169,903.32	296,247.02
56	3,477.65	2,407.01	157,230.63	172,310.33	292,769.37
57	3,505.91	2,378.75	160,736.54	174,689.08	289,263.46
58	3,534.39	2,350.27	164,270.93	177,039.35	285,729.07
59	3,563.11	2,321.55	167,834.04	179,360.90	282,165.96
60	3,592.06	2,292.60	171,426.10	181,653.50	278,573.90
61	3,621.25	2,263.41	175,047.35	183,916.91	274,952.65
62	3,650.67	2,233.99	178,698.02	186,150.90	271,301.98
63	3,680.33	2,204.33	182,378.35	188,355.23	267,621.65
64	3,710.23	2,174.43	186,088.58	190,529.66	263,911.42
65	3,740.38	2,144.28	189,828.96	192,673.94	260,171.04
66	3,770.77	2,113.89	193,599.73	194,787.83	256,400.27
67	3,801.41	2,083.25	197,401.14	196,871.08	252,598.86
68	3,832.29	2,052.37	201,233.43	198,923.45	248,766.57
69	3,863.43	2,021.23	205,096.86	200,944.68	244,903.14
70	3,894.82	1,989.84	208,991.68	202,934.52	241,008.32
71	3,926.47	1,958.19	212,918.15	204,892.71	237,081.85
72	3,958.37	1,926.29	216,876.52	206,819.00	233,123.48
73	3,990.53	1,894.13	220,867.05	208,713.13	229,132.95
74	4,022.95	1,861.71	224,890.00	210,574.84	225,110.00
75	4,055.64	1,829.02	228,945.64	212,403.86	221,054.36
76	4,088.59	1,796.07	233,034.23	214,199.93	216,965.77
77	4,121.81	1,762.85	237,156.04	215,962.78	212,843.96
78	4,155.30	1,729.36	241,311.34	217,692.14	208,688.66
79	4,189.06	1,695.60	245,500.40	219,387.74	204,499.60
80	4,223.10	1,661.56	249,723.50	221,049.30	200,276.50
81	4,257.41	1,627.25	253,980.91	222,676.55	196,019.09
82	4,292.00	1,592.66	258,272.91	224,269.21	191,727.09
83	4,326.88	1,557.78	262,599.79	225,826.99	187,400.21
84	4,362.03	1,522.63	266,961.82	227,349.62	183,038.18
85	4,397.47	1,487.19	271,359.29	228,836.81	178,640.71
86	4,433.20	1,451.46	275,792.49	230,288.27	174,207.51
87	4,469.22	1,415.44	280,261.71	231,703.71	169,738.29
88	4,505.54	1,379.12	284,767.25	233,082.83	165,232.75
89	4,542.14	1,342.52	289,309.39	234,425.35	160,690.61
90	4,579.05	1,305.61	293,888.44	235,730.96	156,111.56
91	4,616.25	1,268.41	298,504.69	236,999.37	151,495.31
92	4,653.76	1,230.90	303,158.45	238,230.27	146,841.55
93	4,691.57	1,193.09	307,850.02	239,423.36	142,149.98
94	4,729.69	1,154.97	312,579.71	240,578.33	137,420.29
95	4,768.12	1,116.54	317,347.83	241,694.87	132,652.17
96	4,806.86	1,077.80	322,154.69	242,772.67	127,845.31

Pmt	Principal	Interest	Cum Prin	Cum Int	Prin Bal
97	4,845.92	1,038.74	327,000.61	243,811.41	122,999.39
98	4,885.29	999.37	331,885.90	244,810.78	118,114.10
99	4,924.98	959.68	336,810.88	245,770.46	113,189.12
100	4,965.00	919.66	341,775.88	246,690.12	108,224.12
101	5,005.34	879.32	346,781.22	247,569.44	103,218.78
102	5,046.01	838.65	351,827.23	248,408.09	98,172.77
103	5,087.01	797.65	356,914.24	249,205.74	93,085.76
104	5,128.34	756.32	362,042.58	249,962.06	87,957.42
105	5,170.01	714.65	367,212.59	250,676.71	82,787.41
106	5,212.01	672.65	372,424.60	251,349.36	77,575.40
107	5,254.36	630.30	377,678.96	251,979.66	72,321.04
108	5,297.05	587.61	382,976.01	252,567.27	67,023.99
109	5,340.09	544.57	388,316.10	253,111.84	61,683.90
110	5,383.48	501.18	393,699.58	253,613.02	56,300.42
111	5,427.22	457.44	399,126.80	254,070.46	50,873.20
112	5,471.32	413.34	404,598.12	254,483.80	45,401.88
113	5,515.77	368.89	410,113.89	254,852.69	39,886.11
114	5,560.59	324.07	415,674.48	255,176.76	34,325.52
115	5,605.77	278.89	421,280.25	255,455.65	28,719.75
116	5,651.31	233.35	426,931.56	255,689.00	23,068.44
117	5,697.23	187.43	432,628.79	255,876.43	17,371.21
118	5,743.52	141.14	438,372.31	256,017.57	11,627.69
119	5,790.19	94.47	444,162.50	256,112.04	5,837.50
120	*5,837.50	47.43	450,000.00	256,159.47	0.00

*The final payment has been adjusted to account for payments having been rounded to the nearest cent.

RESOLUTION NO. 031813-1

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 Dupree has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to treatment pond and lift stations improvement along with necessary appurtenances, plus cleaning and televising lines; 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 $850,000 to the South Dakota Board of Water and Natural Resources for the Project.

2. The Mayor of the City of Dupree 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 of the City of Dupree 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 Dupree City Council, Dupree, South Dakota, this 18th day of March, 2013.

APPROVED:

Raymond J. Lenk, Mayor
City of Dupree

(Seal)

Attest: _____
City Finance Officer

Dupree City Council
Special Council Meeting
March 18, 2013

The Special Meeting of the City Council met on March 18, 2013 at the Dupree City Office. The Special Meeting was called to order by Mayor Lenk at 6:50 PM with the following present: Mayor Raymond Lenk, Aldermen Larry In Woods, Josh De La Rosa, Una Lee Howe, Sandy Lemke, Mary Lu Griffith, and Arlene Martin. Visitors present included the following; Marlene Knutson, Grant Writer for the Central South Dakota Enhancement District located in Pierre, Chancey Shrake, Civil Construction Engineer with Brosz Engineering in Pierre, Council Candidates Sam Owen and Greg O'Connell, News Paper Editor, Robert Slocum, with the Isabel Dakota, Bernita In The Woods, and Jim Veit.

Employees Present: Finance Officer Maurice Lemke

Alderman Griffith moved to approve the agenda after additions concerning resolutions, a bookkeeping correction, maintenance comments, and bonding endorsements. Alderman De La Rosa seconded the motion and the motion carried.

Alderman Lemke moved that the Council adjourn at 7:10 pm as a City Council and reconvene as a Board of Equalization. Alderman Martin seconded the motion, and the motion carried. The meeting was turned over to Mike Burgee, Ziebach County Assessor. Tax evaluation on properties and those properties that were exempt were reviewed. Questions concerning the new grocery store to be built this summer were raised as to tax issues. The issue will remain to be seen following construction. Mayor Lenk explained the fact that the city is now roughly 75% Native with 52% tax exempt properties. Real Estate taxes comprise roughly $38,000 of the expected $341,000 in Revenue or some 11% of the revenues. The city Sales Tax will generate some expected $50,000 or another 14% of the revenue. The balance of the revenue has to come from utilities, special county and state taxes along with possible grants. Alderman De La Rosa moved to accept the evaluations as presented, seconded by Alderman Griffith and carried.

Alderman Griffith moved that the Council adjourn as a Board of Equalization and reconvene as a City Council at 7:15 pm for the intended Public Hearing on both the wastewater project and the proposed funding requests. Alderman Martin seconded the motion and the motion carried.

Mayor Lenk opened the discussion on the requested publicized Public Hearing for the proposed need for the Waste Water Improvement Project. He also explained the need for the requested Community Development Block Grant (CDBG) Funding request for this Project. The floor was given to Marlene Knutson and Chancey Shrake to explain the project, the expected cost of the project, and the proposed funding for the project. They explained the `good faith effort' that the City of Dupree needs to do for a commitment to this project. They were in reference to the fact that our sewer rates were at $15.00 and when put in comparison with the state average at $22.00 per household. They discussed the project in segments and as a whole in reference to State funding through the CDBG in cooperation with the Federal funding through Housing and Urban Development.

Dupree's share of this funding would definitely include a City Surcharge of $8 on the conservative side to possibly $18.00 on the high side which would be beyond our current $15.00 rate or $23.00 plus possibly doubling our current rate on sewer. Bernita discussed the possibilities of tribal funding in the fact of the high percentage of Native households. She was in reference to TECA funding.

After the discussions on costs, funding, time frames and a new prioritizing of interests in which waste water discharge was placed in the second position of community needs following water. Alderman Howe moved to accept the changes in the priority of needs, seconded by De La Rosa and carried. Marlene and Chancey suggested the approval of resolutions with an effort to meet Stage I of the funding process of which include the applications. The application for funding needs to be presented before the April 1st deadline for 2013.

Mayor Lenk wrapped up the discussions as to the Hearing conversations and turned the direction toward the resolutions of which he read.

Alderman De la Rosa moved that Resolution No. 031813-1 be approved, seconded by Alderman Lemke and carried.

RESOLUTION NO. 031813-1

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 Dupree has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to treatment pond and lift stations improvement along with necessary appurtenances, plus cleaning and televising lines; and,

WHERAS, 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 $830,000.00 to the South Dakota Board of Water and Natural Resources for the project.

2. The Mayor of the City of Dupree 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 of the City of Dupree 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.

   This resolution was adopted at the Dupree City Council, Dupree, South Dakota, this 18th day of March, 2013.

Alderman Griffith moved that Resolution No. 031813-2 be approved, seconded by Alderman De La Rosa and carried.

RESOLUTION NO. 031813-2

WHEREAS, the City of Dupree expects to be the recipient of a Community Development Block Grant from US Department of Housing and Urban Development as administered by the State of South Dakota to undertake Wastewater System Improvement Project; and,

WHEREAS, the City of Dupree is required to designate a certified officer for the purpose of signing required documents pertaining to this grant; and,

NOW, THEREFORE BE IT RESOLVED, that the Mayor of the City of Dupree, be hereby designated as the City's official for the purpose of signing the CDBG grant agreements, contracts, correspondence, pay requests, and other required documents; and,

WHEREAS, the City of Dupree is required to designate an environmental certified officer for the purpose of signing required environmental documents pertaining to this grant; and,

NOW, THEREFORE, BE IT RESOLVED, that the Mayor of the City of Dupree 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 upon passage at the City Council Meeting in Dupree, South Dakota on the evening of March 18, 2013.

Alderman Howe moved that Resolution No. 031813-3 be adopted, seconded by Alderman Lemke and carried.

RESOLUTION NO. 031813-3

WHEREAS, the City of Dupree has identified the need for wastewater system improvements; and,

WHEREAS, the City of Dupree proposes to undertake a wastewater lagoon, lift station other necessary appurtenances improvement project; and,

WHEREAS, the City of Dupree is eligible for Federal assistance for the proposed project; and,

WHEREAS, the City of Dupree has held the required public hearing on Monday, March 18, 2013, at 7:15 pm; and,

WHEREAS, with the submission of the CDBG application the City of Dupree assures and certifies that all CDBG program requirements will be fulfilled; and,

THEREFORE, BE IT RESOLVED that the City of Dupree duly authorizes the Mayor of Dupree to sign and submit the CDBG application requesting up to $427,450.00 of funds.

This resolution is effective immediately upon passage. Adopted this 18th day of March, 2013.

Discussion was raised as to the status of the new water tower. At the present time, this project is being tabled because of the improvements by Tri-County Water in which there may not even be a need for a tower or for storage in the fact that the supply of water will be larger than the need for water.

Mayor Lenk called for a closing of the Hearings at 8:20 pm and returns to a City Council for the concluding agenda items; by a motion from Alderman Howe and a seconded from Alderman Martin and carried.

Mayor Lenk asked for approval of the Annual Report. Alderman Lemke moved that it be approved and published as require. Alderman Howe seconded the motion and it carried.

Mayor Lenk commented on some maintenance issues since the Regular Meeting. He reported on the lift station and the fact that Jesse has cleaned the facility including the outside grate. Jesse has worked with some of the valves of which are now functional. The water break in front of the Warcloud residence was repaired by Pete and Colt Veit.

Mayor Lenk discussed the voiding of check # 5818 and the bookkeeping correction that is needed. Alderman Lemke moved and Alderman De la Rosa seconded to approve the following adjustment to the 2012 Sewer Expense within the 2012 Budget. Check # 5818 was written to Brosz Engineering in the amount of $12,220.00 in June and was voided. The check was erroneously posted as an expense to the 2012 Sewer Expense Budget. This motion will correct the posting error. Motion carried.

Mayor Lenk announced that he has registered Jesse for Wastewater Training and Certification in Huron on April 16, 17, and 18 at the Crossroads Convention Center.

Mayor Lenk asked that the Council endorse the Bonding forms that have been prepared by Deb Mathews of the Meierhenry & Sargent LLP Attorneys at Law Office in Sioux Falls. Their firm is representing the bonding interests of the water line project. The forms were so endorsed and attested to.

The next Regular Meeting will be Monday evening April 1, 2013 at 7:00 pm.

There being no further business at this time, Mayor Lenk called for adjournment. Alderman Martin moved that the Meeting adjourn at 8:55 pm, seconded by Alderman Griffith and carried.

CITY OF DUPREE

Mayor, Raymond J. Lenk

ATTEST

Finance Officer, Maurice Lemke

Dupree City
Waste Water Project Hearing
7:15 pm - 3-18-2013
Dupree City Hall, Dupree, SD

Name
Larry T. In Woods
Josh De La Rosa
[illegible]
Kay [illegible]
Maurice Lemke - Finance Officer
Sandra E Lemke
Mary Lu Griffith
Arlene Martin
Loretta In The Woods
Sam Lamb
Bob Slocum - Press
Greg O'Connell
[illegible]
Chauncey Shrake
[illegible]

Notice
of hearing on water project

Alderman Howe moved and Alderman Martin seconded a motion to publish "The Notice of Public Hearing" for the City of Dupree Wastewater Project in the local papers during the week of March 7, 2013. The motion carried.

NOTICE OF PUBLIC HEARING
FOR THE CITY OF DUPREE WASTE WATER PROJECT

The City of Dupree is seeking up to $850,000 of funding from the Board of Water and Natural Resources in order to undertake sanitary sewer system improvements including televising existing sanitary sewer pipe, lift station repair / rehabilitation, and lagoon improvements – shaping, installing riprap and replacing the security fence, etc. 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 3.25% for 30 years, and the Board of Water and Natural Resources may forgive all or apportion 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 Hearing Meeting. The purpose of the public meeting 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 Dupree City Hall, on Monday evening, March 18, 2013 at 7:15 PM MDT.

CITY OF DUPREE
/s/Mayor, Raymond J. Lenk
ATTEST
/s/Finance Officer, Maurice Lemke

Published 1 time at the total approximate cost of $18.07
-030713

Affidavit of Publication

STATE OF SOUTH DAKOTA,
COUNTY OF DEWEY, ss.

I, Franklin Gross, being first duly sworn, on oath says, that he is the bookkeeper of the WEST RIVER EAGLE, a weekly newspaper published in Eagle Butte, County of Dewey, and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies weekly, and has been published within said county for fifty-two successive weeks next prior to the publication of the notice herein mentioned; that the

Notice of hearing on water project

City of Dupree

a printed copy of which, taken from the paper in which 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 one successive weeks, on the day of each week on which said newspaper was regularly published to-wit:

March 7th, 2013

That the full amount of the fees for the publication of the annexed notice is $18.07

Fr[illegible]

Subscribed and sworn to before me this 15th day of March, 2013

Kelsey Majeske

Kelsey Majeske, Notary Public
State of South Dakota
My commission expires September 17th, 2018

KELSEY MAJESKE
SEAL NOTARY PUBLIC SEAL
SOUTH DAKOTA

AFFADAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA
COUNTY OF DEWEY

I, ROBERT L. SLOCUM, being first duty sworn under oath say: The ISABEL DAKOTAN is a 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 ROBERT L. SLOCUM in Isabel, in said county and state, and has been such legal, newspaper during the time as an employee or officer of said newspaper I have had personal knowledge of the facts stated in this affadavit: that the advertisement headed:

Hearing For Waste water project / COBG Hearing

A printed copy of which is hereto attached was printed and published in said newspaper for 1 successive weeks upon the following dates, to-wit:

3-7-13

That the full amount of fees charged for publishing the same to-wit: the sum of $15.54 / $16.65 (32.19) incurs solely to the benefit of the publishers of said newspaper; that no agreement or understanding of 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.

R. L. S.

Subscribed and sworn to before me this 18th day of March, 2013

(SEAL)

My commission expires 2/19, 2017

Notary

ISABEL DAKOTAN

City of Dupree: Notice of CDBG Public Hearing

Alderman Lemke moved and Alderman Howe seconded a motion to publish 'The Notice of CDBG Public Hearing' for the City of Dupree Waste Water System Improvement Project in the local news papers for publication during the week of March 7, 2013. The motion carried.

NOTICE OF CDBG PUBLIC HEARING

The City of Dupree expects to submit an application to the State of South Dakota for a Community Development Block Grant in order to assist with the financing for a Wastewater System Improvement Project. The City expects to apply for up to $427,450 from the CDBG Community Projects Account to be used for the proposed project which will cost approximately $850,000. A public hearing will be held at 7:15 PM MDT, Monday March 18, 2013, at City Hall, Dupree, South Dakota.

The purpose of the hearing is to receive comments regarding the application from members of the community and to assess the community development needs of the community, prioritize

City of Dupree: Notice of Public Hearing for Wastewater Project

Alderman Howe moved and Alderman Martin seconded a motion to publish 'The Notice of Public Hearing' for the City of Dupree Wastewater Project in the local papers during the week of March 7, 2013. The motion carried.

NOTICE OF PUBLIC HEARING FOR THE CITY OF DUPREE WASTEWATER PROJECT

The City of Dupree is seeking up to $850,000 of funding from the Board of Water and Natural Resources in order to undertake sanitary sewer system improvements including televising existing sanitary sewer pipe, lift station repair / rehabilitation, and lagoon improvements – shaping, installing riprap and replacing the security fence, etc. 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 3.25% for 30 years, and the Board of Water and Natural Resources may forgive all or [illegible] of the loan principal. [illegible] source of funds will [illegible]

City of Dupree: Notice of Public Hearing for Wastewater Project

Alderman Howe moved and Alderman Martin seconded a motion to publish 'The Notice of Public Hearing' for the City of Dupree Wastewater Project in the local papers during the week of March 7, 2013. The motion carried.

NOTICE OF PUBLIC HEARING FOR THE CITY OF DUPREE WASTEWATER PROJECT

The City of Dupree is seeking up to $850,000 of funding from the Board of Water and Natural Resources in order to undertake sanitary sewer system improvements including televising existing sanitary sewer pipe, lift station repair / rehabilitation, and lagoon improvements – shaping, installing riprap and replacing the security fence, etc. 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 3.25% for 30 years, and the Board of Water and Natural Resources may forgive all or apportion 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 Hearing Meeting. The purpose of the public meeting 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 Dupree City Hall, on Monday evening, March 18, 2013 at 7:15 PM MDT.

CITY OF DUPREE

Mayor, Raymond J. Lenk

ATTEST

Finance Officer, Maurice Lemke

Published 3-7-13 in the Isabel Dakotan at the total approximate cost of $16.65.

ISABEL DAKOTAN

MARCH 7, 2013

City of Dupree: Notice of CDBG Public Hearing

Alderman Lemke moved and Alderman Howe seconded a motion to publish 'The Notice of CDBG Public Hearing' for the City of Dupree Waste Water System Improvement Project in the local news papers for publication during the week of March7, 2013. The motion carried.

NOTICE OF CDBG PUBLIC HEARING

The City of Dupree expects to submit an application to the State of South Dakota for a Community Development Block Grant in order to assist with the financing for a Wastewater System Improvement Project. The City expects to apply for up to $427,450 from the CDBG Community Projects Account to be used for the proposed project which will cost approximately $850,000. A public hearing will be held at 7:15 PM MDT, Monday March 18, 2013, at City Hall, Dupree, South Dakota.

The purpose of the hearing is to receive comments regarding the application from members of the community and to assess the community development needs of the community, prioritize them, and identify the activities of the undertaking to meet the needs. The meeting is open to the public and interested persons are encouraged to attend. Disabled individuals wishing assistance should contact the City Fiancé Officer for information and/or special assistance. The request should be made 24 hours in advance of the meeting.

CITY OF DUPREE

Mayor, Raymond J. Lenk

ATTEST

Finance Officer, Maurice Lemke

Published 3-7-13 at the total approximate cost of $15.54.

Resolution NO. _070113-2__

A RESOLUTION AMENDING ORDINANCE #040113-1 AND CREATING NEW WASTEWATER/SEWER RATES FOR THE CITY OF DUPREE, ZIEBACH COUNTY, SOTUH DAKOTA

BE IT RESOLVEDD BY THE CITY OF DUPREE, ZIEBACH COUNTY, SOUTH DAKOTA THAT NEW SEWER RATES BE ESTABLISHED AS FOLLOWS:

Section 1: Effective with the August, 2013 bill, monthly wastewater/sewer rates shall be as follows: minimum charge is $15 for residential, businesses and, others for each sewer service connection.

Section 2: In addition to the fee identified in Section 1, each residence, business, and other users shall be charged a $10.55 monthly wastewater/sewer surcharge fee effective with the August, 2013 bill.

The above surcharge rate shall be reviewed and amended as needed to ensure that repayment and agreement conditions of the bonds issued for improvements financed via the Clean Water State Revolving Loan shall be met.

Future changes to wastewater rates in either Section 1 or Section 2 can be completed by Resolution of the Dupree Common Council.

Dated this 1st day of July, 2013.

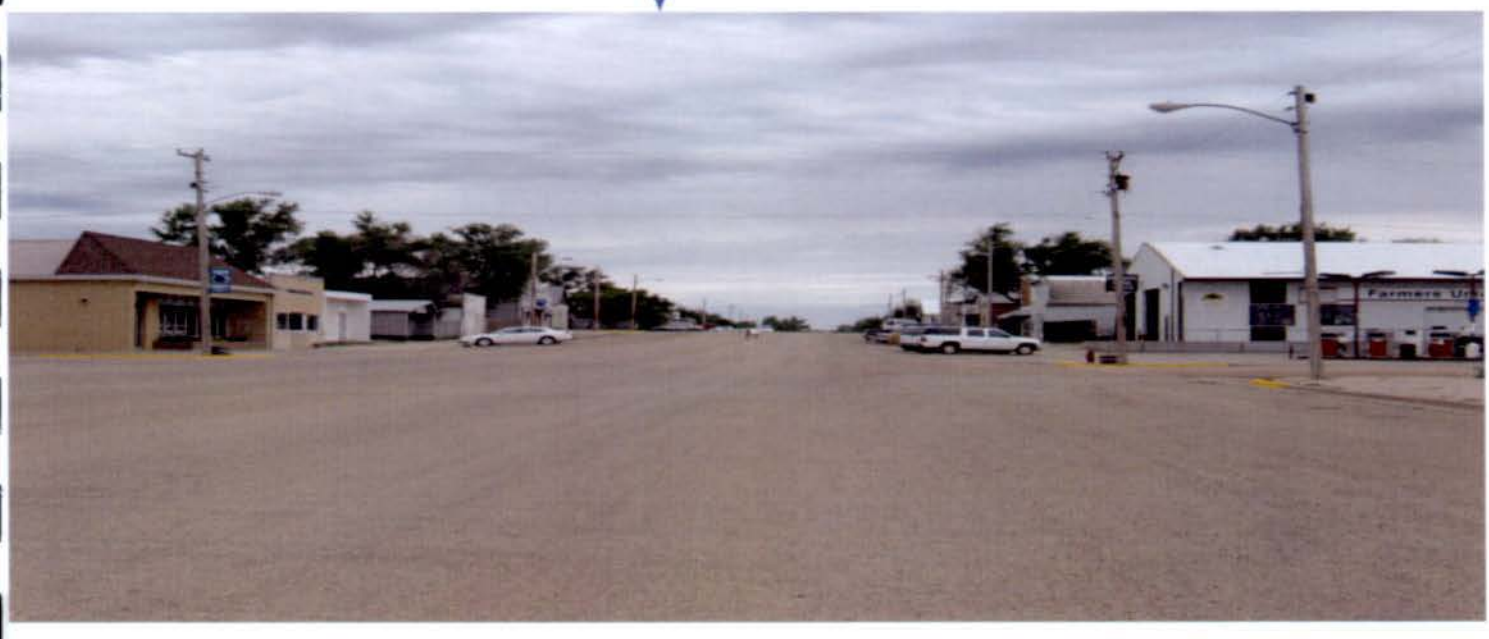
Ray Lenk, Mayor

Attest: Maurice Lemke, Finance Officer

Wastewater Facility Plan

City of Dupree
August 2012

Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING



Final Report

Wastewater System Facility Plan

Prepared for

City of Dupree, SD

August 2012

3030 Airport Road, Suite A, Pierre, SD 57501
Phone:(605) 224-1123; Fax (605) 224-0659

CITY OF DUPREE
WATSEWATER SYSTEMS FACILITY PLAN

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LIST OF TABLES

Chapter 1.0
INTRODUCTION

This chapter presents the need for this report and the objectives of the study. A list of abbreviations is also included to assist the reader in understanding the information provided.

1.1 PURPOSE

The City of Dupree (City) (Figure 1.1) operates its own wastewater infrastructure facilities, and services customers within its limits. Dupree wishes to perform an extensive evaluation of its facilities in order to determine the current status of the system and any upgrades or improvements that are needed for its system, both short and long term.

The community of Dupree has authorized Brosz Engineering, Inc. (BEI), to prepare a report, which will provide inventory and condition of the current wastewater system. Based on these assessments, alternatives and recommendations will be provided for updating the current system.

The recommended plan presented herein addresses the design, construction, and financing of alternatives to meet anticipated regulatory requirements, residential and commercial growth, and system reliability needs for the City of Dupree. Implementation of the recommended improvements will provide adequate and dependable wastewater service for existing and future customers. This report will serve as a tool in order for the City to make effective planning decisions.

1.2 SCOPE

The principal elements of this report include the following:

1. Analyze and inventory current wastewater collection and treatment systems. Deficiencies, as well as, satisfactory elements within the system, will be annotated within the report.
2. Investigate possible alternatives for wastewater system improvements.
3. Issue formal recommendations based on alternative analysis.

1.3 ACKNOWLEDGEMENTS

Brosz Engineering wishes to acknowledge and thank Ray Lenk and Jim Viet for their assistance and cooperation. Their cooperation and courtesy in obtaining a variety of necessary information was extremely valuable in completing and producing this report.

1.4 ABBREVIATIONS

AWWA	American Water Works Association
BEI	Brosz Engineering, Inc.
BMP	best management practice(s)
C	celsius

CDBG	community development block grant
cfs	cubic feet per second
CIP	capital improvement program
City	city of Dupree
CMOM	Capacity, Management, Operation, and Maintenance
CRST	Cheyenne River Sioux Tribe
CWFCP	consolidated water facilities construction program
CY	cubic yard
EA	each
EDA	Economic Development Administration
EPA	U.S. Environmental Protection Agency
ERP	Emergency Response Plan
EUAC	Equivalent Uniform Annual Cost
F	Fahrenheit
FEMA	Federal Emergency Management Agency
ft	feet; foot
ft^3/day	cubic feet per day
fps	feet per second
gal	gallons
GO	general assessment
GOED	Governor's Office of Economic Development
gpm	gallons per minute
gpd	gallons per day
gpcd	gallons per day per capita
HDPE	high-density polyethylene
hp	horsepower
HUD	Housing and Urban Development
I/I	Inflow and Infiltration
In	inches
IPS	iron pipe size
ISO	International Organization for Standardization
K	1000 of a unit
kWh	kilowatt-hour
LF	linear feet
LS	lump sum
MCC	motor control center
MG	million gallons
mgd	million gallons per day
mg/L	milligrams per liter
mL	milliliter
NA	Not Applicable; Not Available
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration
psi	pounds per square inch
PVC	polyvinyl chloride
RD	Rural Development
RUS	Rural Utility Service
SCADA	supervisory control and data acquisition
SD DENR	South Dakota Dep. of Environment and Natural Resources
sf	square feet
SHPO	State Historical Preservation Office

SWPPP	Storm Water Pollution Prevention Plan
UPC	Uniform Plumbing Code
USDA	United States Department of Agriculture
VCP	vitrified clay pipe

LOCATION MAP OF
DUPREE, SOUTH DAKOTA

ZIEBACH COUNTY

Figure 1.1 - Location Map of Dupree, SD

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Chapter 2.0
PLANNING AREA CHARACTERISTICS

This chapter presents introductory information regarding the community of Dupree, future population estimates, and all necessary environmental review information required to complete funding considerations by SD DENR and any other applicable funding agencies.

2.1 STUDY AREA

The City of Dupree is located in Ziebach County, approximately 20 miles west of the City of Eagle Butte and 22 miles east of the City of Faith. United States Highway 212 (US-212) borders the northern edge of the community. Dupree is the Ziebach County seat.

A city location map is shown on Figure 1.1, and a detailed city map is identified on Figure 2.1. The wastewater infrastructure necessary to service the entire community lies within City boundaries, except for the wastewater treatment facility. All City wastewater collection system items are located in NW ¼ of Section 30 and the SW ¼ of Section 31, T13N, R21E. The wastewater treatment facility is located in the NW ¼ of Section 29, T13N, R21E. The area to be served by the proposed improvements include the current city limits and areas estimated to be developed within the design period. All other areas are currently intended to remain rural and unincorporated.

2.2 DUPREE POPULATION STATISTICS

Dupree is a community with a population of 525, based on the 2010 US Census. The city's median age is 27.6, while the SD median age is 36.9. Data from the 2010 census states that Dupree has an average household size of 2.98 with a median household income is $22,656, which is considerably lower than the poverty threshold income level of $33,710.

The percentage of households within Dupree that fall below the poverty level is 53.2%. Comparatively, the state average household size is 2.42 with a median income of $46,369. Approximately 66.9% of the community is Native American, 29.3% is of Caucasian decent, and 3.4% is from two or more races.

2.3 HISTORICAL POPULATION AND FUTURE GROWTH

Population statistics shown in Table 2.1 were obtained from the US Census Bureau. The population of Dupree steadily decreased between 1960 and 2000 with two periods of increase, one being most recently. The population of Dupree is influenced greatly by local businesses and the surrounding agricultural community, which in turn, drive the local economy.

The status of these variables, in addition to the growth of industry and business opportunities in neighboring communities will be the primary factor(s) in the population forecast of the City. It is anticipated that the City will see periods of population flux during the design life of the proposed improvements detailed in Chapter 4.0. Although the population will probably not significantly change every year, the historical population has

been extrapolated to develop a conservative estimated population for the City in the years to come.

Table 2.1 – Dupree Historical and Projected Populations

Year	*Population*
1960	548
1970	523
1980	562
1990	484
2000	434
2010	525
2020	**545***
2030	**560***
2040	**570***

(*) Denotes population forecast estimate

2.4 Soil / Geology / Topography / Climate

There are three main classifications of soil types within the City and the proposed improvement project area(s). These series, as determined by the Natural Resources Conservation Service Soil Survey of Ziebach County are the Regent silty clay loam association (55%), Ridgeview silty clay loam association (30%), and the Reeder-Lantry complex (7%). Detailed descriptions of the soil classifications are shown within Appendix D.

The Regent silty clay loam association is a clayey residuum weathered from shale. It is characterized as well drained, nonsaline to slightly saline soil, with a silty clay and weathered bedrock underlayment. The Ridgeview silty clay loam is a residuum weathered from shale. It is characterized as well drained, nonsaline to very slightly saline, with clay and silty clay underlayment. The Reeder-Lantry complex association is a loamy residuum weathered from sedimentary rock. It is characterized as a well-drained soil, which is mildly alkaline with a loam, clay loam and weathered bedrock underlayment. The remainders of the soil types for the study area are made up of various silty loam associations.

These types of soils are suitable for engineered uses as proposed within this report. However, it is recommended that a Geotechnical Engineering firm be employed to determine the appropriateness and any limitations of the insitu soils.

The topography of Ziebach County and the City of Dupree is relatively flat, with slopes typically between 2 to 6 percent. Areas found near the Reeder-Lantry complex are significantly steeper. However, these are small areas located on the outer limits of any improvements included in this report. The approximate elevation within the City is 2390 feet above sea level.

The climate of Dupree is characterized as semi-arid or steppe. Winter is relatively long and cold, while summers are fair and hot. Most of the precipitation occurs during the warm period of late spring and early summer. Approximately 70% of the annual precipitation falls between April and August. Annual precipitation for the area is normally 18 inches. Average temperatures for the City range between 18 F in the winter to 70 F in the summer.

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 in regards to possible adverse environmental impact(s) from the proposed infrastructure improvements. Environmental assessment letters have been sent to the following agencies:

- *U.S. Fish and Wildlife Service*
- *U.S. Army Corps of Engineers (District and Area Offices)*
- *South Dakota Department of Environment and Natural Resources*
- *Natural Resources Conservation Service*
- *South Dakota Department of Game, Fish, and Parks*
- *South Dakota Division of Emergency Management*

All agencies responded to the assessment letters. Their response letters are included in Appendix A. It is expected that no negative environmental impacts will occur from construction taking place on previously disturbed land.

2.5.1 Floodplains, Wetlands, and Aquifers

Agencies were contacted about possible impacts upon floodplains, wetlands, and aquifers. Possible impacts include: 1) Flood Hazards; 2) Floodplain Construction; and 3) Impacts to Wetland(s). Return correspondence from the US Corps of Engineers stated that no impacts were expected. If impacts are projected throughout the course of construction, the agency needs to be contacted and any necessary information and/or permits (i.e. 404 Permit) obtained for regulatory approval.

2.5.1.1 Floodplains

A FEMA floodplain map for the City of Dupree is available and is located in Appendix A. The proposed improvements in the Northwest part of the community may encroach in the floodplain.

2.5.1.2 Wetlands

The proposed wastewater improvements are not anticipated to impact areas considered as natural wetlands defined by the US Fish and Wildlife Service. Appendix A contains the National Wetlands Inventory map for the areas included in the proposed improvements.

2.5.1.3 AQUIFERS

Obtaining groundwater from shallow aquifers in Shallow aquifers in Ziebach County typically produce water quality that is not suitable for drinking or livestock watering purposes due to salinity and hardness.

Ziebach County lies under the Hell Creek, Fox Hills, and Inyan Kara Formations. These medium depth formations typically produce wells that can yield between 2 and 10 gpm. Water quality can be highly variable, from fresh to highly saline. These formations have thickness in excess of 400 ft.

Deep water formations include the Minnelusa and Madison Formations, which can supply artesian wells that are of highly variable water quality, but usually always very hard and of high temperature.

The proposed improvements to the existing wastewater system are not anticipated to impact any of the underlying aquifers.

2.5.2 AGRICULTURAL LANDS

The Natural Resources Conservation Service was contacted about possible impacts to prime or important farmland. Return correspondence stated that no impacts were expected, due to the fact that all construction will take place on previously disturbed land.

2.5.3 WILD AND SCENIC RIVERS

There are no "Wild and Scenic Rivers" within the proposed construction area. Therefore, no impacts of this resource will occur.

Bear Creek is the nearest body of water and is free flowing upstream and downstream until the confluence of the Moreau River. Potential impacts to the Bear Creek would be inadvertent discharge of wastewater from the main lift station or sanitary sewer main overflow. The City utilizes an ERP and CMOM to minimize any potential for such events.

2.5.4 FISH AND WILDLIFE

Proposed improvements are in an urbanized setting not suitable for fish and wildlife. Therefore, no impact is expected. The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish, and Parks were contacted in regards to the impacts of fish and wildlife. Both agencies reported that no impact would occur to fish or wildlife during the course of construction.

2.5.4.1 THREATENED & ENDANGERED SPECIES / CRITICAL HABITAT

The U.S. Fish and Wildlife Service and the South Dakota Department of Game, Fish, and Parks were contacted in regards to the impacts of critical habitat for fish and wildlife. Both agencies reported that no impact would occur to critical habitat during the course of

construction. Table 2.2 lists the threatened and endangered species known to exist within Ziebach County.

Table 2.2 – Threatened and Endangered Species (Ziebach County)

County	Group	Species	Certainty of Occurrence	Status
Ziebach	Bird	Crane, Whooping	Known	E
	Bird	Plover, Piping	Known	T (CH)
	Bird	Tern, Least	Known	E
	Mammal	Ferret, Black-footed(4)	Possible	XN
	Bird	Sprague's Pipit	Possible Migration	C
E = Endangered; T = Threatened; C = Candidate; XN = Experimental/Non-essential population				
CH = Critical Habitat; PCH = Proposed Critical Habitat				
4 Black-footed ferrets have been reintroduced in the Badlands National Park, Buffalo Gap National Grasslands, Cheyenne River Sioux Tribe Reservation, Lower Brule Sioux Reservation, Rosebud Sioux Reservation and Wind Cave National Park .				

2.5.5 *Air Quality*

The proposed project area and Ziebach County do not have air quality problems. Local air quality problems occur due to odors from different sources such as livestock feeding operations, as well as, other sources.

Dust storms can also occur on occasion; particularly in dry years when lack of moisture reduces the vegetative cover on the land surface.

The proposed project is not expected to have long term adverse impacts on air quality. Short term impacts include fugitive dust from construction. This will be minimized by incorporation of a SWPPP Plan, as well as, BMP's.

2.5.6 *Water Quality and Quantity*

The major surface water source near the proposed improvements is Bear Creek which drains into the Moreau River. The beneficial uses for Bear Creek are:

- Fish and wildlife propagation, recreation, and stock watering waters; and
- Irrigation waters

Bear Creek flows for approximately 24.5 miles where it enters the Moreau River. Beneficial uses for the Moreau River include:

- Warm water semi-permanent fish life propagation;
- Limited contact recreation waters;
- Fish and wildlife propagation, recreation, and stock watering waters; and
- Irrigation waters

Potential impacts to water quality include the release of untreated wastewater to Bear Creek. The City CMOM sets forth protocol to minimize the chances for this to occur.

The South Dakota Department of Environment and Natural Resources was contacted in regards to possible impacts of surface water quality or quantity. All applicable departments within SDDENR reported that no potential impacts are expected due to this project.

2.6 Historical, Cultural, and Archeological

The City of Dupree is the County seat of Ziebach County. The Ziebach County courthouse is the only site listed in the registry of National Historic places. The courthouse is located on South Main Street between 2nd and 3rd Avenues. The proposed improvements are not expected to adversely impact this site.

Verification of historic sites will be requested from the State Historical Preservation Office (SHPO). An archeological review is not expected to be required in the location of the proposed improvements. All proposed work areas have been previously disturbed during the initial placement of the wastewater facilities.

2.7 Direct and Indirect Impacts

Previous portions of this section have addressed the impact of the proposed improvements on water quality, fish and wildlife, and cultural resources. The remainder of this section addresses other potential impacts and mitigation measures that may be necessary to implement.

2.7.1 Water and Air Resources

Construction of the proposed improvements will require excavation and site grading. Potential impacts include short term localized erosion and fugitive dust. Erosion and sediment control best management practices will be implemented to negate any potential for impact.

2.7.2 Wildlife

The proposed project is in both urbanized and rural areas. Wildlife will be prevented from occupying the areas immediately adjacent to the construction sites. No long term effects on wildlife are expected as a result of this project.

2.7.3 Cultural Resources

Construction of the proposed improvements is not expected to have any impact upon cultural resources in the area. There is a potential for unearthing or covering up historic or archeological resources during construction.

In the event that these resources are compromised during construction, the immediate stoppage of work is dictated by a required condition in the contract specifications. Additionally, the City of Dupree will employ a full time engineer who will monitor construction activities and observe for any cultural resource impacts.

2.8 Mitigation of 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 the construction process. Appropriate permits will be secured prior to the discharge of any trench dewatering or storm waters. Protection of human health, safety, and welfare will be incorporated into the contract documents. If permanent adverse impacts result from the project, mitigating measures will be followed to the satisfaction of the appropriate oversight agencies.

Positive impacts include improved human health and safety, as well as, improved wastewater service for the City of Dupree. This impact is of long-term value to the residents of Dupree and Ziebach County.

2.9 No Action Taken Environmental Impact

If no action is taken by the City, the current wastewater infrastructure will further degrade and will increase the cost to operate and maintain their system.

Figure 2.1 - Arial Photo of Dupree, SD

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Chapter 3.0
WASTEWATER COLLECTION AND TREATMENT SYSTEMS

This chapter describes the City's existing wastewater collection and treatment facilities. In addition, results from a walk through inspection of the current facilities and components that need repair or replacement are also included. Flow monitoring was also conducted on the collection system to determine possible locations and severity of I/I.

3.1 WASTEWATER COLLECTION SYSTEM

Dupree currently provides sanitary sewer service to 240 service connections. Residential connections comprise 215 connections (90%), while commercial connections make up the remaining 25 (10%). The collection system for the City is made up of approximately 15,050 feet of 8 and 10-inch sewer main and an estimated 10,800 feet of 4-inch service connection lines. Additionally, there are approximately forty-four (44) manholes within the collection system. The layout of the collection system can be seen in Figure 3.1.

Installation of the original VCP sewer system occurred in the early 1920's. There are short segments of PVC pipe that were installed at various locations within the community in recent years. However, the vast majority (in excess of 85%) of the collection system is original material.

3.1.1 COLLECTION SYSTEM LIFT STATIONS

There is one lift station within the collection system. A main lift station, located North of the intersection of Main Street and Hwy 212 pumps to the treatment facility, located 1.5 miles to the Northeast.

The main lift station was built in 1976 and consists of a manually cleaned bar screen, wetwell, and dry well. An emergency generator was added in 2011 to provide power during extended power outages. Photos of the lift station can be seen in Appendix B.

Screenings are collected until they are ultimately disposed of at the landfill. Wastewater is pumped via two 4-inch Fairbanks Morse pumps which are rated at 200 gpm at 70 TDH. Wastewater then flows through a four inch ductile iron forcemain approximately 1-1/2 miles Northeast to the Dupree Wastewater Treatment Facility.

As seen in the photos, the lift station is in poor condition. Severe rusting of structural steel members, inoperable valves, and tripping hazards from the pump power cables are only a few detriments with the system. A complete refurbishment of the lift station is needed to bring the lift station back to an adequate condition.

3.1.2 COLLECTION SYSTEM NPDES PERMIT VIOLATIONS

From late April 2011 through June 2011, the City experienced significant precipitation events. These events inundated the collection system and eventually led to a Sanitary Sewer Overflow (SSO) event at the Main Lift Station that lasted for over a week. The

City did not notify, sample, or document this event in accordance with its NDPES permit. US EPA was only made aware of the event when they were notified of it by the CRST Environmental Office. Subsequently, these acts led to an Enforcement Action taken against the City which is being finalized as of June 1, 2013.

One of the conditions of the Enforcement Action was to complete a Capacity, Management, Operation, and Maintenance (CMOM) program which documents regular O&M activities, replacement schedules, and emergency response matters. This document is on file with both the City and USEPA.

Additionally, as part of the Enforcement Action, it is necessary to identify possible items that are in need of replacement and/or refurbishment within the collection system to prevent future SSO events or I/I related circumstances.

3.2 SEWER MAIN AND MANHOLES

The wastewater collection system for the City is made up of approximately 15,050 feet of 8 and 10-inch sewer main and an estimated 10,800 feet of 4-inch service connection lines. Additionally, there are approximately forty-four (44) manholes within the collection system. The layout of the collection system can be seen in Figure 3.1.

Construction of the original system occurred in the early 1920's with VCP. There are short segments of PVC pipe that were installed at various locations within the community. However, the vast majority (in excess of 85%) of the collection system is original material.

Current maintenance activities performed on the collection system are minimal. The City recently purchased a jetting machine in order to clean sewer mains. The entire system will be cleaned on either a 3 or 4 year cycle. However, the current condition of the collection system is unknown.

Most of the manholes are located in gravel streets. All manholes located in gravel streets are buried below the surface anywhere between 9 inches to 2 feet. Only during complaints from service customers do any of these manholes become unearthed in order to investigate a problem. Manholes that were readily accessible were evaluated. Most manholes are in fair condition with minimal signs of I/I. Inspection reports for the manholes are located in Appendix C.

3.3 WASTEWATER FLOWRATES

Sanitary sewer flow in a collection system is composed of wastewater from residences and businesses, as well as, clear water that is referred to as infiltration and inflow (I/I). 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 the groundwater table is at or above the level of sanitary sewer piping.

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 snowmelt and precipitation events.

A wastewater collection system is typically conservatively designed so that it can carry a nominal amount of I/I. However, when I/I become excessive, the system can easily become hydraulically overloaded.
Since the majority of the collection system is original construction and material, the need to investigate for I/I is desired. Reduction of unwanted water coming into the system will prolong the life of the collection and treatment systems. Therefore, it is in the best interest of the City to fully evaluate the condition of the collection system for I/I. Typically, this includes smoke testing, flow monitoring, and televising.

3.3.1 BASELINE FLOWRATE

Before a determination of I/I within the collection system can be made, a baseline flowrate must be calculated. A baseline wastewater flowrate for the City of Dupree was determined by using the winter time water use records to determine the daily water use of the residents. Typically, I/I is at a minimum during these months due to frost conditions within the subsoil.

Water use data was provided by the City and Tri County Rural Water System and is shown in Table 3.1. Water use data indicates that the average daily volume of water obtained during the winter months of November, December, January and February was equal to approximately 33,977 gpd or 65 gpcd.

It is a widely accepted assumption that approximately 80% of the metered water usage reaches the collection system. Therefore, it is concluded that the average daily volume of water that reaches the sanitary sewer is 80% of the average daily water use, which was calculated to be 52 gpcd or 27,181 gpd.

Chapter 1.C.2 of the Recommended Design Criteria for Wastewater Collection and Treatment Facilities, published by the SDDENR suggests the use of typical wastewater flows between 60 to 75 gpcd with 60 gpcd, as a minimum. The minimum amount of 60 gpcd will be used for the remainder of this report.

Table 3.1 - Potable Water Use

Month	Gallon	GPD	GPCD
Nov-09	966,100	32,203.3	61.3
Dec-09	1,100,000	35,483.9	67.6
Jan-10	1,166,600	37,632.3	71.7
Feb-10	1,111,300	38,320.7	73.0
Nov-11	1,000,000	34,482.8	65.7
Dec-11	855,000	29,482.8	56.2
Jan-12	882,000	30,413.8	57.9
Feb-12	980,000	33,793.1	64.4
Avg	**1,007,625**	**33,976.6**	**64.7**

3.4 Infiltration and Inflow Analysis

During a high level storm event in 2011, an SSO occurred which caused subsequent enforcement action by the US EPA. Also, due to the fact that the condition of the collection system is unknown, is was advised that an I/I study be done as part of this facility plan process.

In order to determine the amount of unwanted water coming into the sanitary sewer system, the following analyses were conducted to determine the location, amount, and severity of the intrusion.

3.4.1 Smoke Testing

Smoke testing was not conducted on the Dupree wastewater collection. However, it is highly recommended that the City contact Jerry Heymeyer of the South Dakota Rural Water Association to schedule and conduct testing. Smoke testing can be conducted on the entire collection system in order to identify abandoned sewer services, pipeline breaks, vented manholes, and other problems associated with allowing unwanted water into the collection system.

Smoke testing should not be conducted until all of the manholes located in gravel streets are brought flush to the road surface. This will expedite the smoke testing process by allowing maximum access to the collection system.

3.4.2 Cleaning and Televising

Cleaning and televising was not conducted on the collection system. However, it is highly recommended that this be conducted on the collection system in order to ascertain the condition of the system, as well as, identify any problem areas in need of replacement and/or emergency repair.

There are several issues that can be encountered during the cleaning and televising of sewer lines. These include:

1. ***Root intrusion***
2. ***Mineral deposits***
3. ***Heavy sediment accumulation***
4. ***Pipe cracking and deterioration***
5. ***Pipeline sagging***
6. ***Manhole deterioration***

Root intrusion is common among aging service and collection lines. Mineral deposits indicate that during times of wet weather, groundwater has seeped into the collection system, causing increased flows to the treatment system.

Sags in the pipeline cause the accumulation of solids in the depression, reduce flow velocities, and eventually can cause plugging within the collection system. Pipe and manhole cracking and deterioration are prone to further decay and increase opportunities for groundwater infiltration.

3.4.3 *FLOW MONITORING*

Flow monitoring was conducted for the City of Dupree by placing an ultrasonic flowmeter into the sanitary sewer system just upstream of the main lift station. Table 3.2 shows the wastewater flow and rain events that occurred during the monitoring period.

Table 3.2 - Flow Monitoring Results

Date	Daily Flow (gpd)	Rain Event (in)	Date	Daily Flow (gpd)	Rain Event (in)
14-Apr-12	59,171.1	0	*1-May-12*	89,335.8	0
15-Apr-12	76,094.7	1.00	*2-May-12*	88,858.4	0.03
16-Apr-12	73,808.4	0	*3-May-12*	83,444.3	0
17-Apr-12	78,834.3	0	*4-May-12*	82,122.6	0
18-Apr-12	64,782.6	0.05	*5-May-12*	63,871.8	0.02
19-Apr-12	64,290.2	0.22	*6-May-12*	77,582.1	0.33
20-Apr-12	68,617.7	0	*7-May-12*	79,733.2	0
21-Apr-12	57,141.5	0	*8-May-12*	67,504.7	0
22-Apr-12	59,385.6	0	*9-May-12*	78,442.5	0
23-Apr-12	77,197.7	0	*10-May-12*	65,582.3	0
24-Apr-12	74,502.1	0	*11-May-12*	62,719.2	0
25-Apr-12	71,712.0	0	*12-May-12*	62,038.8	0
26-Apr-12	73,859.7	0	*13-May-12*	59,378.0	0
27-Apr-12	81,710.1	0.23	*14-May-12*	69,182.8	0
28-Apr-12	108,630.3	0.60	*15-May-12*	70,647.8	0
29-Apr-12	90,894.9	0	*16-May-12*	80,083.0	0
30-Apr-12	103,576.7	0	*17-May-12*	75,905.1	0
Total Flow		2,540,641.7	gal		
Avg Daily Flow		74,724.8	gpd		
Daily City Baseline		24,214	gpd		
% Increase		208.6%			

When the flow monitoring results were compared to the baseline flowrate, the rates that were obtained from the flowmeter were significantly higher than anticipated.

Flow monitoring data was checked against the available pumping records from the main lift station. City officials believe that the pumping rate of the lift station is 200 gpm. However, the baseline wastewater flowrate for the community does not support this pumping rate. Hydraulic calculations were performed on the lift station and forcemain. The pump curves for the pumps were also obtained. The calculations show that the lift station is pumping in excess of 550 gpm. It is recommended that the City calibrate their lift station pumps in order to obtain an accurate measure of the current operating conditions.

Based on the available data, I/I does in fact contribute a considerable amount of unwanted water to the wastewater treatment facility.

Figure 3.2
Dupree Flow Monitoring

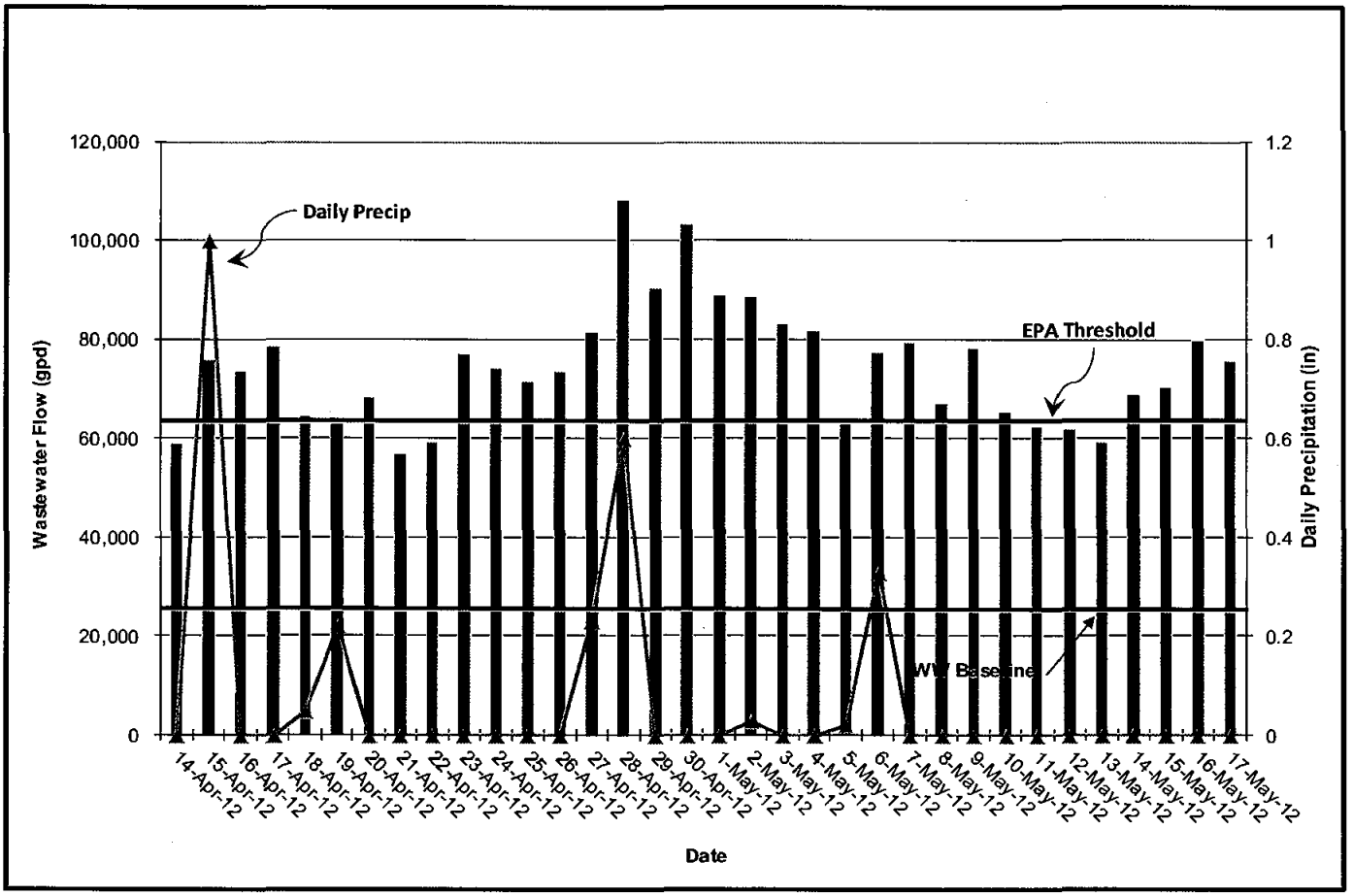


Figure 3.2 shows that wastewater flowrate is substantially higher than the baseline even before rain events. Groundwater may be contributing to the infiltration within the collection system. The average daily flow that was recorded by the flowmeter was 74,724 gpd. This is significantly higher than the 24,214 gpd baseline for the City. This is a 208% (2x) increase in the overall wastewater flow.

As precipitation events occur, inflow, as well as, the groundwater table level increases. Thus, more of the sewer system is subject to I/I. This unwanted water uses up the reserve capacity of a community's wastewater collection, pumping, and treatment facilities. I/I results in a decreased capacity for growth and an increased need for larger infrastructure.

SDDENR has established a maximum acceptable allowance for infiltration. The standard has 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 PVC pipe. Based upon the lengths of sewer pipe within the community, an infiltration flowrate of 5,200 gpd is considered acceptable.

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 gal per capita per day (gpcpd). Based upon this threshold value and a current population of 525, the maximum allowable flow during the should not exceed 63,000 gpd. Based on the limited data, this rate has been consistently exceeded during the study period.

3.5 WASTEWATER COLLECTION SUMMARY

After performing inspection and flow monitoring of the Dupree wastewater collection system, it is evident that I/I entering the sewer system is a significant contributor to the wastewater flows. This is of concern for operation and maintenance issues and replacement priorities. Smoke testing and video inspection of the collection system are needed to further evaluate the system.

The overall condition of the system is below average and in need of refurbishment. Several things can be done which will help prolong the life of the current system. These recommendations will also increase the knowledge of decision makers as to the necessity of replacement or refurbishment of components within the system. Cost estimates for these recommendations are presented in Chapter 4.0.

- **Complete video inspection of the collection system.**
- **Raise manholes to existing grade within graveled streets.**
- **Replace or refurbish original sewer mains, as conditions and resources permit.**
- **Refurbish main lift station.**

The remaining recommendations do not require significant capital to accomplish and will provide benefit to the collection system.

- ***Obtain short and long term goals for the Dupree wastewater system.***
- ***Review sewer rates on a more frequent basis (every 2 to 5 years).***
- ***Perform smoke testing of the collection system.***
- ***Integrate a regular cleaning schedule of the collection system.***
- ***Calibrate main lift station pumps.***
- ***Accurately update As-Builts with manhole locations and line sizes, year of replacement, etc.***

3.6 WASTEWATER TREATMENT SYSTEM

The wastewater treatment facility, located 1.5 miles northeast of the main lift station, consists of an influent splitter box and four (4) lagoon cells. Each lagoon has a surface area of 3.86 ac, for a total area of 15.44 ac. The system is designed for total containment. Details of the treatment facility are located in Figures 3.3 and 3.4.

An inspection of the treatment facility was conducted. Photos were taken and are located in Appendix B. The overall condition of the treatment facility is of average condition. However, there are several items that are in need of immediate attention.

There is significant erosion in various locations. The installation of drainage fabric and riprap around the lagoon cells is highly recommended. Additionally, the security fencing around the entire perimeter is in need of replacement. Finally, the installation of an all-weather road should be considered. The only way to travel out to the WWTF during periods of heavy snow or rain, is by snowmobile or 4-wheeler.

3.6.1 TREATMENT SYSTEM NDPES PERMIT VIOLATIONS

From late April through June 2011, the City experienced significant precipitation events. As was previously discussed in Section 3.1.2, these events inundated the collection system and eventually led to a Sanitary Sewer Overflow (SSO) event at the Main Lift Station that lasted for several days.

The treatment lagoons were not large enough to handle all of the wastewater that was pumped from the lift station. In order to keep the wastewater from overtopping the lagoons, the City obtained permission to perform an emergency discharge in early May 2011. However, an unauthorized discharge from the treatment lagoons was reported to USEPA in June 2011. The second discharge was not reported to USEPA nor was any sampling taken during the event. Subsequently, these acts were also included in the Enforcement Action taken against the City.

A Capacity, Management, Operation, and Maintenance (CMOM) program was developed which documents regular O&M activities, replacement schedules, and emergency response matters.

Additionally, as part of the Enforcement Action, it is necessary to identify possible items that are in need of replacement and/or refurbishment within the treatment system to prevent future SSO events or I/I related circumstances.

3.6.2 TREATMENT SYSTEM ORGANIC LOADING

Section B.1.a of Chapter IV of the SDDENR Design Criteria Manual states that the maximum design loading of the primary lagoon cell shall not exceed 30 pounds of BOD_5 per acre per day. Section B.1.d states that the maximum organic loading for the entire system shall not exceed 20 pounds of BOD_5. Average contribution rates of BOD_5 is 0.2 lbs/cap/day.

Therefore, based on the City's treatment facility size, overall loading should not exceed 308 lbs/day. As seen in Table 5.3, the current loading estimated at the treatment facility is 105 lbs/day. The community would have to grow to over 1,500 people for the organic loading of the facility to become exceeded. However, the hydraulic capacity would become exceeded long before this would occur. Now and in the future, the wastewater treatment facility will be able to handle the organic loading contributed by the City of Dupree.

3.6.2 *TREATMENT SYSTEM HYDRAULIC CAPACITY*

In addition to the organic capacity, the hydraulic capacity of the treatment facility must also be evaluated. A water mass balance was conducted on the Dupree wastewater treatment facility. As shown in Table 3.5, the City currently does not have adequate capacity in the treatment system for total retention.

If the location and/or sources of I/I can be identified and eliminated, the treatment facility can regain its original capacity and be able to totally contain all of the community wastewater.

Table 3.3 - Hydraulic Capacity Summary
Dupree Wastewater Treatment Facility

Pond Sizes			
Primary	**15.44**	**Ac**	672,566.4 **Sq Ft**
Secondary	**0**	**Ac**	0.0 **Sq Ft**
Total Pond Area	15.44	Ac	672,566.4 Sq Ft
Population			
Current	**525**		
Inflow			
Avg Inflow	**142**	**gpcd**	74,550.0 **gpd**
Precipitation			
Precip	**19**	**in/yr**	21,823.1 **gal/day**
Evaporation			
Evap	**36**	**in/yr**	41,349.0 **gal/day**
Seepage			
Primary	**0.0625**	**in/day**	26,202.1 **gal/day**
Secondary	**0.125**	**in/day**	0.0 **gal/day**
Inflow IS NOT <	Seepage + Evaporation - Precipitation		
74550	***45728***		
This facility does NOT have enough capacity to be run as a total retention facility			

3.7 WASTEWATER TREATMENT SUMMARY

The population of Dupree is expected to be stable with slight growth in the next 20 years. Current and future organic loadings will still be able to be effectively treated at the facility. Hydraulic loading into the treatment facility has is larger than what was originally

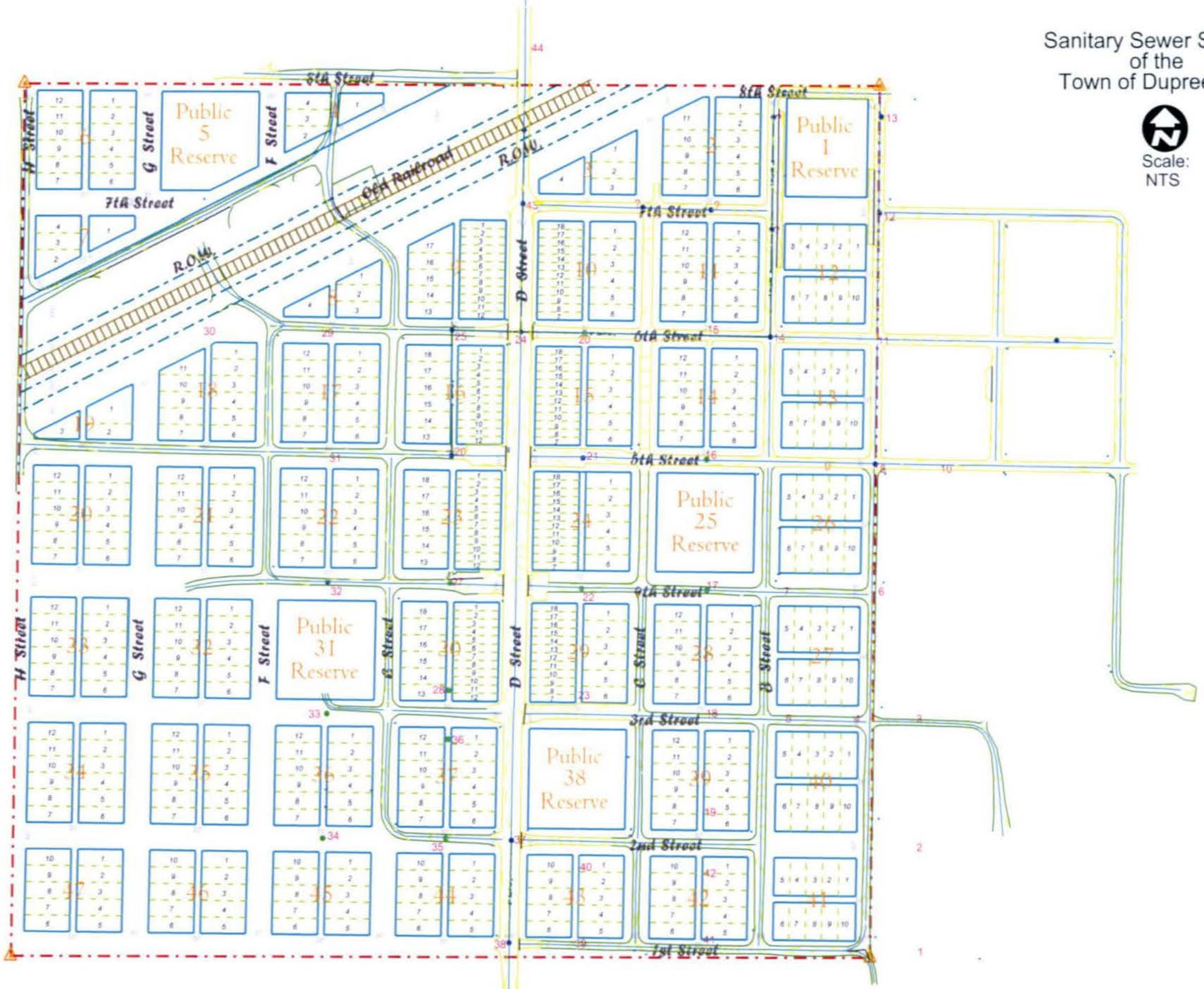
designed for. I/I will gradually increase, as the original collection system deteriorates. Therefore, to prolong the life of the treatment facility for as long as possible, I/I within the sewer mains need to be addressed.

However, fixing the current erosion on the lagoon slopes and stopping future erosion is a necessity and should be scheduled as soon as possible. There are also things that can be done which will help prolong the life of the current system. These recommendations will also increase the knowledge of decision makers as to the necessity of replacement or refurbishment of components within the system. The following recommendations are in descending priority and cost estimates are presented in Chapter 4.0:

- **Fix current erosion and riprap lagoon cells.**
- **Replace existing security fencing.**
- **Consider installation of an all-weather road from City limits to WWTF.**

Sanitary Sewer System of the Town of Dupree, SD

Scale: NTS



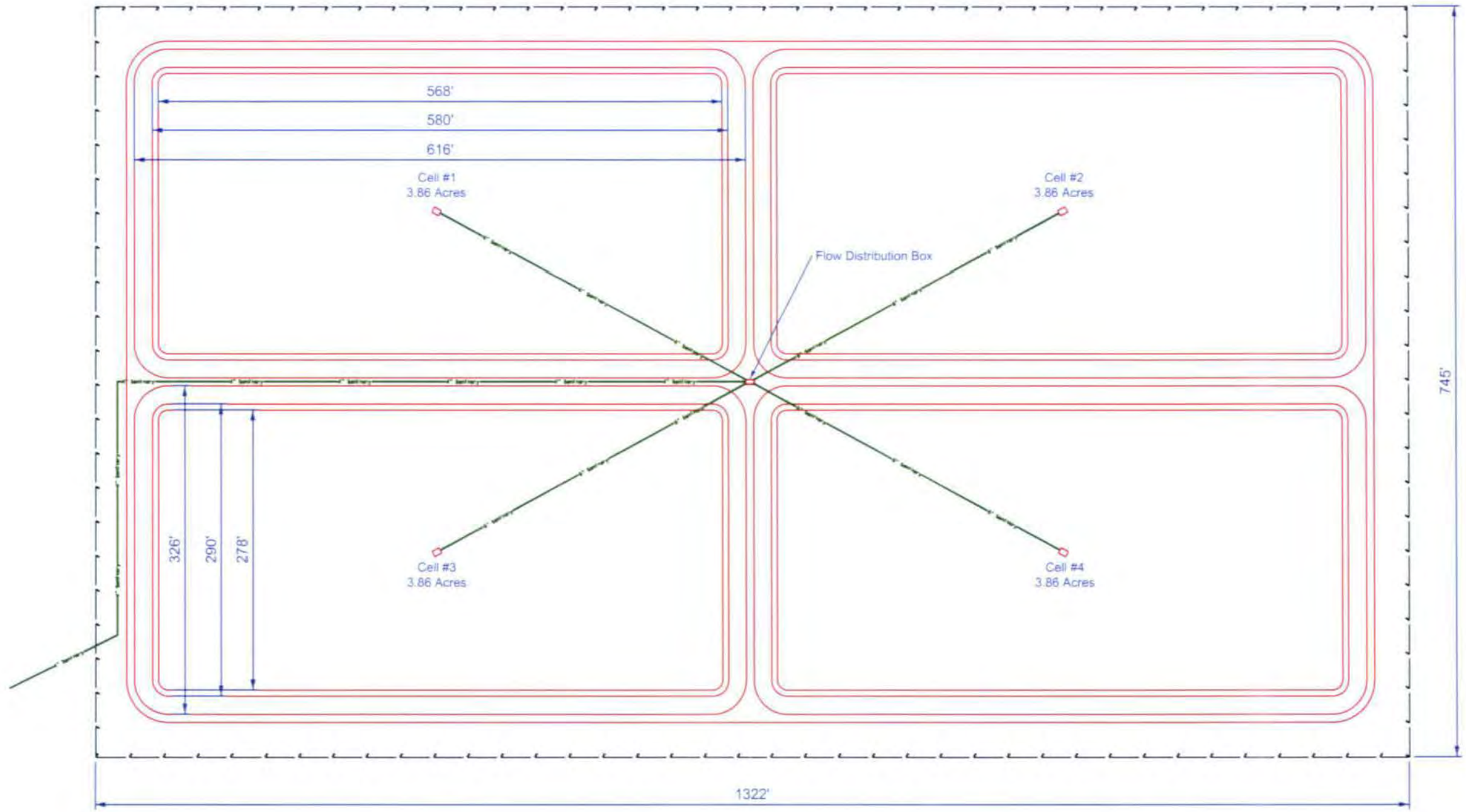
PROJECT NAME:	Town of Dupree Sewer System Study
DESCRIPTION:	Sanitary Sewer Network
PROJECT NUMBER:	BEI: S12-P510
COMPLETED BY:	JJH
DATE PRINTED:	1/31/12
DATE REVISED:	/ /

1 OF 1

Brosz Engineering, Inc.
Registered in North Dakota, South Dakota, Wyoming, Montana and Nebraska
3030 Airport Rd., Suite A, Box 23 · Pierre, SD 57501
Phone (605) 224-1123 · Fax (605) 224-0689

Sanitary Sewer Lagoon
Town of Dupree, SD

Scale:
NTS



1
OF
1

COMPLETED BY: JJH
DATE PRINTED: 1/31/12
DATE REVISED: / /

PROJECT NAME: Town of Dupree Sewer System Study

DESCRIPTION: Manhole Locations

PROJECT NUMBER:
BEI: S12-P510

Brosz Engineering, Inc.
Registered in North Dakota, South Dakota
Wyoming, Montana and Nebraska
3030 Airport Rd., Suite A, Box 23 * Pierre, SD 57501
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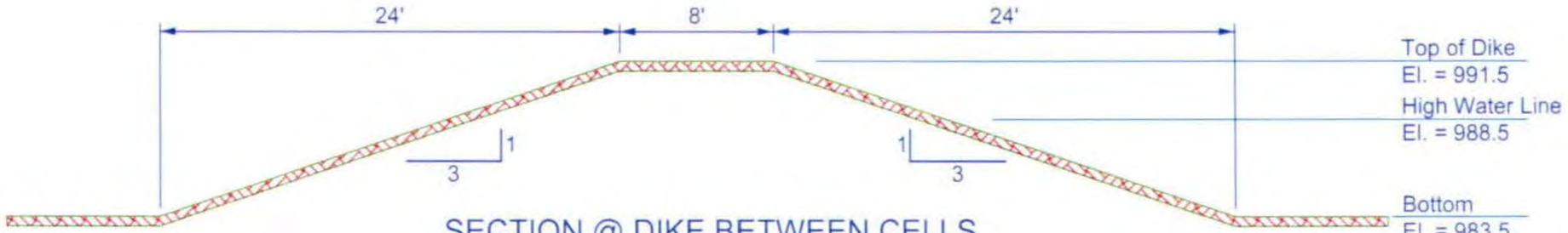
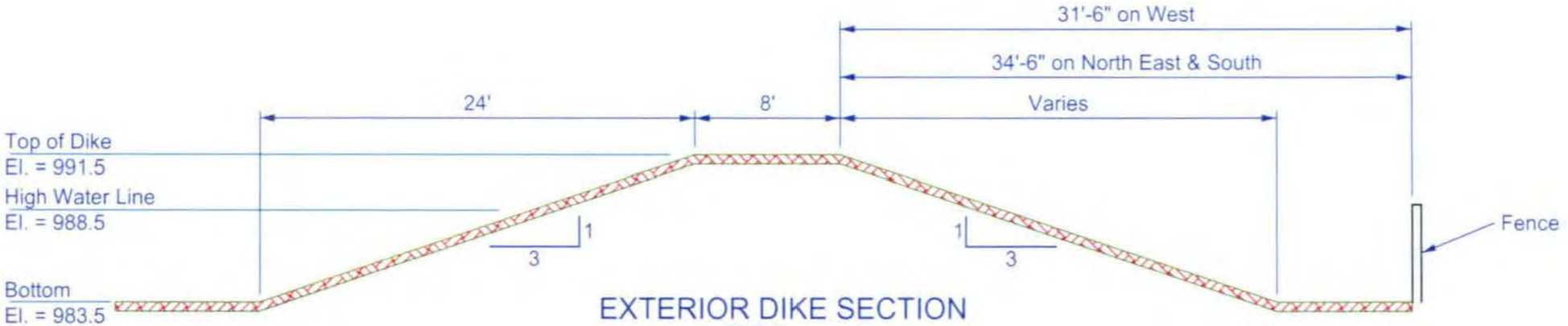


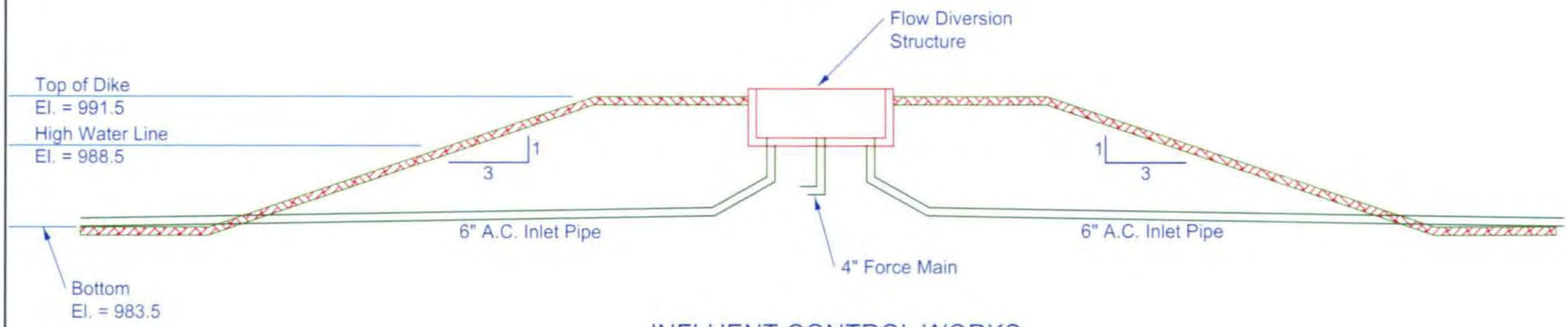
SECTION @ DIKE BETWEEN CELLS

N.T.S.



EXTERIOR DIKE SECTION

N.T.S.



INFLUENT CONTROL WORKS

N.T.S.

1 OF 1

COMPLETED BY: JJH
DATE PRINTED: 1/31/12
DATE REVISED: / /

PROJECT NAME: Town of Dupree Sewer System Study

DESCRIPTION: Lagoon Dike Sections

PROJECT NUMBER: BEI: S12-P510

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Chapter 4.0
PROPOSED WASTEWATER SYSTEM ALTERNATIVES

This chapter proposes improvement alternatives to the wastewater collection and treatment facilities. These improvements will be evaluated based on the system's technical requirements, cost effectiveness, and operational reliability. In addition, cost estimating and life cycle analysis are presented herein.

4.1 Cost Estimating Criteria

The cost estimates presented in this study are opinions developed from prior bid tabulations, cost curves, information obtained from previous studies, and Brosz Engineering's experience on previous projects. The costs estimated for each alternative are intended to be used to facilitate revisions to the City's CIP and ultimately to support determination of user rates and connection (tap) fees.

4.1.1 Period of Analysis

A planning period is selected to approximate the life of the capital facilities to be compared in the economic analysis, as well as to capture the influence of significant factors on economic decisions. A planning period of 20 years was selected for this project, encompassing the design period from 2013 through 2033. This represents the typical period for facilities planning and approximates the life of major equipment in wastewater facilities. In addition, 20 years is the minimum planning period required for EPA Facilities Planning.

4.1.2 Operations Labor Rate

The operations labor rate is estimated to be $36 per hour, including fringe benefit costs, based on the 2012 average rates for the City's operations and maintenance personnel. A crew equaling one-eighth (1/8) full-time employee equivalent will be tasked with routine preventive maintenance tasks, as well as, normal operation of the facility.

4.1.3 Power Costs

The City is currently served with electricity from Moreau Grand Rural Electric. Power rates for the City of Dupree are shown in the table below.

Table 4.1 – City of Dupree Electricity Usage Rates

Kwh Usage	Electric Rate (per Kwh)
0-30	$15 (minimum fee required)
30-850	$0.0985
850 or more	$0.055
**An additional power fee of $0.0124 is applied to every kilowatt-hour used*	

Alternatives that contain mechanical equipment will take into account the life cycle costs of electricity usage.

4.1.4 *Maintenance Costs*

To estimate the cost of maintaining new facilities, an allowance is made based on the original construction cost of the facility. Unless explicitly delineated by the manufacturer, an allowance for mechanical equipment maintenance was selected to be three percent, based on previous engineering experience.

4.1.5 *Cost Estimating Accuracy*

The cost estimates presented in the report have been prepared for predesign study purposes and for guidance in project evaluation and implementation. Final costs of a project will depend on actual labor and material costs, competitive market conditions, final project scope, implementation schedule, and other variable factors such as: preliminary alignment generation, investigation of alternative routings, and detailed utility and topography surveys.

The American Association of Cost Engineers defines three types of cost estimates:

- An Order of Magnitude Estimate for Master Plan Studies. This is an approximate estimate made without detailed engineering data. It is normally expected that an estimate of this type would be accurate within +50 percent to -30 percent.

- A Budget Estimate for Predesign Study. A budget estimate is prepared with the use of flow sheets, layouts, and equipment details. It is normally expected that an estimate of this type would be accurate within +30 percent to -15 percent.

- A Definite Estimate (Engineer's Estimate) for Time of Contract Bidding. This estimate is prepared from very defined engineering data. The data includes fairly complete plot plans and elevations, soil data, and a complete set of specs. It is expected that a definite estimate would be accurate within +15 to -5 percent.

Costs developed for this study should be considered a "budget estimate" and have an expected accuracy range of +30 percent to -15 percent.

4.2 Equivalent Uniform Annual Cost(s)

All alternatives presented within the chapter are compared using the Equivalent Uniform Annual Cost(s) or EUAC. EUAC focuses on the annual cost of owning and operating equipment or systems. It is a cash flow analysis approach, where cash flows are converted to their respective design lives. Comparing alternatives using the EUAC method takes into account the design life of each alternative, operational costs, maintenance activities, and any salvage value of equipment and materials at the end of the useful life.

The EUAC method expresses life cycle costs as an annualized estimate of cash flow instead of a lump-sum estimate of present value. Since life cycle costs are calculated as an annualized amount, engineering professionals use this method to compare the economic value of systems with different service lives. Therefore, the alternative that has the lowest upfront capital cost may not always be the lowest cost alternative. Below in Table 4.1 show the different values and terms used within the EUAC comparison.

Table 4.2 – Equivalent Uniform Annual Cost(s)

Variable	Definition	Value
Design Life = n	*Length of Time Facility is Expected to Operate at Design Conditions*	*Varies, but for this report a value of 20 years is used*
Interest = i	*Annual interest rate*	*4.50%*
Present Worth = PW	*Upfront cost of an item*	*Varies*
Salvage Value = SV	*Value of equipment or material at end of design life*	*Varies*
Net Present Worth of Salvage Value = PWSV	*Present Worth of Salvage Value*	
Net Present Worth of Capital Costs = NPW	*Present Worth less the Present Worth of Salvage Value (PW – PWSV)*	*Varies*
Net Present Worth of Annual Costs	*Present worth of annual O&M costs over the design life*	
Equivalent Uniform Annual Cost(s)	*Annual cost of present worth of capital, salvage, and O&M costs*	

4.3 Wastewater System Alternatives

The following describes improvement alternatives that have been developed for the Dupree wastewater system. The alternatives are separated between collection system alternatives and treatment facility alternatives.

Design of all alternatives shall be in accordance with SDDENR recommended design criteria, Ten States Standards, County ordinances, and all other applicable standards. In addition, all comments and concerns of review agencies would be addressed and/or implemented prior to bidding of the construction project.

4.4 Wastewater Collection System Alternative 1 – Do Nothing

A "Do Nothing" alterative would consist of keeping the collection system as it is currently operating. No improvements would be made to the collection system. This alternative is not recommended for the fact that the design life of the collection system is at its end and the potential for major repairs and replacement is becoming greater every year. Therefore, this alternative will not be discussed any further in the report.

4.5 Wastewater Collection System Alternative 2 – Cleaning and Televising of Collection System

Alternative 2 consists of cleaning and televising of the entire collection system. Since televising has never been done during the life of the system, it is necessary to determine the condition of the aging infrastructure in order to prioritize replacement or refurbishment activities.

Additionally, since approximately half of the existing manholes are below grade, raising the level of the manholes could be accomplished at this time as well. The estimated cost to clean and televise the collection system is shown below in Table 4.2.

Table 4.3 - Opinion of Probable Construction Costs
Wastewater Collection Alternative 2 - Clean and Televise Collection System

Item	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	8 inch Sewer Cleaning & Televising	10,000	LF	$ 1.95	$ 19,500.00
2	10 inch Sewer Cleaning & Televising	5,000	LF	$ 2.15	$ 10,750.00
3	Remove Protruding Services	15	Each	$ 750.00	$ 11,250.00
4	Sewer Main Spot Repair	5	Each	$ 3,200.00	$ 16,000.00
5	Street Surfacing Replacement	5	Each	$ 1,500.00	$ 7,500.00
				TOTAL PROJECT COST	***$ 65,000.00***

Due to the fact that a comprehensive evaluation of the collection system could not be conducted at the time of this report, it is recommended that the City of Dupree perform smoke testing and televising of the collection system in the near future.

Based on information presented in Chapter 3, it has been determined that the City is experiencing significant amounts of I/I within the collection system. By conducting smoke testing and camera televising of the system, deficiencies within the system can be located and priorities can be set as to which deficiencies need to be addressed first.

4.6 Wastewater Collection System Alternative 3 – CIPP Refurbishment of Collection System

In order to gain an idea of what it will cost to repair or replace the existing sanitary sewer infrastructure, Alternatives 3 and 4 have been prepared. Alternative 3 is to refurbish the entire collection system via CIPP or "slip-lining". This proven technology can significantly save money when done before the collection system has major structural problems, where it would then be necessary to conventionally replace the pipe. Table 4.3 shows the costs of refurbishment of the collection system via CIPP process.

Table 4.4 - Opinion of Probable Construction Costs

Wastewater Collection Alternative 3 - Slip Lining of Wastewater Collection System

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$ 95,000.00	$ 95,000.00
2	Traffic Control	1	LS	$ 5,500.00	$ 5,500.00
3	Clean, Televise, and Prep 8 inch Sewer	10,000	LF	$ 1.95	$ 19,500.00
4	Clean, Televise, and Prep 10 inch Sewer	5,000	LF	$ 2.15	$ 10,750.00
5	Remove Protruding Services	15	EA	$ 750.00	$ 11,250.00
6	8 inch Cured In Place Sewer Pipe Liner	10,000	LF	$ 34.00	$ 340,000.00
7	10 inch Cured In Place Sewer Pipe Liner	5,000	LF	$ 38.00	$ 190,000.00
8	Sewer Service Reinstatement	240	EA	$ 145.00	$ 34,800.00
9	Post Rehabilitation Televsing	15,000	LF	$ 1.00	$ 15,000.00
10	Bypass Pumping	1	LS	$ 12,500.00	$ 12,500.00
11	Manhole Interior Lining	2,514	SF	$ 5.00	$ 12,570.00
12	48 inch Manhole Replacement	20	EA	$ 4,050.00	$ 81,000.00
13	Manhole Frame and Lid	20	EA	$ 475.00	$ 9,500.00
14	Reconnect 8 inch Sewer Main	40	EA	$ 1,050.00	$ 42,000.00
15	Reconnect 10 inch Sewer Main	40	EA	$ 1,200.00	$ 48,000.00
16	MC-70 Asphalt for Prime Coat	2	Ton	$ 900.00	$ 1,800.00
17	Asphalt Concrete (3 inches), Class E	320	Ton	$ 90.00	$ 28,800.00
18	PG 64-22, Asphalt Cement	20	Ton	$ 650.00	$ 13,000.00
19	Base Course	500	Ton	$ 22.00	$ 11,000.00
				Total Construction Costs	**$ 981,970.00**
	Contingency / Admin & Legal Fees				
	10% Contingency				$ 98,197.00
	4% Admin / Legal				$ 39,278.80
				Subtotal	**$ 137,475.80**
	Design and Construction Management Services				
	Design Engineering				$ 98,197.00
	Bid Letting and Contract Document Production				$ 19,639.40
	Construction Inspection, Testing, and Management				$ 117,836.40
				Subtotal	**$ 235,672.80**
				TOTAL PROJECT COST	**$1,355,118.60**

Table 4.5 - Equivalent Uniform Annual Costs Analysis

Wastewater Collection Alternative 3 - Slip Lining of Wastewater Collection System

Initial Capital Costs

Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization	$ 95,000.00			$ 95,000.00
Traffic Control	$ 5,500.00			$ 5,500.00
Clean, Televise, and Prep 8 inch Sewer	$ 19,500.00			$ 19,500.00
Clean, Televise, and Prep 10 inch Sewer	$ 10,750.00			$ 10,750.00
Remove Protruding Services	$ 11,250.00			$ 11,250.00
8 inch Cured In Place Sewer Pipe Liner	$ 340,000.00	$ 136,000.00	$ 56,391.43	$ 283,608.57
10 inch Cured In Place Sewer Pipe Liner	$ 190,000.00	$ 76,000.00	$ 31,512.86	$ 158,487.14
Sewer Service Reinstatement	$ 34,800.00			$ 34,800.00
Post Rehabilitation Televsing	$ 15,000.00			$ 15,000.00
Bypass Pumping	$ 12,500.00			$ 12,500.00
Manhole Interior Lining	$ 12,570.00	$ 5,028.00	$ 2,084.82	$ 10,485.18
48 inch Manhole Replacement	$ 81,000.00	$ 32,400.00	$ 13,434.43	$ 67,565.57
Manhole Frame and Lid	$ 9,500.00	$ 3,800.00	$ 1,575.64	$ 7,924.36
Reconnect 8 inch Sewer Main	$ 42,000.00	$ 16,800.00	$ 6,966.00	$ 35,034.00
Reconnect 10 inch Sewer Main	$ 48,000.00	$ 19,200.00	$ 7,961.14	$ 40,038.86
MC-70 Asphalt for Prime Coat	$ 1,800.00	$ 720.00	$ 298.54	$ 1,501.46
Asphalt Concrete (3 inches), Class E	$ 28,800.00	$ 11,520.00	$ 4,776.69	$ 24,023.31
PG 64-22, Asphalt Cement	$ 13,000.00	$ 5,200.00	$ 2,156.14	$ 10,843.86
Base Course	$ 11,000.00	$ 4,400.00	$ 1,824.43	$ 9,175.57
				$ 852,987.87

Annual O&M Costs

Item	Capital Cost	Net Present Worth
Energy	$ -	$ -
Maintenance	$ 8,500.00	$ 110,567.46
Labor	$ 9,360.00	$ 121,754.29
Miscellaneous	$ 500.00	$ 6,503.97
		$ 238,825.71
Total Net Present Worth		$1,091,813.59
Equivalent Uniform Annual Cost (20 yrs @ 4.5%)		**$ 49,130.61**

4.6 Wastewater Collection System Alternative 4 – Conventional Replacement of Collection System

Alternative 4 would replace all of the existing collection system via conventional "remove and replace" methods. This alternative is needed when the condition of the existing piping is unable to be slip lined or rehabilitated with less evasive means. Table 4.6

shows the cost to replace the existing system via conventional methods. Table 4.7 shows the EUAC of Alternative 4.

Table 4.6 - Opinion of Probable Construction Costs

Wastewater Alternative 4 - Conventional Replacement of Collection System

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$ 147,000.00	$ 147,000.00
2	Traffic Control	1	LS	$ 12,500.00	$ 12,500.00
3	8 inch SDR 35 Sewer Pipe	10,000	LF	$ 37.00	$ 370,000.00
4	10 inch SDR 35 Sewer Pipe	5,000	LF	$ 39.00	$ 195,000.00
5	48 inch Manhole Replacement	45	Each	$ 3,700.00	$ 166,500.00
6	4 x 8 Wye Service Connection	200	Each	$ 175.00	$ 35,000.00
7	4 x 10 Wye Service Connection	40	Each	$ 215.00	$ 8,600.00
8	4 inch 45 degree Fitting	240	Each	$ 35.00	$ 8,400.00
9	4 inch Sewer Service Pipe	12000	LF	$ 22.00	$ 264,000.00
10	4 inch Sewer Service Coupling	240	Each	$ 115.00	$ 27,600.00
11	Bypass Pumping	1	LS	$ 9,250.00	$ 9,250.00
12	Full Depth Saw Cutting	19000	LF	$ 1.50	$ 28,500.00
13	MC-70 Asphalt for Prime Coat	16.2	Ton	$ 875.00	$ 14,175.00
14	Asphalt Concrete (3 inches), Class E	600	Ton	$ 200.00	$ 120,000.00
15	PG 64-22, Asphalt Cement	35	Ton	$ 625.00	$ 21,875.00
16	Base Course	1,700	Ton	$ 15.00	$ 25,500.00
17	Replacement of Topsoil	350	Cu Yd	$ 8.50	$ 2,975.00
18	Seeding, Fertilizing, and Mulching	4,500	Sq Yd	$ 6.00	$ 27,000.00
19	Type A-7 Manhole Frame and Lid	45	Each	$ 425.00	$ 19,125.00
				Total Construction Costs	**$ 1,503,000.00**
	Contingency / Admin & Legal Fees				
	10% Contingency				$ 150,300.00
	4% Admin / Legal				$ 60,120.00
				Subtotal	**$ 210,420.00**
	Design and Construction Management Services				
	Design Engineering				$ 150,300.00
	Bid Letting and Contract Document Production				$ 30,060.00
	Construction Inspection, Testing, and Management				$ 180,360.00
				Subtotal	**$ 360,720.00**
				TOTAL PROJECT COST	**$ 2,074,140.00**

Table 4.7 - Equivalent Uniform Annual Costs Analysis

Wastewater Collection Alternative 4 - Conventional Replacement of Collection System

Initial Capital Costs				
Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization	$ 147,000.00			$ 147,000.00
Traffic Control	$ 12,500.00			$ 12,500.00
8 inch SDR 35 Sewer Pipe	$ 370,000.00	$ 148,000.00	$ 61,367.14	$ 308,632.86
10 inch SDR 35 Sewer Pipe	$ 195,000.00	$ 78,000.00	$ 32,342.14	$ 162,657.86
48 inch Manhole Replacement	$ 166,500.00	$ 66,600.00	$ 27,615.21	$ 138,884.79
4 x 8 Wye Service Connection	$ 35,000.00	$ 14,000.00	$ 5,805.00	$ 29,195.00
4 x 10 Wye Service Connection	$ 8,600.00	$ 3,440.00	$ 1,426.37	$ 7,173.63
4 inch 45 degree Fitting	$ 8,400.00	$ 3,360.00	$ 1,393.20	$ 7,006.80
4 inch Sewer Service Pipe	$ 264,000.00	$ 105,600.00	$ 43,786.29	$ 220,213.71
4 inch Sewer Service Coupling	$ 27,600.00	$ 11,040.00	$ 4,577.66	$ 23,022.34
Bypass Pumping	$ 9,250.00			$ 9,250.00
Full Depth Saw Cutting	$ 28,500.00			$ 28,500.00
MC-70 Asphalt for Prime Coat	$ 14,175.00	$ 5,670.00	$ 2,351.03	$ 11,823.97
Asphalt Concrete (3 inches), Class E	$ 120,000.00	$ 48,000.00	$ 19,902.86	$ 100,097.14
PG 64-22, Asphalt Cement	$ 21,875.00	$ 8,750.00	$ 3,628.13	$ 18,246.87
Base Course	$ 25,500.00	$ 10,200.00	$ 4,229.36	$ 21,270.64
Replacement of Topsoil	$ 2,975.00			$ 2,975.00
Seeding, Fertilizing, and Mulching	$ 27,000.00			$ 27,000.00
Type A-7 Manhole Frame and Lid	$ 19,125.00	$ 7,650.00	$ 3,172.02	$ 15,952.98
				$1,291,403.60

Annual O&M Costs		
Item	Capital Cost	Net Present Worth
Energy	$ -	$ -
Maintenance	$ 8,500.00	$ 110,567.46
Labor	$ 9,360.00	$ 121,754.29
Miscellaneous	$ 500.00	$ 6,503.97
		$ 238,825.71

Total Net Present Worth	**$1,530,229.32**
Equivalent Uniform Annual Cost (20 yrs @ 4.5%)	**$ 68,859.32**

4.7 Wastewater Collection System Alternative 5 – Main Lift Station Rehabilitation

Alternative 5 consists of significant rehabilitation and replacement of the mechanical equipment within the main lift station. Equipment to be replaced is based upon the inspections conducted by Brosz Engineering.

All piping, valves, and air handling equipment are in need of immediate replacement. A sump pump, dehumidifier, and recoating of the interior surfacing are also high priorities at the lift station.

Other items include remounting of the control panel and miscellaneous electrical and mechanical items in order to make the lift station a safe working environment.

Table 4.8 - Opinion of Probable Construction Costs
Collection Alternative 5 - Main Lift Station Rehabilitation

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$ 15,000.00	$ 15,000.00
2	4 inch Flanged Gate Valves	4	EA	$ 975.00	$ 3,900.00
3	4 inch Flanged Check Valves	2	EA	$ 1,200.00	$ 2,400.00
4	Exhaust Fan with Ductwork	1	LS	$ 12,500.00	$ 12,500.00
5	Dehumidifier	1	LS	$ 1,700.00	$ 1,700.00
6	Simplex Sump Pump	1	LS	$ 2,200.00	$ 2,200.00
7	4 inch Ductile Iron Piping	75	LF	$ 125.00	$ 9,375.00
8	Sandblasting and Painting	1	LS	$ 21,500.00	$ 21,500.00
9	Control Panel Remounting	1	LS	$ 4,350.00	$ 4,350.00
10	Drywell Lighting	1	LS	$ 3,800.00	$ 3,800.00
11	Comminutor	1	EA	$ 19,000.00	$ 19,000.00
12	Forcemain Pigging	1	LS	$ 1,200.00	$ 1,200.00
13	Composite AV/AR Manhole Lids	3	EA	$ 700.00	$ 2,100.00
14	Air Release Valves	3	EA	$ 5,250.00	$ 15,750.00
15	Autodialer Alarm System	1	EA	$ 2,850.00	$ 2,850.00
16	Miscellaneous Electrical	1	LS	$ 19,500.00	$ 19,500.00
17	Miscellaneous Mechanical	1	LS	$ 11,000.00	$ 11,000.00
				Total Construction Costs	**$ 148,125.00**
	Contingency / Admin & Legal Fees				
	10% Contingency				$ 14,812.50
	4% Admin / Legal				$ 5,925.00
				Subtotal	**$ 20,737.50**
	Design and Construction Management Services				
	Design Engineering				$ 25,181.25
	Bid Letting and Contract Document Production				$ 2,962.50
	Construction Inspection, Testing, and Management				$ 20,737.50
				Subtotal	**$ 48,881.25**
				TOTAL PROJECT COST	**$ 217,743.75**

Table 4.9 - Equivalent Uniform Annual Costs Analysis
Wastewater Collection Alternative 5 - Main Lift Station Rehabilitation

Initial Capital Costs

Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization	$ 15,000.00			$ 15,000.00
4 inch Flanged Gate Valves	$ 3,900.00	$ 1,560.00	$ 646.84	$ 3,253.16
4 inch Flanged Check Valves	$ 2,400.00	$ 960.00	$ 398.06	$ 2,001.94
Exhaust Fan with Ductwork	$ 12,500.00	$ 5,000.00	$ 2,073.21	$ 10,426.79
Dehumidifier	$ 1,700.00	$ 680.00	$ 281.96	$ 1,418.04
Simplex Sump Pump	$ 2,200.00	$ 880.00	$ 364.89	$ 1,835.11
4 inch Ductile Iron Piping	$ 9,375.00	$ 3,750.00	$ 1,554.91	$ 7,820.09
Sandblasting and Painting	$ 21,500.00			$ 21,500.00
Control Panel Remounting	$ 4,350.00			$ 4,350.00
Drywell Lighting	$ 3,800.00	$ 1,520.00	$ 630.26	$ 3,169.74
Comminutor	$ 19,000.00	$ 7,600.00	$ 3,151.29	$ 15,848.71
Forcemain Pigging	$ 1,200.00			$ 1,200.00
Composite AV/AR Manholes	$ 2,100.00	$ 840.00	$ 348.30	$ 1,751.70
Air Release Valves	$ 15,750.00	$ 6,300.00	$ 2,612.25	$ 13,137.75
Autodialer Alarm System	$ 2,850.00	$ 1,140.00	$ 472.69	$ 2,377.31
Miscellaneous Electrical	$ 19,500.00			$ 19,500.00
Miscellaneous Mechanical	$ 11,000.00			$ 11,000.00
				$ -
				$ -
				$ -
				$ 135,590.35

Annual O&M Costs

Item	Capital Cost	Net Present Worth
Energy	$ 5,500.00	$ 71,543.65
Maintenance	$ 8,500.00	$ 110,567.46
Labor	$ 9,360.00	$ 121,754.29
Miscellaneous	$ 500.00	$ 6,503.97
		$ 310,369.36

Total Net Present Worth	**$ 445,959.71**
Equivalent Uniform Annual Cost (20 yrs @ 4.5%)	**$ 20,067.19**

4.8 Wastewater Treatment Alternative 1 – Do Nothing

A "Do Nothing" alternative would consist of keeping the treatment system as it is currently operating. No improvements would be made to the system. This alternative is not recommended for the fact that all of the current issues that the City is dealing with would not be addressed. Therefore, this alternative will not be discussed any further in the report.

4.9 Wastewater Treatment Alternative 2 – Riprap Lagoon Cells and Replace Splitter Box & Security Fencing

Treatment Alternative 2 consists of shaping the existing lagoon cells and installing riprap. Based upon the onsite inspection of the treatment facility, riprap is needed to prevent the significant erosion problem that the City is currently dealing with, as well as, prevent potential failure of the dikes. Additionally, the security fencing would be replaced around the facility in order to prevent unwanted or unauthorized access.

Table 4.10 - Opinion of Probable Construction Costs
Treatment Alternative 2 - Riprap Lagoon Cells and Security Fencing

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$ 15,000.00	$ 15,000.00
2	Reshaping of Lagoon Interior Slopes	18,000	SY	$ 2.75	$ 49,500.00
3	Type B Drainage Fabric	4,000	SY	$ 4.25	$ 17,000.00
4	Class B Riprap	4,500	Ton	$ 50.00	$ 225,000.00
5	Base Course	500	Ton	$ 28.00	$ 14,000.00
6	Seeding, Fertilizing, and Mulch	1	Ac	$ 3,500.00	$ 3,500.00
7	Lagoon Depth Indicators	4	EA	$ 5,500.00	$ 22,000.00
8	Remove and Replace Splitter Box	1	LS	$ 19,000.00	$ 19,000.00
9	Remove Existing Fencing	1	LS	$ 3,750.00	$ 3,750.00
10	Install Security Fencing	4,000	LF	$ 4.00	$ 16,000.00
				Total Construction Costs	**$ 384,750.00**
	Contingency / Admin & Legal Fees				
	10% Contingency				$ 38,475.00
	4% Admin / Legal				$ 15,390.00
				Subtotal	**$ 53,865.00**
	Design and Construction Management Services				
	Design Engineering				$ 46,170.00
	Bid Letting and Contract Document Production				$ 7,695.00
	Construction Inspection, Testing, and Management				$ 53,865.00
				Subtotal	**$ 107,730.00**
				TOTAL PROJECT COST	**$ 546,345.00**

Table 4.11 - Equivalent Uniform Annual Costs Analysis
Treatment Alternative 2 - Riprap Lagoon Cells and Security Fencing

Initial Capital Costs				
Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization	$ 15,000.00			$ 15,000.00
Reshaping of Lagoon Interior Slopes	$ 49,500.00			$ 49,500.00
Type B Drainage Fabric	$ 17,000.00			$ 17,000.00
Class B Riprap	$ 225,000.00	$ 90,000.00	$ 37,317.86	$187,682.14
Base Course	$ 14,000.00	$ 5,600.00	$ 2,322.00	$ 11,678.00
Seeding, Fertilizing, and Mulch	$ 3,500.00		$ -	$ 3,500.00
Lagoon Depth Indicators	$ 13,000.00	$ 5,200.00	$ 2,156.14	$ 10,843.86
Remove and Replace Splitter Box	$ 19,000.00	$ 7,600.00	$ 3,151.29	$ 15,848.71
Remove Existing Fencing	$ 3,750.00		$ -	$ 3,750.00
Install Security Fencing	$ 16,000.00	$ 6,400.00	$ 2,653.71	$ 13,346.29
				$328,149.00

Annual O&M Costs		
Item	Capital Cost	Net Present Worth
Energy	$ -	$ -
Maintenance	$ 350.00	$ 4,552.78
Labor	$ 350.00	$ 4,552.78
Miscellaneous	$ 500.00	$ 6,503.97
		$ 15,609.52
Total Net Present Worth		$343,758.52
Equivalent Uniform Annual Cost (20 yrs @ 4.5%)		**$ 15,468.13**

4.10 WASTEWATER TREATMENT ALTERNATIVE 3 – INSTALL ALL WEATHER ACCESS ROAD TO WWTF

Alternative 3 for the treatment system would be to design and construct and all weather access road from the City limits to the WWTF site. During periods of heavy rain and snow, the only means to travel out to the site is by snowmobile or 4-wheeler. Therefore, it is recommended that an all weather road be put into place so that the WWTF can be inspected and access can be made out to the WWTF all year long.

Table 4.12 - Opinion of Probable Construction Costs
Treatment Alternative 3 - All Weather Road To Lagoon Site

ITEM	BID ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$ 32,000.00	$ 32,000.00
2	Strip and Stockpile Topsoil	5700	SY	$ 5.00	$ 28,500.00
3	Furnish and Install Borrow Material	15000	CY	$ 11.50	$ 172,500.00
4	Heavy Roadway Shaping	5,700	SY	$ 2.75	$ 15,675.00
5	Base Course	1,350	SY	$ 23.00	$ 31,050.00
6	Water for Granular Material	1,000	Mgal	$ 2.00	$ 2,000.00
7	48 inch RCP	120	LF	$ 225.00	$ 27,000.00
8	48 inch RCP End Sections	4	EA	$ 1,500.00	$ 6,000.00
9	F&I Flowable Fill Around RCP	15	CY	$ 275.00	$ 4,125.00
10	Erosion Control	1	LS	$ 6,000.00	$ 6,000.00
11	Replace Topsoil	5,700	SY	$ 3.50	$ 19,950.00
12	Seeding, Fertilizer, and Mulching	3	Ac	$ 3,750.00	$ 11,250.00
				Total Construction Costs	**$ 356,050.00**
	Contingency / Admin & Legal Fees				
	10% Contingency				$ 35,605.00
	4% Admin / Legal				$ 14,242.00
				Subtotal	**$ 49,847.00**
	Design and Construction Management Services				
	Design Engineering				$ 56,968.00
	Bid Letting and Contract Document Production				$ 7,121.00
	Construction Inspection, Testing, and Management				$ 49,847.00
				Subtotal	**$ 113,936.00**
				TOTAL PROJECT COST	**$ 519,833.00**

Table 4.13 - Equivalent Uniform Annual Costs Analysis
Treatment Alternative 3 - All Weather Access Road To Lagoon Site

Initial Capital Costs				
Item	Capital Cost	Salvage Value	Salvage Present Worth	Net Present Worth
Mobilization	$ 32,000.00		$ -	$ 32,000.00
Strip and Stockpile Topsoil	$ 28,500.00		$ -	$ 28,500.00
Furnish and Install Borrow Material	$ 172,500.00	$ 69,000.00	$ 28,610.36	$143,889.64
Heavy Roadway Shaping	$ 15,675.00		$ -	$ 15,675.00
Base Course	$ 31,050.00	$ 12,420.00	$ 5,149.86	$ 25,900.14
Water for Granular Material	$ 2,000.00		$ -	$ 2,000.00
48 inch RCP	$ 27,000.00	$ 10,800.00	$ 4,478.14	$ 22,521.86
48 inch RCP End Sections	$ 6,000.00	$ 2,400.00	$ 995.14	$ 5,004.86
F&I Flowable Fill Around RCP	$ 4,125.00		$ -	$ 4,125.00
Erosion Control	$ 6,000.00		$ -	$ 6,000.00
Replace Topsoil	$ 19,950.00	$ 7,980.00	$ 3,308.85	$ 16,641.15
Seeding, Fertilizer, and Mulching	$ 11,250.00		$ -	$ 11,250.00
				$313,507.64

Annual O&M Costs		
Item	Capital Cost	Net Present Worth
Energy	$ -	$ -
Maintenance	$ 1,200.00	$ 15,609.52
Labor	$ 850.00	$ 11,056.75
Miscellaneous	$ 500.00	$ 6,503.97
		$ 33,170.24
Total Net Present Worth		$346,677.88
Equivalent Uniform Annual Cost (20 yrs @ 4.5%)		**$ 15,599.50**

4.13 SUMMARY

The City of Dupree has significant need of improvement for their wastewater infrastructure in order to handle current and future needs of the community.

The proposed alternatives will improve the existing system to provide safe and reliable sewer service to the residents of Dupree. However, the alternatives come with a great financial responsibility to its citizens.

Therefore, it is imperative that these recommendations be thoroughly discussed amongst the council in order to make informed decisions as to the priorities of improvements, as well as, means to finance these improvements.

Chapter 5.0
SELECTION OF ALTERNATIVES

This chapter further compares the proposed infrastructure improvements in Chapters 4.0. Formal recommendations are made based upon further comparison based on the system's technical requirements, cost effectiveness, and operational reliability.

5.1 SELECTION METHODOLOGY

A decision matrix was developed for the comparison of the water alternatives. Since there are limited alternatives with the water system, a decision matrix was not developed. The alternatives that were selected in Chapter 4.0 were evaluated further, based on the following criteria:

- *Need*
- *Risk*
- *Capital cost*
- *O&M cost*
- *Footprint*
- *Energy consumption*
- *Reliability*
- *Operations staff familiarity*
- *Maintenance needs*

Since the City does not have significant capital generation capability, it is critical that the alternatives be analyzed in a cost-effective manner that is also sensitive to community needs. As a result, the philosophy for the analysis is to incorporate conservative provisions to effectively resolve the current issues while producing a minimum amount of debt. The selected alternatives must also be reliable and require minimal operation and maintenance.

Table 5.1 – Wastewater Alternative Decision Matrix
Collection Alternatives

Decision Variables	***Alternative #3***	***Alternative #4***	***Alternative #5***
Need	5-10 yrs	5-10 yrs	***Immediate***
Risk	2	2	2
Capital Cost	2	3	2
O&M Costs	2	2	2
Footprint	1	2	1
Energy Consumption	N/A	N/A	1

Reliability	1	1	***1***
Staff Familiarity	2	1	***1***
Maintenance Needs	2	1	***1***
Total	12	12	***11***
RATING LEGEND *1 = Excellent* *2 = Good* *3 = Average*			

It is recommended that Collection Alternatives 2, 5, and 6 be implemented as soon as possible. After Alternative 2 is complete, the televising reports can be reviewed and further analysis can be made as to the condition of the collection system. Alternative 4 will require considerable engineering design and procurement of funding. Therefore, in order to accomplish Alternative 4 in a timely manner, it is imperative that the process start within a reasonable time frame.

Table 5.2 – Wastewater Alternative Decision Matrix
Treatment Alternatives

Decision Variables	***Alternative #2***	***Alternative #3***
Need	***Immediate***	Anytime
Risk	1	2
Capital Cost	2	3
O&M Costs	1	3
Footprint	1	3
Energy Consumption	N/A	N/A
Reliability	1	1
Staff Familiarity	1	1
Maintenance Needs	2	2
Total	***9***	15
RATING LEGEND *1= Excellent* *2 = Good* *3 = Average*		

It is recommended that Treatment Alternative 2 (Riprap and WWTF Fencing) be implemented as soon as possible in order to prevent the current erosion from spreading and to hinder any future erosion problems. Additionally, the existing security fence would be replaced to prevent unauthorized access into the WWTF.

5.2 User Fee Impacts

As part of the cost analysis for the recommended improvements, the estimated impact on user fees has been calculated. Financial data supplied by the City was used to determine the current operational status of the funds.

In order to become eligible for state and federal funding, the City must raise their sewer rates to the minimum required by SD DENR. Currently, this rate is $23 per month. With the raising of the monthly fee and a 30/70 grant/loan split, the City would still be required to raise their sewer rates by another $7.23 per month.

Additionally, a reserve is required so that money can start to be set aside for the refurbishment and/or replacement of sewer main within the community. The amount of revenue required to construct the recommended improvements is detrimental for the City. With the implementation of Collection Alternative 3 and Treatment Alternative 2, the City could possibly see a sewer rate raise of up to $25. Therefore, the City of Dupree is in great need of offsetting the proposed improvements with grant money.

5.3 Capital Finance Plan

The City of Dupree intends to raise their current sewer rates to the minimum set forth by SD DENR. Then the City will apply to various state and federal resources for grant and loan assistance to complete the recommended improvements.

5.4 Environmental Evaluation

Comments from state and federal resource agencies have been obtained concerning any possible environmental impacts from the proposed improvement projects. All correspondence pertaining to this are located in Appendix A.

5.5 View of the Public and Concerned Interest Groups

The City of Dupree will conduct a public hearing on the proposed project improvements. Information regarding this will be submitted after it has been conducted.

5.6 Final Selection of Alternatives

The alternatives recommended for immediate implementation are the televising of the collection system; refurbishment of the main lift station; and installation of riprap and security fencing around the WWTF. These improvements will aid the City in their ability to adequately operate and maintain their wastewater system without expending significant labor and materials towards a failing system that is difficult to maintain compliance with state and federal standards.

After televising of the collection system is complete, a schedule of improvements can be made for the replacement and/or refurbishment of the sewer mains.

5.6.1 *Design of Proposed Improvements*

Design of the proposed improvements will provide satisfactory operation and maintenance of the wastewater infrastructure. Improvements will be designed in accordance with all applicable design criteria including AWWA and Ten States Standards. All industry principals and standards for the design of these systems will be strictly adhered to.

5.6.2 *Implementation of Improvements*

Based upon the recommendations within this report, detailed design of the proposed improvements will be completed by the City of Dupree's consultant and approved by SD DENR, since this is a work of "sanitary significance." Cost estimates have been prepared and are located in Chapter 4.0. The projects will be bid in accordance with state statues, which govern municipal corporations and will be constructed by the lowest responsive bidder.

An implementation schedule for the proposed improvements is shown below in Table 5.3. Several of the tasks listed in the schedule are sequential in nature and failure to maintain the dates for earlier tasks may result in pushing back later tasks. Tasks to be completed in order to progress the project forward through design and construction include:

Table 5.3 - Implementation Schedule

	Task	Date
1	*Submittal of Facility Plan*	August-12
2	*Approval of Facility Plan*	September-12
3	*State Water Plan Application*	January-13
4	*Consolidated Water Facilities Appliation*	March-13
5	*DENR Approval for SRF Loan*	May-13
6	*Notice To Proceed for Design*	May-13
7	*Submittal of Plans and Specifications*	June-13
8	*Approval of Plans and Specifications*	June-13
9	*Solicitation of Bids*	June-13
10	*Opening of Bids*	July-13
11	*Award of Bid*	July-13
12	*Start of Construction*	August-13
13	*End of Construction*	December-13
14	*Project Closeout*	January-14

5.6.3 *Land Acquisition*

No land is needed for the proposed improvements. All work will be completed in existing right-of-way, city owned property, or in easements that have already been obtained. If additional land is needed, the City will work in good faith to purchase the wanted parcel or obtain all necessary leases and/or easements required to perform construction.

5.6.4 *Interagency Agreements*

No cooperative agreements are needed with other agencies. Dupree solely owns, operates, and maintains its wastewater system. Loan documents will be executed with the appropriate lenders, but as Dupree is a municipal corporation, it has the legal authority to enter into such agreements. The City legal advisor will provide counsel on any matters regarding this issue.

Table 5.4 - Funding and Financing of Proposed Alternative(s)

	90/10 Grant/Loan	80/20 Grant/Loan	70/30 Grant/Loan	60/40 Grant/Loan	50/50 Grant/Loan	40/60 Grant/Loan	30/70 Grant/Loan	20/80 Grant/Loan	10/90 Grant/Loan	0/100 Grant/Loan
Annual O&M Costs	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500
Amount Amortized	$ 54,635	$ 109,269	$ 163,904	$ 218,538	$ 273,173	$ 327,807	$ 382,442	$ 437,076	$ 491,711	$ 546,345
Grant Amount	$ 491,711	$ 437,076	$ 382,442	$ 327,807	$ 273,173	$ 218,538	$ 163,904	$ 109,269	$ 54,635	$ -
Multiplication Factor	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049
Annual Payment	$ 2,698.09	$ 5,396.19	$ 8,094.28	$ 10,792.37	$ 13,490.47	$ 16,188.56	$ 18,886.65	$ 21,584.74	$ 24,282.84	$ 26,980.93
Debt Reserve (10%)	$ 270	$ 540	$ 809	$ 1,079	$ 1,349	$ 1,619	$ 1,889	$ 2,158	$ 2,428	$ 2,698
Assets / Other Costs	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00
Total Annual Costs	$ 72,268	$ 75,236	$ 78,204	$ 81,172	$ 84,140	$ 87,107	$ 90,075	$ 93,043	$ 96,011	$ 98,979
Annual Revenue	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240
Surplus / Deficit	$ (6,028)	$ (8,996)	$ (11,964)	$ (14,932)	$ (17,900)	$ (20,867)	$ (23,835)	$ (26,803)	$ (29,771)	$ (32,739)
Minimum Monthly Rate Increase	$1.39	$2.07	$2.75	$3.44	$4.12	$4.80	$5.49	$6.17	$6.85	$7.54

Assumptions:

Number of Years	30 years
Interest Rate	0.0275 or 2.75%
Total Project Costs	$ 546,345.00

* Project Cost is for Treatment Alternative 2 ONLY

Table 5.5 - Funding and Financing of Proposed Alternative(s)

	90/10 Grant/Loan	80/20 Grant/Loan	70/30 Grant/Loan	60/40 Grant/Loan	50/50 Grant/Loan	40/60 Grant/Loan	30/70 Grant/Loan	20/80 Grant/Loan	10/90 Grant/Loan	0/100 Grant/Loan
Annual O&M Costs	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500	$ 61,500
Amount Amortized	$ 190,146	$ 380,293	$ 570,439	$ 760,585	$ 950,732	$ 1,140,878	$ 1,331,025	$ 1,521,171	$ 1,711,317	$ 1,901,464
Grant Amount	$ 1,711,317	$ 1,521,171	$ 1,331,025	$ 1,140,878	$ 950,732	$ 760,585	$ 570,439	$ 380,293	$ 190,146	$ -
Multiplication Factor	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049
Annual Payment	$ 9,390.27	$ 18,780.54	$ 28,170.80	$ 37,561.07	$ 46,951.34	$ 56,341.61	$ 65,731.87	$ 75,122.14	$ 84,512.41	$ 93,902.68
Debt Reserve (10%)	$ 939	$ 1,878	$ 2,817	$ 3,756	$ 4,695	$ 5,634	$ 6,573	$ 7,512	$ 8,451	$ 9,390
Assets / Other Costs	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00	$ 7,800.00
Total Annual Costs	$ 79,629	$ 89,959	$ 100,288	$ 110,617	$ 120,946	$ 131,276	$ 141,605	$ 151,934	$ 162,264	$ 172,593
Annual Revenue	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240	$ 66,240
Surplus / Deficit	$ (13,389)	$ (23,719)	$ (34,048)	$ (44,377)	$ (54,706)	$ (65,036)	$ (75,365)	$ (85,694)	$ (96,024)	$ (106,353)
Minimum Monthly Rate Increase	$3.08	$5.46	$7.84	$10.22	$12.59	$14.97	$17.35	$19.73	$22.10	$24.48

Assumptions:

Number of Years	30 years
Interest Rate	0.0275 or 2.75%
Total Project Costs	$ 1,901,463.60

* Project Cost is for Collection Alternative 3 AND Treatment Alternative 2

Chapter 6.0
CAPITAL IMPROVEMENT PROGRAM

This final chapter describes revenue and budget projections that would be available for repayment. In addition, various financing options are presented and recommendations are made in regards to possible funding options and sources.

6.1 CAPITAL IMPROVEMENT REVENUE

The City wastewater rate schedule is presented below in Table 6.1. Dupree has always used a flat wastewater rate to assess sewer fees. The monthly rate is considerably lower than the minimum recommended of $23.00 per month. This minimum rate is a prerequisite for state and federal funding. It is necessary that the City review their sewer rates to determine if raising them to a minimum level for funding is beneficial to the community.

Table 6.1 - City of Dupree Wastewater Rates and Revenue

Usage Group	Wastewater Rate (Monthly)				
All	($15.00) To be raised to SD DENR minimum $23.00				
# of Connections	**Annual Revenue**				
240	**2013**	**2014**	**2015**	**2016**	**2017**
Annual Income	$ 66,240.00	$ 66,240.00	$ 66,240.00	$ 66,240.00	$ 66,240.00

Based on the current number of total and active services, the estimated annual revenue to be generated once the sewer rates are raised to the recommended minimum is approximately $66,240, as shown in Table 6.1. It is typically recommended that communities set their utility rates so that the necessary funds are obtained to be self-sufficient. Additionally, it is recommended that a community set aside reserve monies for current debts and short-lived asset replacement.

6.2 CAPITAL IMPROVEMENT O&M COSTS

As seen in Table 6.2, the annual O&M costs associated wastewater operations for the City of Dupree range from $61,141 to $126,724. Annual O&M costs for the proposed improvements are expected to remain relatively constant after year 2015. With appropriate reserves in place, the O&M for the proposed improvements should only be affected by yearly inflation rates.

Table 6.3 - Capital Improvement O&M Cost Summary

	2013	2014	2015	2016	2017
Direct Benefits					
Salaries	$ 26,500.00	$ 27,427.50	$ 28,387.46	$ 29,381.02	$ 30,409.36
Social Security	$ 1,555.55	$ 1,609.99	$ 1,666.34	$ 1,724.67	$ 1,785.03
Retirement	$ 1,590.00	$ 1,645.65	$ 1,703.25	$ 1,762.86	$ 1,824.56
Health Insurance	$ 450.00	$ 465.75	$ 482.05	$ 498.92	$ 516.39
Office Related					
Admin / Office	$ 560.00	$ 579.60	$ 599.89	$ 620.88	$ 642.61
Office Supplies	$ 35.00	$ 36.23	$ 37.49	$ 38.81	$ 40.16
Copying	$ 30.00	$ 31.05	$ 32.14	$ 33.26	$ 34.43
Computer Equipment	$ 250.00	$ 258.75	$ 267.81	$ 277.18	$ 286.88
O&M					
Motor Vehicle	$ 3,000.00	$ 3,105.00	$ 3,213.68	$ 3,326.15	$ 3,442.57
Gas and Oil	$ 1,250.00	$ 1,293.75	$ 1,339.03	$ 1,385.90	$ 1,434.40
Maint & Repairs	$ 8,500.00	$ 8,797.50	$ 9,105.41	$ 9,424.10	$ 9,753.95
Jetting Water	$ 1,300.00	$ 1,345.50	$ 1,392.59	$ 1,441.33	$ 1,491.78
Supplies	$ 1,050.00	$ 1,086.75	$ 1,124.79	$ 1,164.15	$ 1,204.90
Minor Equipment	$ 225.00	$ 232.88	$ 241.03	$ 249.46	$ 258.19
Electricity	$ 5,500.00	$ 5,692.50	$ 5,891.74	$ 6,097.95	$ 6,311.38
Miscellaneous					
Professional Services	$ 72,000.00	$ 72,000.00	$ 5,000.00	$ 5,175.00	$ 5,356.13
Conferences	$ 450.00	$ 465.75	$ 482.05	$ 498.92	$ 516.39
Operator Certifications	$ 150.00	$ 150.00	$ 175.00	$ 175.00	$ 200.00
Annual Totals	**$ 124,395.55**	**$ 126,224.14**	**$ 61,141.74**	**$ 63,275.58**	**$ 65,509.10**

6.3 Debt and Reserves

Currently, the City of Dupree does not have existing loans on the wastewater infrastructure. Table 6.3 shows proposed debt reserves, and reserves for short-lived assets. Of the estimated annual wastewater revenue, over eight (8%) is currently needed for O&M, debt repayment, and reserves.

Table 6.3 - Water Capital Improvement Program Reserves

	2013	2014	2015	2016	2017
Debt Reserves					
Existing Debt	$ -	$ -	$ -	$ -	$ -
Proposed Debt	$ -	$ 2,600.00	$ 2,600.00	$ 2,600.00	$ 2,600.00
Short Lived Asset Reserves					
Pumps	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00
Pickup Truck	$ 5,500.00	$ 5,500.00	$ 5,500.00	$ 5,500.00	$ 5,500.00
Computer Equipment	$ 300.00	$ 300.00	$ 300.00	$ 300.00	$ 300.00
Annual Totals	**$ 7,800.00**	**$ 10,400.00**	**$ 10,400.00**	**$ 10,400.00**	**$ 10,400.00**

Short-lived asset reserves for replacement of the City maintenance vehicle will be on a seven-year rotation. Rotation of pumps will be on a ten year rotation. Additionally, reserves for computer equipment are needed to assist the wastewater department in providing sustainment to their aging wastewater infrastructure.

6.4 Funding and Financing Options

Financing infrastructure projects is difficult for a community that has limited resources. As shown in Figure 5.1, if the recommended alternatives were attempted to be financed even with 70/30 grant loan package, the City would be faced to increase their water rates by $7.42 per service per month. Projects such as these frequently consume a significant percentage of community financial resources. Consequently, to finance major capital improvement projects, other methods of obtaining capital must be investigated.

6.5 Federal Loans / Grants

Federal agencies such as the US Department of Agriculture's Rural Development/Rural Utility Service (RD / RUS) have both grant and loan funds available for financing improvements. A preliminary engineering report and pre-application, along with certain other information, is required before a community can submit a full application for project funding.

RD / RUS is the primary federal agency that funds local projects. There are other federal agencies that do assist local communities under "special" circumstances. Some of these agencies include the Federal Emergency Management Agency (FEMA), the Economic Development Administration (EDA) and the US Department of Housing and Urban

Development (HUD). However, these agencies typically do not become involved in funding projects unless there has been a disaster or a major economic development activity is forthcoming.

6.6 State Loans / Grants

The State of South Dakota has several programs that can provide financial assistance for community 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, while others are federal "pass-through" funds.

6.7 SD DENR Programs

The SD DENR has a low interest loan and grant program called 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 monies and is designed to provide financial assistance through grants and loans for water and wastewater projects throughout the state.

6.8 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. 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.

6.9 Other sources For Financing

Typically, state and federal agencies cannot provide 100% of the funding for these infrastructure improvements. Even though it may be difficult for a community to finance projects, there are other resources and programs available that can be used to assist communities in financing projects such as the one being considered by the Town.

6.9.1 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.

6.9.2 *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 has disadvantages. The most obvious drawback is that the fund has to be established for a length of time to allow it to generate sufficient capital for a substantial project. 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.

6.9.3 *Sales Tax*

Sales taxes can also be used to finance capital improvements. State statues 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. Many communities are currently using this method of constructing improvements.

6.9.4 *Bonds*

Another method of generating revenue for 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 legal counsel. The three types are General Obligation (GO), Revenue, and Special Assessment bonds.

6.9.5 *GO Bonds*

GO bonds always require a bond election, with a 60% majority vote needed, because these bonds pledge the taxing authority of the community to repay the bond. GO bonds typically have lower interest rates than Revenue bonds, due to the fact that they are backed by the taxing authority of the community.

6.9.6 *Revenue Bonds*

Revenue bonds, which pledge revenue generated from the project, are often sold to finance capital improvements. These bonds do not require a bond election, but as with any action of a governmental body, the enabling ordinance must be approved by the board. Sales tax revenues can be and are frequently used to repay both Revenue and GO bonds.

6.9.7 *Special Assessment Bonds*

The final type of bond typically used is the Special Assessment bond. These bonds have a limited payback period. Assessment for principal and interest repayment is levied against adjacent owners over a given period of years. These special assessments are collected with property tax payments. Street improvements are frequently financed through the use of special assessment bonds.

6.10 Summary of Financing Options

No one program typically provides 100% of funding to finance a project. Most programs 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 satisfactorily finance capital improvements. SD DENR also has minimum rate requirements that must be met by a community to be eligible for grant funding under the CWFCP. For example, the SD DENR recommends that the minimum rate for municipal wastewater is $23.00 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.

6.11 Funding Recommendations

Due to the cost of the proposed improvements and the limited amount of local finances available, this report recommends that the City of Dupree should:

1. Raise the existing sewer rates to the minimum required to become eligible for state and federal funding. Complete applications for financial assistance to SD DENR SRF and Clean Water Funding Programs, as well as, USDA's Rural Development / Rural Utility Service Water and Sewer Program, and the SD GOED Community Development Block Grant Program.

2. Evaluate the City financial resources, rate structure and various funding sources available to construct capital improvement projects. Investigate if rate increases, debt restructuring, or other funding options may be used to finance all or part of the proposed project.

Appendix A
Environmental Assessment Letters and Maps

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: Brad Schultz
Date: 8/17/2012
(605) 773-6038 Fax: (605) 773-5236
South Dakota Department of Environment And Natural Resources

3030 Airport Rd., Suite A
Box 23 • Pierre, SD 57501
Ph: 605.224.1123
Brosz ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

RECEIVED
JUL 12 2012
AIR QUALITY PROGRAM

July 10, 2012

Brad Schultz
Senior Scientist
Air Quality Program SD DENR
523 East Capitol Avenue
Pierre, SD 57501

RE: Dupree Wastewater System Improvement Project(s) Environmental Assessment; Request for Comments
BEI Job No. 12-510

Dear Mr. Schultz:

Brosz Engineering is assisting the City of Dupree in gathering information for an environmental assessment on a proposed wastewater system improvement project. Although no funding applications have been completed at this stage of the planning process, the community is anticipating applying for loans and grants funded by various state and federal agencies. These agencies include, but are not limited to, the United States Department of Agriculture Rural Development – Rural Utilities Water and Waste program, South Dakota State Revolving Loan Program, and Community Development Block Grant (CDBG) funding that is available through the Small Cities Program, administered by the State of South Dakota.

The proposed wastewater system improvements could include the replacement of sewer mains, refurbishment of the existing main lift station, improvements to the wastewater lagoon system, or a combination thereof.

As part of the planning process, it must be determined if the proposed construction will have any significant environmental impact. Please find enclosed a site map, which indicates the location of Dupree, the city seeking the proposed improvements. The project would be located within the community limits of Dupree, in Sections 29, 30, and 31, Township 13N, Range 21E, of Ziebach County. All construction activities will take place in previously disturbed areas. Therefore, it is believed that there will be no significant impact on the environment.

If your agency has any concern with environmental or permitting issues that may impact the proposed construction, or if you have any technical questions or concerns about the project, do not hesitate to contact me.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

July 20, 2012

Planning, Programs, and Project Management Division

Brosz Engineering, Inc.
Attention: Mr. Chancey E. Shrake
3030 Airport Road, Suite A
Box 23
Pierre, South Dakota 57501

Dear Mr. Shrake:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated July 10, 2012 regarding the environmental report on the proposed wastewater system improvement project located in the City of Dupree, South Dakota. The Corps offers the following comments:

Your plans should be coordinated with the state water quality office in which 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 (USEPA). Please coordinate with the South Dakota Department of Environment and 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 we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area please consult the following floodplain management office.

NFIP Coordinator:
South Dakota
South Dakota, Division of Emergency Management
Attention: Nicole Prince
118 W. Capitol Ave.
Pierre, South Dakota 57501-5070
Nicole.prince@state.sd.us
T-605-773-3238
F-605-773-3580

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 (https://www.nwo.usace.army.mil/html/od-r/district.htm) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Pierre Regulatory Office
Attention: CENWO-OD-R-SD/Naylor
28563 Powerhouse Road, Room 120
Pierre, South Dakota 57501

In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District
Environmental Resources and MRRP Plan Formulation
Attention: CENWO-PM-AC
1616 Capitol Ave.
Omaha, Nebraska 68102-4901

If you have any questions, please contact Mr. Shannon Sjolie of my staff at (402) 995-2887.

Sincerely,

Randal P. Sellers
Acting Chief, Environmental Resources and Missouri River Recovery Program Plan Formulation Section

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTHDAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE, SOUTH DAKOTA 57501-6174

REPLY TO
ATTENTION OF

August 2, 2012

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

Brosz Engineering, Inc.
Attn: Chancey E. Shrake, PE
3030 Airport Rd., Suite A
Pierre, South Dakota 57501

Dear Mr. Shrake,

Reference is made to the preliminary information received July 12, 2012, concerning Department of the Army authorization requirements for the proposed wastewater system treatment improvements in the City of Dupree, Ziebach County, South Dakota.

The Corps' jurisdiction is derived from Section 404 which calls for Federal regulation of the discharge of dredged or fill material into certain waterways, lakes and/or wetlands, (i.e. waters of the United States). Based on the preliminary information received it cannot be determined if the proposed project will involve fill into jurisdictional waters. If the proposed project involves either the discharge of dredged or fill material into waters subject to Federal regulation, it is requested that the project proponent submit an application for a Department of the Army permit.

Regarding your request for comment relative to environmental impacts, this office assesses project impacts, including environmental impacts, after receipt of the detailed, site specific information required via our permit application process.

You can obtain additional information about the Regulatory Program and download forms from our website: https://www.nwo.usace.army.mil/html/od-rsd/frame.html.

If you have any questions or need any assistance, please feel free to contact this office at the above Regulatory Office address or telephone Carolyn Kutz at (605) 224-8531.

Sincerely,

Steven E. Naylor

Steven E. Naylor
Regulatory Program Manager,
South Dakota

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

August 8, 2012

Chancey E. Shrake, P.E.
Project Engineer
Brosz Engineering, Inc.
3030 Airport Road, Suite A
Box 23
Pierre, South Dakota 57501

Dear Mr. Shrake:

The South Dakota Department of Environment and Natural Resources (DENR) reviewed the proposed wastewater system improvement for the city of Dupree. The DENR finds that this construction, using conventional construction techniques, should not cause a violation of any statutes or regulations administered by the DENR on the following recommendations:

1. At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site. Any construction activity that disturbs an area of one or more acres of land must have authorization under the General Permit for Storm Water Discharges Associated with Construction Activities. Contact the DENR for additional information or guidance at 1-800-SDSTORM (737-8676) or http://denr.sd.gov/des/sw/stormwater.aspx.
2. A Surface Water Discharge Permit may be required for any construction dewatering that should occur as a result of the project. Please contact this office for more information.
3. Bear Creek, its tributaries and the wetlands in the project area may be impacted by this project. These water bodies are considered waters of the state and are protected under the South Dakota Surface Water Quality Standards. The discharge of pollutants from any source, including the indiscriminate use of fill material, may not cause destruction or impairment except where authorized under Section 404 of the Federal Water Pollution Control Act. Please contact the U.S. Army Corps of Engineers concerning these permits.

If you have questions concerning these comments, please contact me at (605) 773-3351.

Sincerely,

Patrick Snyder
Environmental Scientist IV
Surface Water Quality Program

3030 Airport Rd., Suite A
Box 23 • Pierre, SD 57501
Ph: 605.224.1123

Brosz ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

July 10, 2012

Pete Gober
Field Supervisor
US Fish and Wildlife Service
420 South Garfield Avenue, Suite 400
Pierre, SD 57501

RE: Dupree Wastewater System Improvement Project(s) Environmental Assessment; Request for Comments
BEI Job No. 12-510

Dear Mr. Gober:

Brosz Engineering is assisting the City of Dupree in gathering information for an environmental assessment on a proposed wastewater system improvement project. Although no funding applications have been completed at this stage of the planning process, the community is anticipating applying for loans and grants funded by various state and federal agencies. These agencies include, but are not limited to, the United States Department of Agriculture Rural Development – Rural Utilities Water and Waste program, South Dakota State Revolving Loan Program, and Community Development Block Grant (CDBG) funding that is available through the Small Cities Program, administered by the State of South Dakota.

The proposed wastewater system improvements could include the replacement of sewer mains, refurbishment of the existing main lift station, improvements to the wastewater lagoon system, or a combination thereof.

As part of the planning process, it must be determined if the proposed construction will have any significant environmental impact. Please find enclosed a site map, which indicates the location of Dupree, the city seeking the proposed improvements. The project would be located within the community limits of Dupree, in Sections 29, 30, and 31, Township 13N, Range 21E, of Ziebach County. All construction activities will take place in previously disturbed areas. Therefore, it is believed that there will be no significant impact on the environment.

If your agency has any concern with environmental or permitting issues that may impact the proposed construction, or if you have any technical questions or concerns about the project, do not hesitate to contact me.

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.

8/1/12 Date

Field Supervisor

A written response if requested within 30 days. If comments are not received by August 10, 2010, the City of Dupree will assume that your agency will accept a determination of no significant impact and will proceed with the remainder of the environmental assessment process at the appropriate stage of project development. No environmental impact statement will be prepared.

The city anticipates completing the construction of the project sometime in 2013 or 2014. Thank you for your prompt attention and cooperation in this matter.

Sincerely,

Chancey E. Shrake, P.E.
Project Engineer
Brosz Engineering, Inc.
(605) 224-1123
chanceys@broszeng.com

Enclosure

RECEIVED

JUL 1 2 2012

Drinking Water Program

3030 Airport Rd., Suite A
Box 23 • Pierre, SD 57501
Ph: 605.224.1123

Brosz
ENGINEERING, INC.
ARCHITECTURE · ENGINEERING · SURVEYING

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: Mark Mayer

Date: 8/2/12 ID No.: 2012105

605-773-3754 Fax 605-773-5286

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES

July 10, 2012

Mark Mayer
Administrator
Drinking Water Program SD DENR
523 East Capitol Avenue
Pierre, SD 57501

RE: Dupree Wastewater System Improvement Project(s) Environmental Assessment; Request for Comments
BEI Job No. 12-510

Dear Mr. Mayer:

Brosz Engineering is assisting the City of Dupree in gathering information for an environmental assessment on a proposed wastewater system improvement project. Although no funding applications have been completed at this stage of the planning process, the community is anticipating applying for loans and grants funded by various state and federal agencies. These agencies include, but are not limited to, the United States Department of Agriculture Rural Development – Rural Utilities Water and Waste program, South Dakota State Revolving Loan Program, and Community Development Block Grant (CDBG) funding that is available through the Small Cities Program, administered by the State of South Dakota.

The proposed wastewater system improvements could include the replacement of sewer mains, refurbishment of the existing main lift station, improvements to the wastewater lagoon system, or a combination thereof.

As part of the planning process, it must be determined if the proposed construction will have any significant environmental impact. Please find enclosed a site map, which indicates the location of Dupree, the city seeking the proposed improvements. The project would be located within the community limits of Dupree, in Sections 29, 30, and 31, Township 13N, Range 21E, of Ziebach County. All construction activities will take place in previously disturbed areas. Therefore, it is believed that there will be no significant impact on the environment.

If your agency has any concern with environmental or permitting issues that may impact the proposed construction, or if you have any technical questions or concerns about the project, do not hesitate to contact me.

A written response if requested within 30 days. If comments are not received by August 10, 2010, the City of Dupree will assume that your agency will accept a determination of no significant impact and will proceed with the remainder of the environmental assessment process at the appropriate stage of project development. No environmental impact statement will be prepared.

The city anticipates completing the construction of the project sometime in 2013 or 2014. Thank you for your prompt attention and cooperation in this matter.

Sincerely,

Chancey E. Shrake, P.E.
Project Engineer
Brosz Engineering, Inc.
(605) 224-1123
chanceys@broszeng.com

Enclosure

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

July 25, 2012

Chancey E. Shrake, P.E.
Brosz Engineering, Inc.
3030 Airport Rd., Suite A, Box 23
Pierre, SD 57501

Re: Environmental Assessment for Dupree Wastewater System Improvement Project(s)

Dear Mr. Shrake:

The Ground Water Quality Program has reviewed the above-referenced project for possible impacts to ground water quality. Based on the limited information submitted in your letter received July 12, 2012, the department does not anticipate adverse impacts to ground water quality by this project.

There have been numerous petroleum and other chemical releases throughout the state. Of the releases reported to the department, four were identified within the Dupree city limits.

- Dupree Oil Company, DENR #99.255, closed case
- Dupree Elevator, DENR #96.270, No Further Action case
- Former Farlee Service Station, DENR #88.251, open case
- Dupree School, DENR #97.344, closed case

However, the location information provided to us regarding releases is sometimes inaccurate or incomplete. If you would like to do more research regarding information on releases reported in South Dakota, the data may be obtained at the following website: http://denr.sd.gov/des/gw/Spills/dbspillsearch.aspx.

If contamination is encountered or created during construction activities, the City of Dupree, or its designated representative must report the contamination to the department at 605.773.3296 and to David Nelson, Environmental Director for the Cheyenne River Sioux Tribe at 605.964.6558. Any contaminated soil encountered or created must be temporarily stockpiled and sampled to determine disposal requirements. Construction materials to be used in the contaminated area should be evaluated for chemical compatibility and adjusted accordingly.

Thank you for providing the opportunity to comment on this project. Please note that plans and specifications for wastewater treatment improvements must be submitted to the department for approval prior to construction. This is to ensure that any improvements and/or expansion plans meet the department recommended design criteria for wastewater systems. If you have any questions regarding the information provided in this letter, please contact me at 605.773.4936.

Sincerely,

Janile Lewis

Janile O. Lewis, E.I.
Engineer I

Cc: Ian Pistulka, Public Works Director, Dupree, SD
Kevin Nelson, Environmental Director, Cheyenne River Sioux Tribe, SD

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
200 Fourth Street SW
Huron, South Dakota 57350

Phone: (605) 352-1200
Fax: (605) 352-1270

July 23, 2012

Mr. Chancey Shrake
Brosz Engineering, Inc
3030 Airport Road, Suite A
Box 23
Pierre, South Dakota 57501

RE: Dupree Wastewater System Improvements – BEI Job No. 12-510

Dear Mr. Shrake:

Thank you for the opportunity to provide comments on the above project. This project will have no effect on prime or important farmland.

The Natural Resources Conservation Service (NRCS) would advise the applicant to consult with the local NRCS and Farm Service Agency offices regarding any United States Department of Agriculture easements or contracts in the project areas that may be affected.

If you have any questions, please contact Barb Hall, GIS Specialist, at (605) 352-1256.

Sincerely,

Barb Hall acting for

DEANNA PETERSON
State Soil Scientist

Chancey Shrake

From: Sarah.Land@state.sd.us
Sent: Thursday, July 12, 2012 8:57 AM
To: chanceys@broszeng.com
Subject: Dupree Wastewater System Improvement Project Request for Comments

Chancey,

Thank you for your letter informing us of the proposed wastewater system improvements in the City of Dupree. I would like to point you to the local floodplain administrators to ensure the project complies with any local floodplain ordinances for the City of Dupree and Ziebach County. They will be able to ensure the proposed project meets the standards of the local floodplain ordinance.

City of Dupree
Jason Donovan
(605) 365-5181
dcouncil@lakotanetwork.com

Ziebach County
Cindy Longbrake
(605) 365-5157
Cindy.longbrake@state.sd.us

Thank you,

Sarah Land, MPA
NFIP Coordinator
SD Office of Emergency Management
118 W. Capitol Avenue
Pierre, SD 57501
(605) 773-3231 (P)
(605) 773-3580 (F)

DEPARTMENT OF GAME, FISH, AND PARKS
Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

July 16, 2012

Mr. Chancey Shrake, P.E.
Brosz Engineering, Inc.
3030 Airport Road, Suite A
Box 23
Pierre, SD 57501

RE: Dupree Wastewater System Improvement Project
BEI Job No. 12-510

Dear Mr. Shrake:

The South Dakota Department of Game, Fish and Parks, Wildlife Division, has reviewed the above project involving improvements to the wastewater system in the City of Dupree, 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 other questions, please feel free to contact me at 605.773.6208.

Sincerely,

Leslie Murphy

Leslie Murphy
Senior Wildlife Biologist

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: Vonn Kallemeyn
Date: July 16 2012
South Dakota Department of Environment & Natural Resources
Phone: (605) 773-3153 Fax: (605) 773-6035

3030 Airport Rd., Suite A
Box 23 • Pierre, SD 57501
Ph: 605.224.1123

Brosz ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

July 10, 2012

Vonnie Kallemeyn
Administrator
Waste Management Program SD DENR
523 East Capitol Avenue
Pierre, SD 57501

RE: Dupree Wastewater System Improvement Project(s) Environmental Assessment; Request for Comments
BEI Job No. 12-510

Dear Ms. Kallemeyn:

Brosz Engineering is assisting the City of Dupree in gathering information for an environmental assessment on a proposed wastewater system improvement project. Although no funding applications have been completed at this stage of the planning process, the community is anticipating applying for loans and grants funded by various state and federal agencies. These agencies include, but are not limited to, the United States Department of Agriculture Rural Development – Rural Utilities Water and Waste program, South Dakota State Revolving Loan Program, and Community Development Block Grant (CDBG) funding that is available through the Small Cities Program, administered by the State of South Dakota.

The proposed wastewater system improvements could include the replacement of sewer mains, refurbishment of the existing main lift station, improvements to the wastewater lagoon system, or a combination thereof.

As part of the planning process, it must be determined if the proposed construction will have any significant environmental impact. Please find enclosed a site map, which indicates the location of Dupree, the city seeking the proposed improvements. The project would be located within the community limits of Dupree, in Sections 29, 30, and 31, Township 13N, Range 21E, of Ziebach County. All construction activities will take place in previously disturbed areas. Therefore, it is believed that there will be no significant impact on the environment.

If your agency has any concern with environmental or permitting issues that may impact the proposed construction, or if you have any technical questions or concerns about the project, do not hesitate to contact me.

A written response if requested within 30 days. If comments are not received by August 10, 2010, the City of Dupree will assume that your agency will accept a determination of no significant impact and will proceed with the remainder of the environmental assessment process at the appropriate stage of project development. No environmental impact statement will be prepared.

The city anticipates completing the construction of the project sometime in 2013 or 2014. Thank you for your prompt attention and cooperation in this matter.

Sincerely,

Chancey E. Shrake, P.E.
Project Engineer
Brosz Engineering, Inc.
(605) 224-1123
chanceys@broszeng.com

Enclosure

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands Inventory

Jul 10, 2012

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

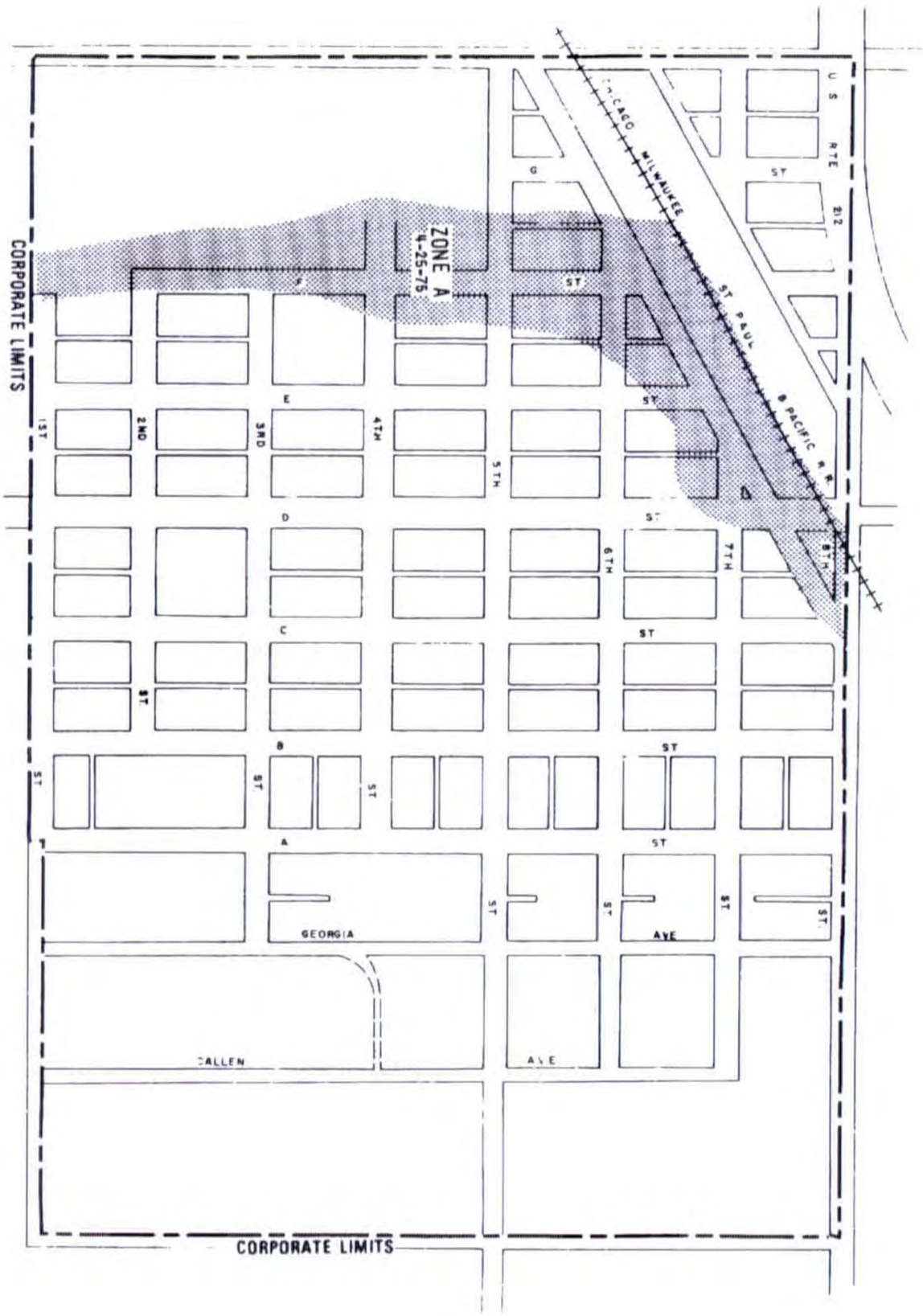
- Herbaceous
- Forested/Shrub

Status

- Digital
- Scan
- Non-Digital
- No Data

User Remarks:

City of Dupree, SD



APPROXIMATE SCALE

250 0 500 1000 1500 FEET

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Insurance Administration

CITY OF DUPREE, SD
(ZIEBACH CO.)

Effective Date:

APRIL 25, 1975

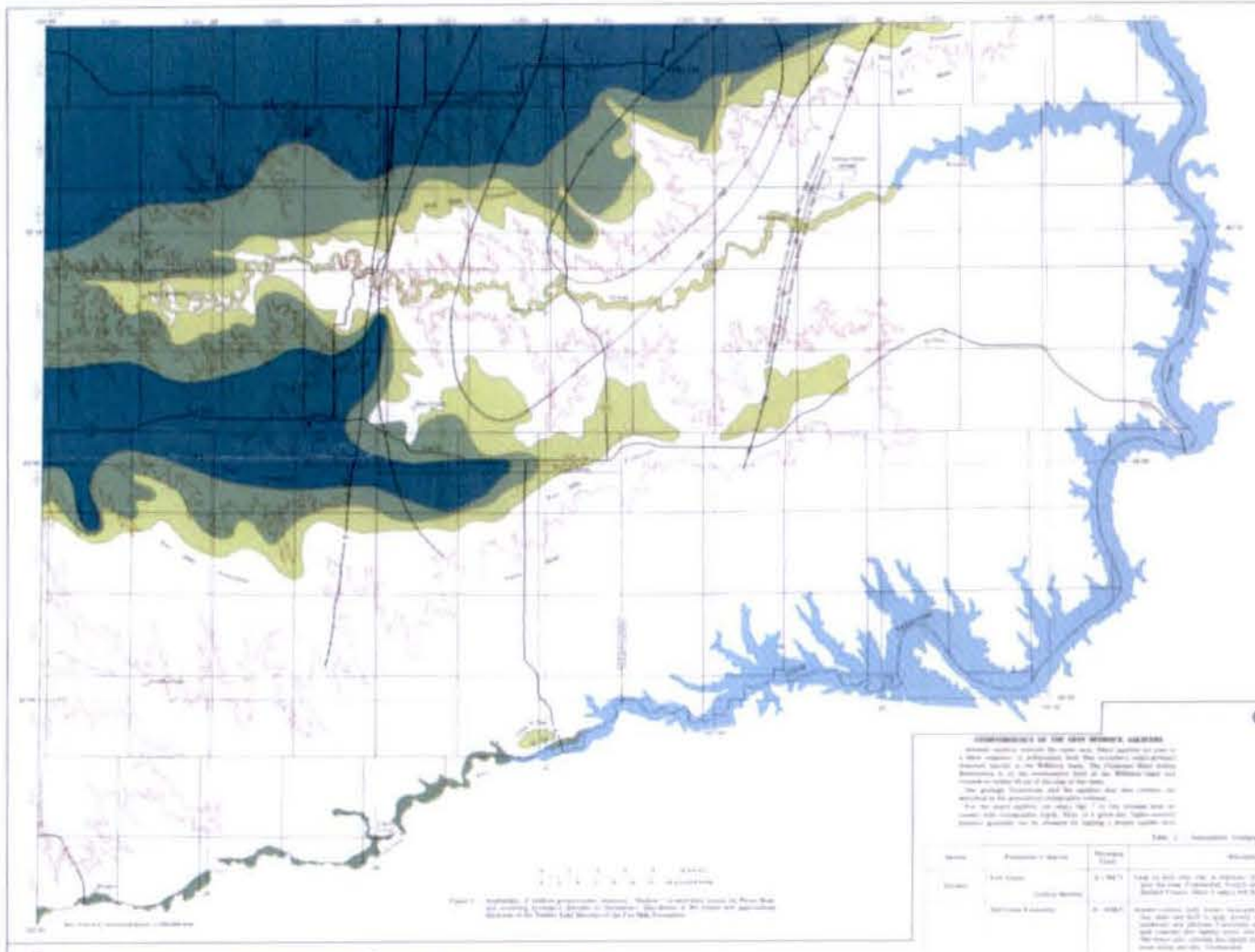
1000 1500 FEET

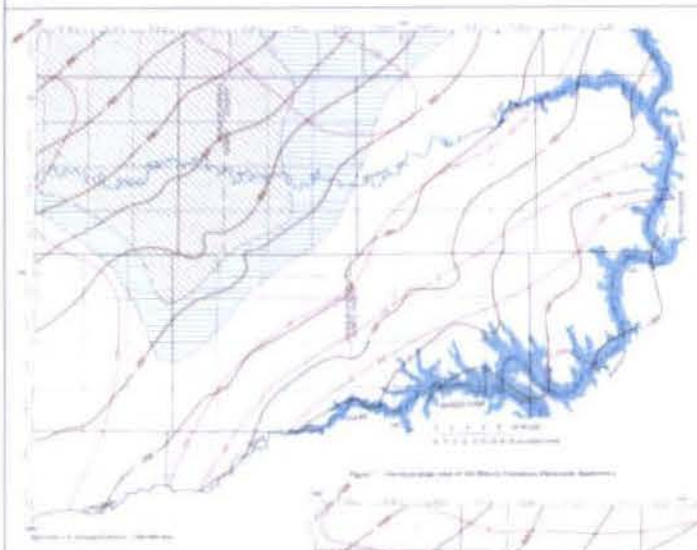
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

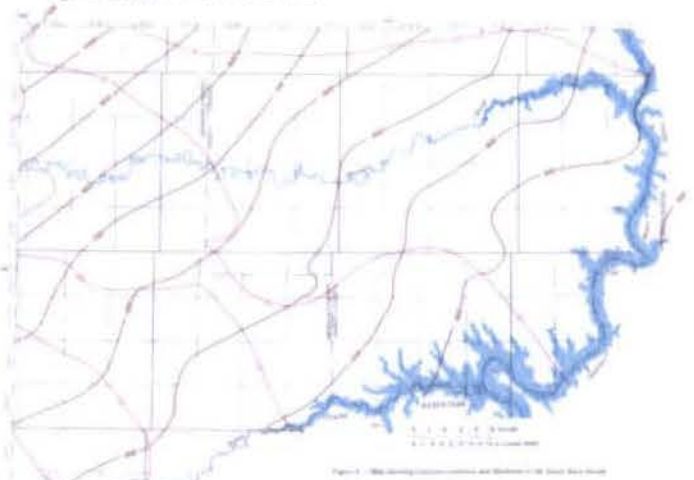
PREPARED AS PART OF THE PROGRAM OF THE
DEPARTMENT OF THE INTERIOR
FOR DEVELOPMENT OF THE MISSOURI RIVER BASIN

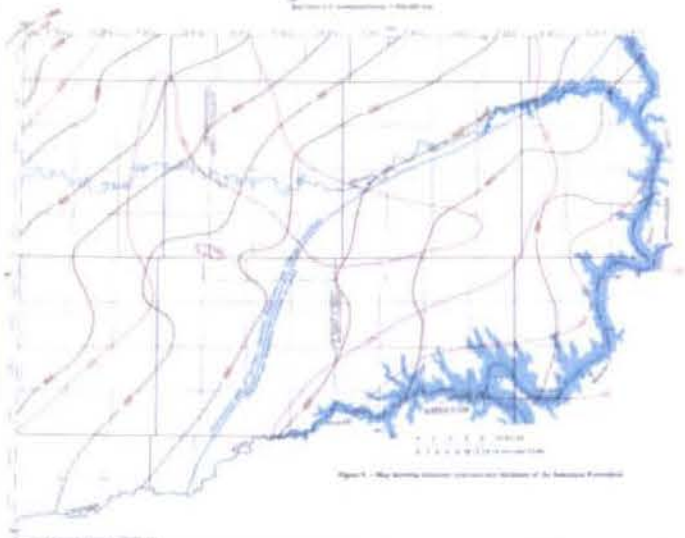
HYDROLOGIC INVESTIGATIONS
ATLAS HA-

SHALLOW GROUND-WATER RESOURCES









GEOHYDROLOGY OF THE DEEP BEDROCK AQUIFERS

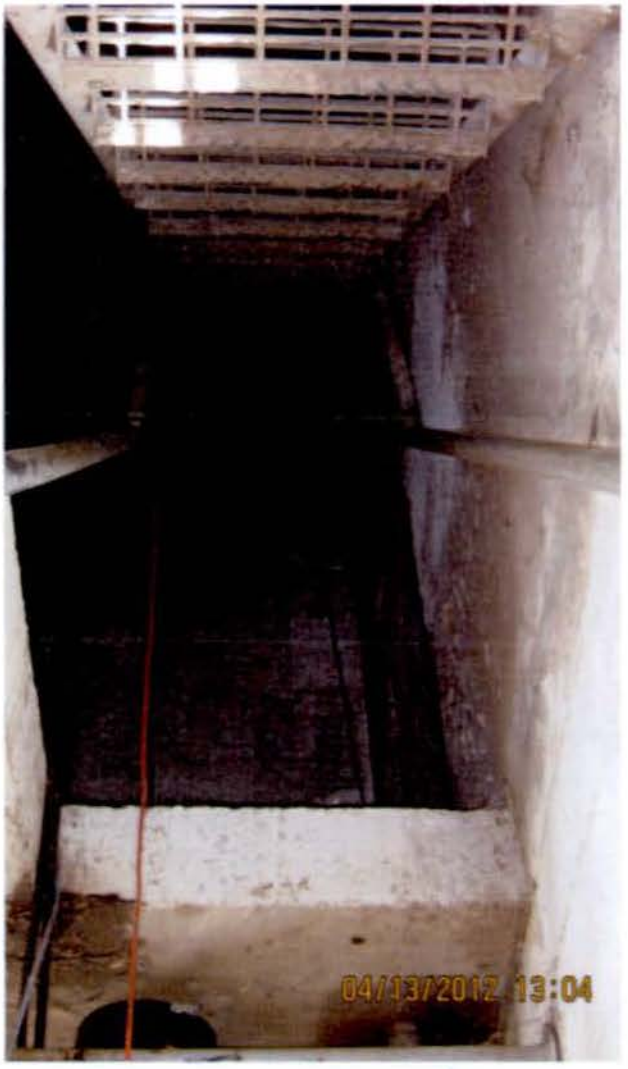
GEOHYDROLOGY OF THE CHEYENNE RIVER INDIAN RESERVATION, SOUTH DAKOTA

By
Lewis Howells

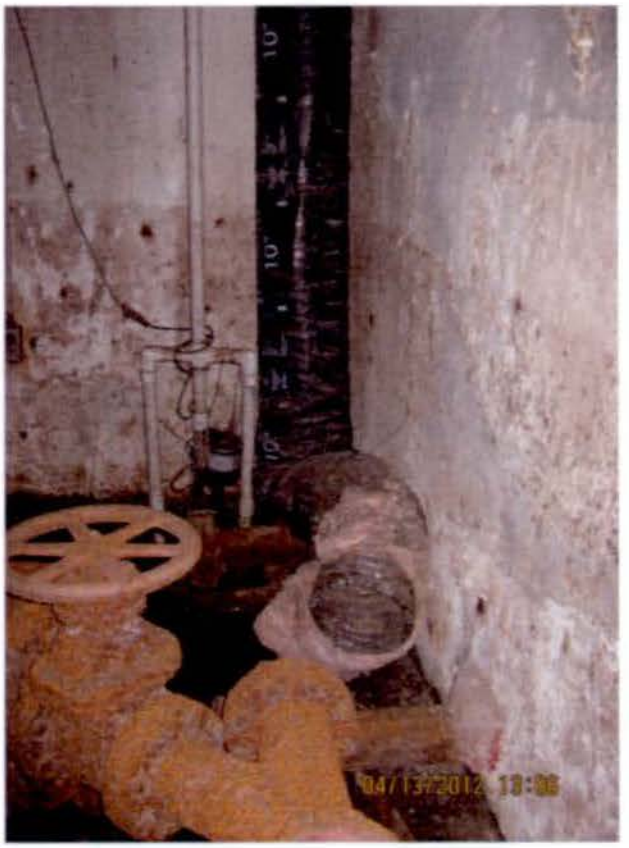
1979

Appendix B
Wastewater System Photographs

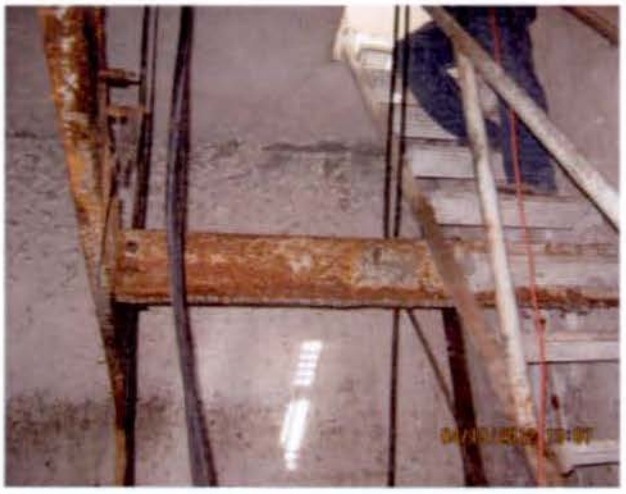
Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING



Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING



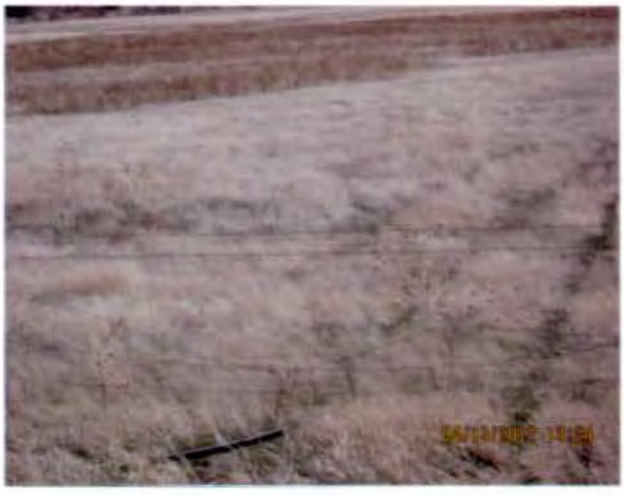
Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING



Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

Brosz
ENGINEERING INC
ARCHITECTURE ENGINEERING SURVEYING

Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING



Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

Brosz
ENGINEERING INC
ARCHITECTURE ENGINEERING SURVEYING

Brosz
ENGINEERING INC
ARCHITECTURE ENGINEERING SURVEYING

Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

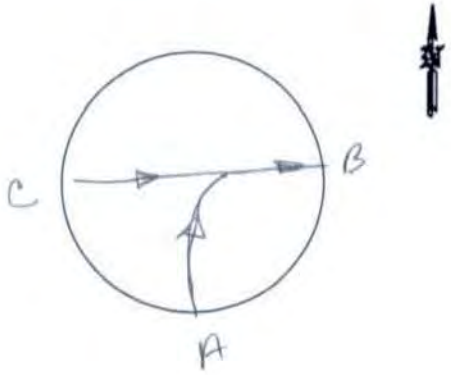
Appendix C
Manhole Inspection Forms

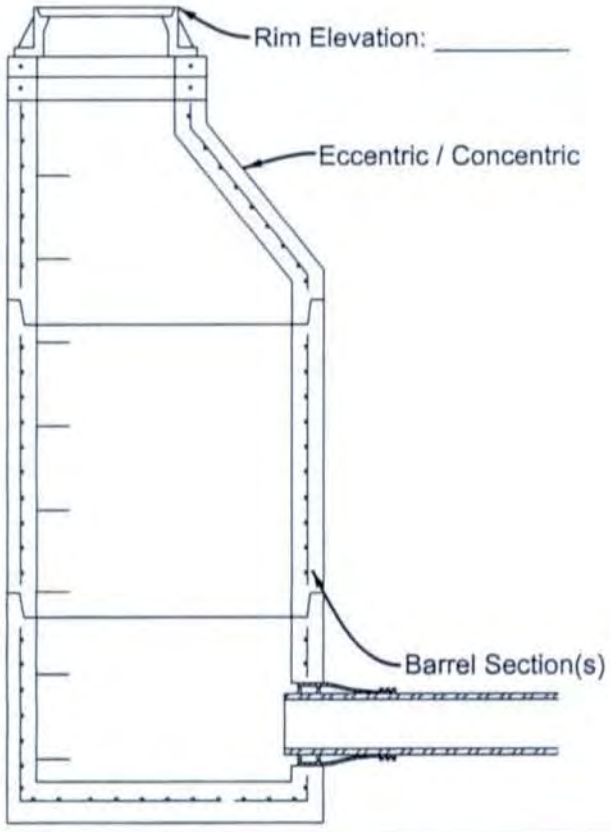
MANHOLE INSPECTION FORM

Project: DUPREE

Date: 7/7/2012

Inspector: TC & CS





Location: _____

MH ID: 16 Point #: _____

Present Use: Storm (Sanitary) Other: _____

Surface Cover: ~~Asphalt~~

Grade to Manhole: Flush Below 2" Above _____

Cover Diameter: 24

Cover Condition: Good Fair (Poor)

Casting Condition: Good (Fair) Poor Height: _____

Riser Rings: Qty: 8 Alignment: _____ Type: Cone

Manhole Type: (Precast) Brick Block Combination

Manhole Condition: Good Fair (Poor)

Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type: Good Fair (Poor) None

Bench Condition: Good (Fair) Poor

Drop Manhole Type: Outside Inside (None)

Infiltration: Yes (No)

Infiltration Location: Pipe Invert Casting Walls

Inverts:

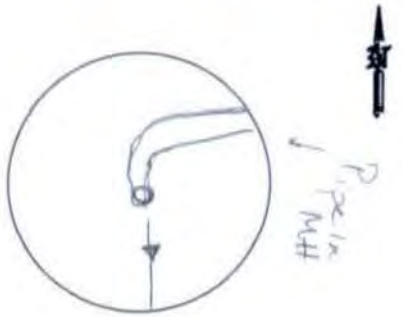
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	10 1/4
B	8"	VCP	E	10"
C	8"	VCP	W	10 1/2
D				
E				
F				

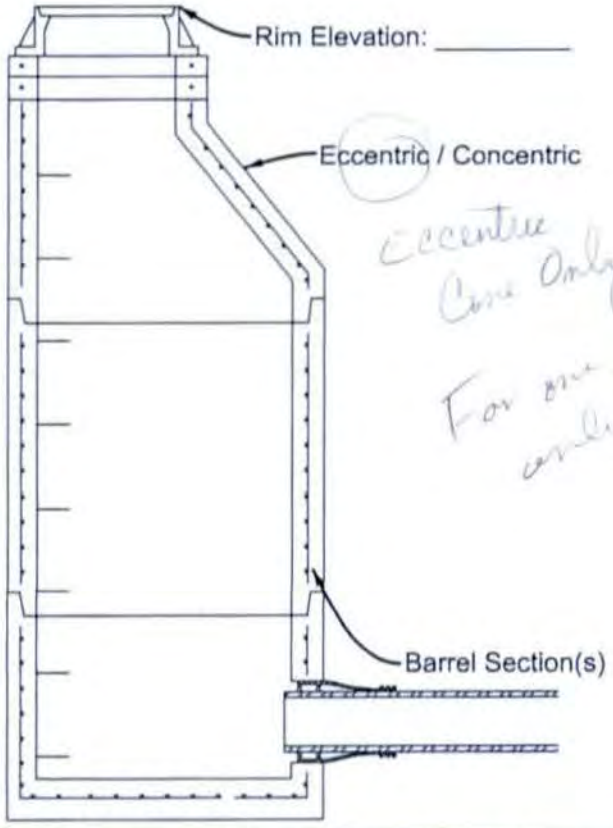
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/2012

Inspector TW & CS





Eccentric Cone Only

For one house only?

Location _____

MH ID _____ Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 1" Above _____

Cover Diameter 24"

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 3 Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod Cast Reinf. Plastic Other: _____

Step Type Good Fair Poor (None)

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

Inverts:

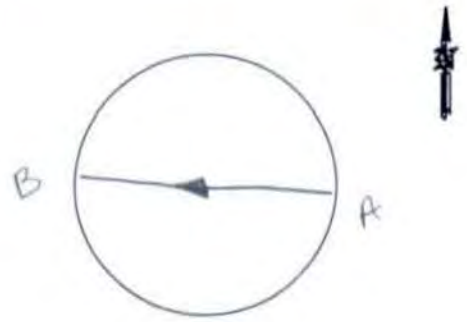
Pipe	Size	Type	Card. Dir.	Cut
A				
B				4 90
C				
D				
E				
F				

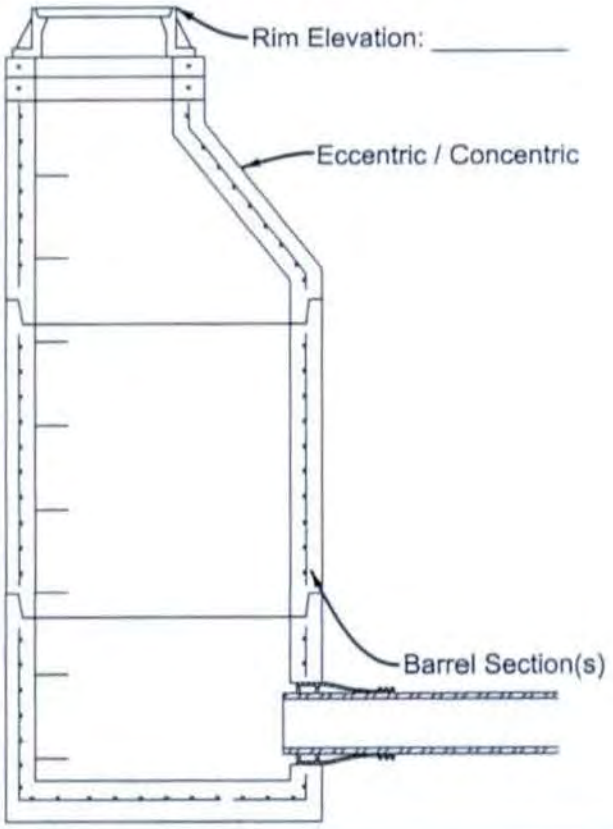
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/12

Inspector CS & TW





Location _____

MH ID 10 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 1½" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 5 Alignment: OK Type: cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

Inverts:

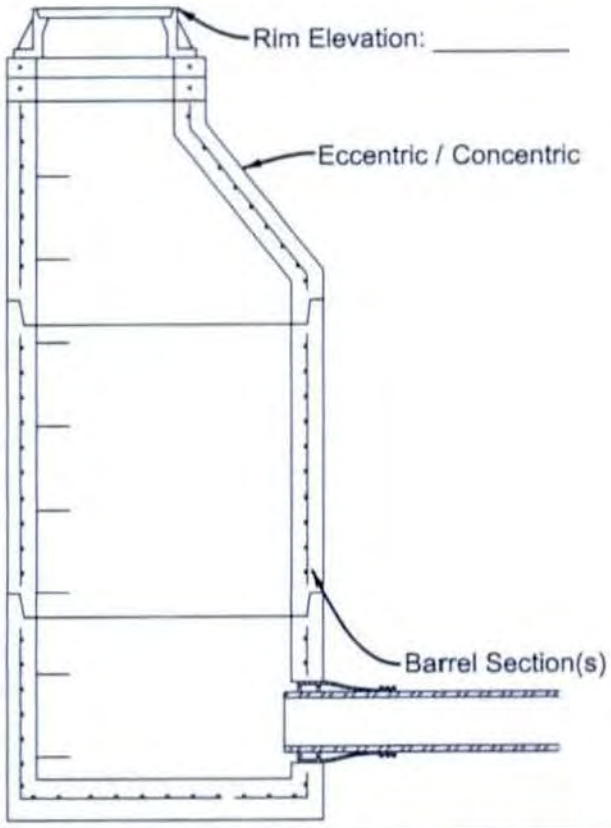
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	E	8 00
B	6	VCP	W	8 05
C				
D				
E				
F				

MANHOLE INSPECTION FORM

Project DUPKEE

Date 7/7/12

Inspector TW & CS



Location _____

MH ID 21 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 3" Above _____

Cover Diameter _____

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 3 Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

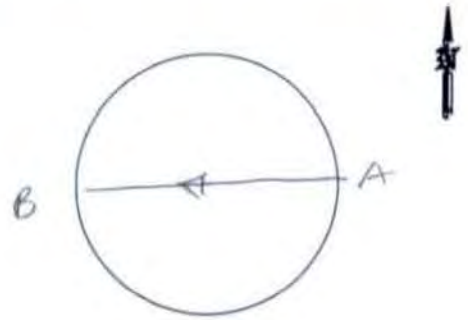
Inverts:

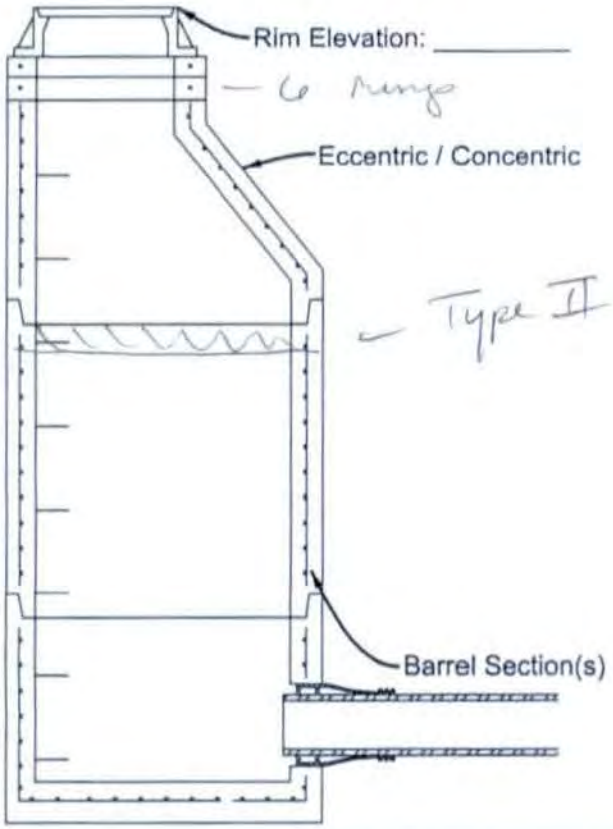
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	N	10^{85}
B	8"	VCP	S	10^{70}
C				
D				
E				
F				

MANHOLE INSPECTION FORM

Project: Dupree
Date: 7/7/12
Inspector: CS & TW

Location: _____
MH ID: 9 Point #: _____
Present Use: Storm (Sanitary) Other: _____
Surface Cover: Asphalt
Grade to Manhole: Flush (Below) 1" Above _____
Cover Diameter: _____
Cover Condition: Good (Fair) Poor
Casting Condition: Good (Fair) Poor Height: _____
Riser Rings: Qty: _____ Alignment: _____ Type: _____
Manhole Type: Precast Brick Block Combination
Manhole Condition: Good Fair (Poor)
Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____
Step Type: Good Fair (Poor) None
Bench Condition: Good Fair (Poor)
Drop Manhole Type: Outside Inside (None)
Infiltration: (Yes) No
Infiltration Location: Pipe (Invert) Casting (Walls)





Inverts:

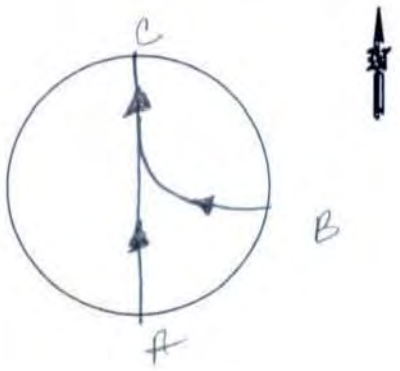
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	E	8 6.3
B	8"	VCP	W	8 6.7
C				
D				
E				
F				

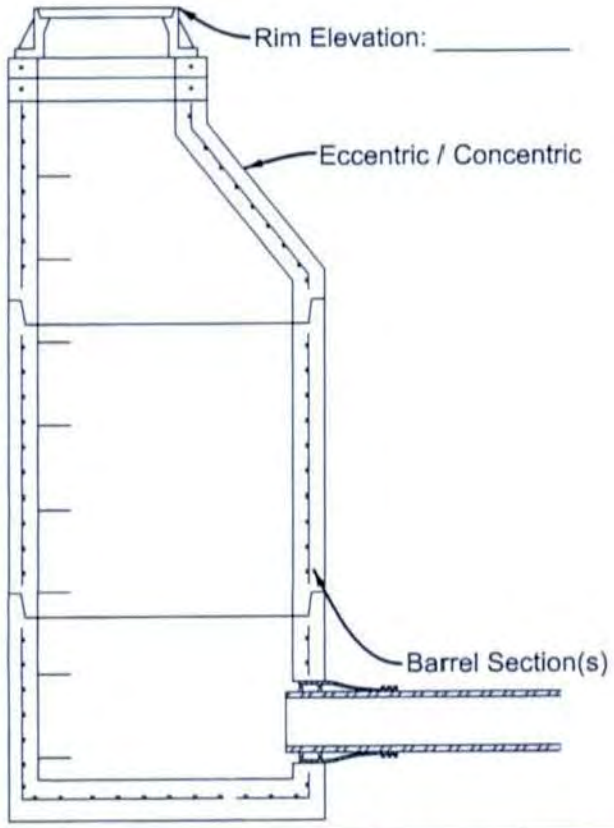
MANHOLE INSPECTION FORM

Project DUFFERIN

Date 7/7/12

Inspector CS & TW





Location _____

MH ID 8 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 1 1/2" Above _____

Cover Diameter _____

Cover Condition Good Fair Poor

Casting Condition Good Fair Poor Height: _____

Riser Rings Qty: 12 Alignment: off Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good Fair (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) (Poor)

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

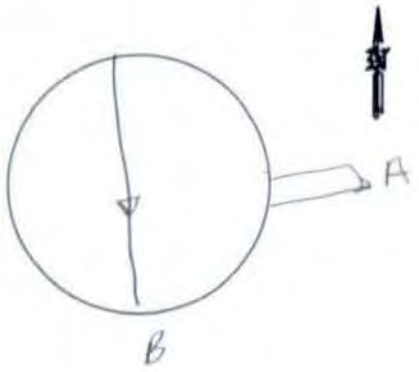
Infiltration Location Pipe (Invert) Casting (Walls)

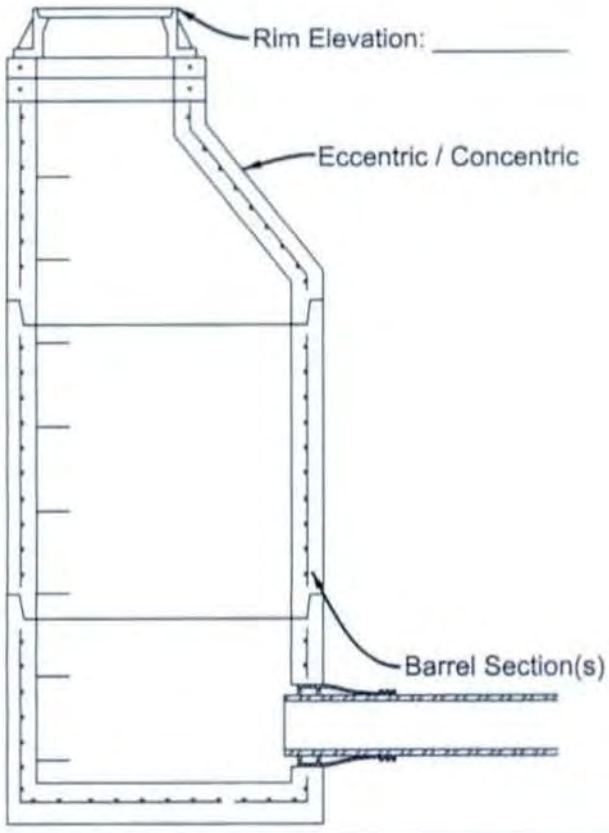
Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	7.80
B	8"	VCP	E	7.72
C	8"	VCP	N	7.82
D				
E				
F				

MANHOLE INSPECTION FORM

Project: DUPREE
Date: 7/7/12
Inspector: CS + TW





Location: _____
MH ID: 13 Point #: _____
Present Use: Storm (Sanitary) Other: _____
Surface Cover: Asphalt
Grade to Manhole: Flush (Below) 1" Above _____
Cover Diameter: _____
Cover Condition: Good (Fair) Poor
Casting Condition: Good (Fair) Poor Height: _____
Riser Rings: Qty: 2 Alignment: _____ Type: _____
Manhole Type: (Precast) Brick Block Combination
Manhole Condition: (Good) Fair Poor
Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____
Step Type: Good (Fair) Poor None
Bench Condition: (Good) Fair Poor
Drop Manhole Type: Outside Inside (None)
Infiltration: Yes (No)
Infiltration Location: Pipe Invert Casting Walls

Inverts:

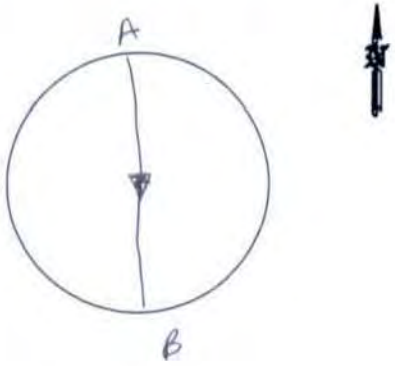
Pipe	Size	Type	Card. Dir.	Cut
A	4"	PVC	SSE	5 40
B	8"	VCP	S	8 87
C				
D				
E				
F				

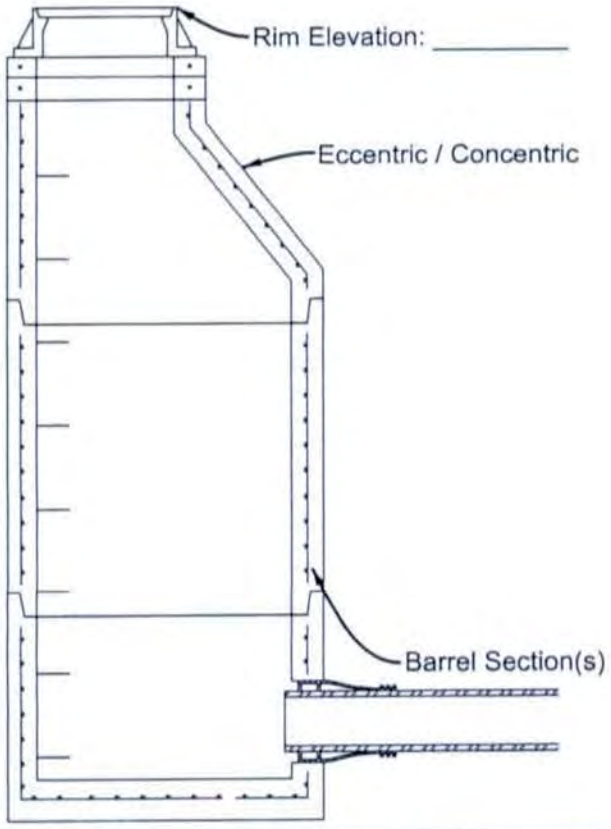
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/R

Inspector CS & TW





Location _____

MH ID 12 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 2" Above _____

Cover Diameter _____

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: 7"

Riser Rings Qty: 2 Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition (Good) Fair Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type (Good) Fair Poor None

Bench Condition (Good) Fair Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

Inverts:

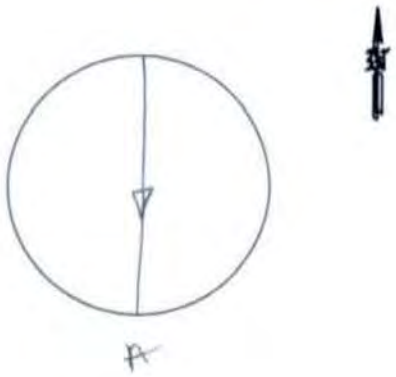
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	N	8^{25}
B	8"	VCP	S	8^{35}
C				
D				
E				
F				

MANHOLE INSPECTION FORM

Project: DUKEE

Date: 7/7/12

Inspector: CS & TW



Location: _____

MH ID: 103 Point #: _____

Present Use: Storm (Sanitary) Other: _____

Surface Cover: Asphalt

Grade to Manhole: (Flush) Below _____ Above _____

Cover Diameter: 24

Cover Condition: Good (Fair) Poor

Casting Condition: Good (Fair) Poor Height: _____

Riser Rings: Qty: 4 Alignment: SSD Type: Conc

Manhole Type: (Precast) Brick Block Combination

Manhole Condition: Good (Fair) Poor

Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____

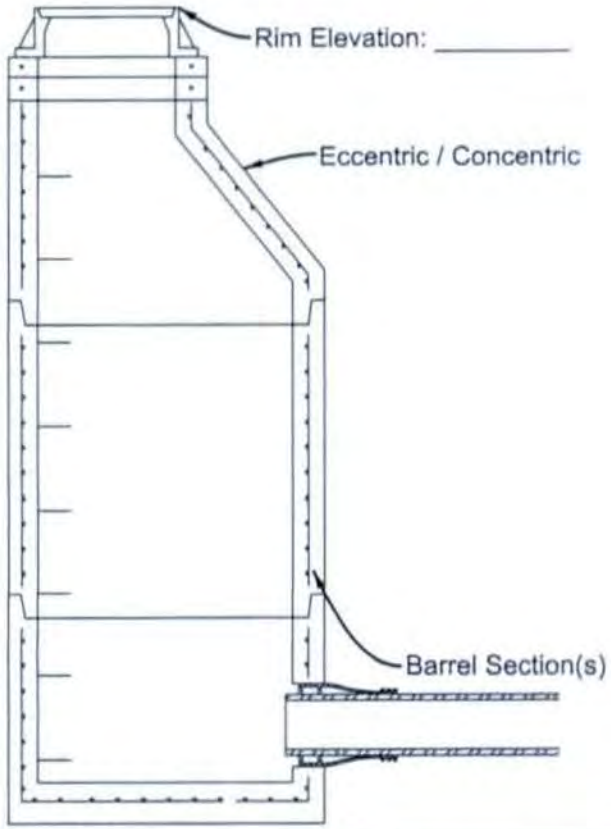
Step Type: Good (Fair) Poor None

Bench Condition: Good (Fair) Poor

Drop Manhole Type: Outside Inside (None)

Infiltration: Yes (No)

Infiltration Location: Pipe Invert Casting Walls



Inverts:

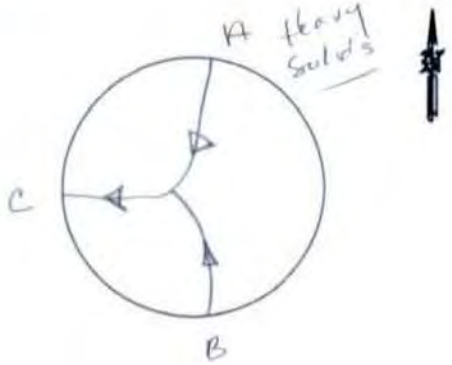
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	7 4/6
B				
C				
D				
E				
F				

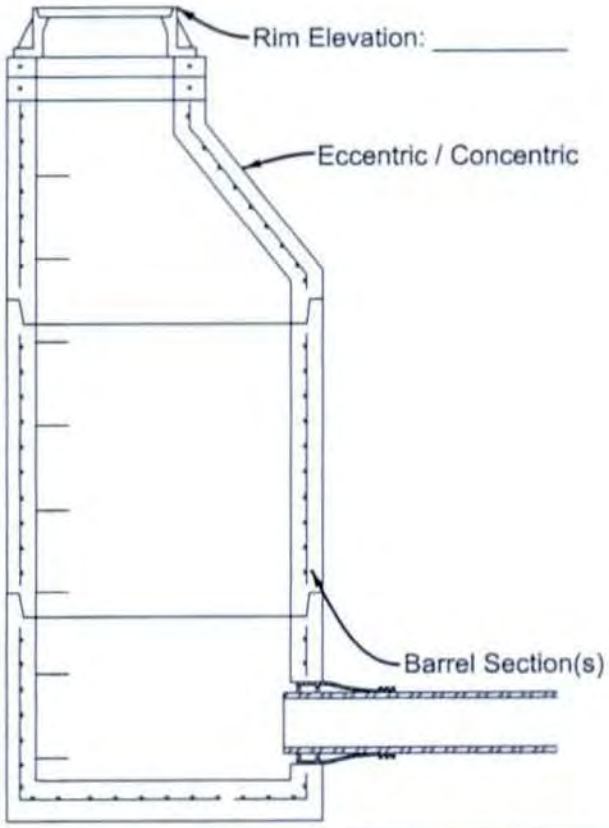
MANHOLE INSPECTION FORM

Project Durees

Date 7/7/12

Inspector CS & TW





Location _____

MH ID _____ Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 1" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 1 Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	N	7 45
B	8"	VCP	S	8 35
C	8"	VCP	W	8 45
D				
E				
F				

MANHOLE INSPECTION FORM

Project _____

Date _____

Inspector _____

Location _____

MH ID 11 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush Below 3" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: 7"

Riser Rings Qty: 4 Alignment: 88 Type: cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good Fair (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

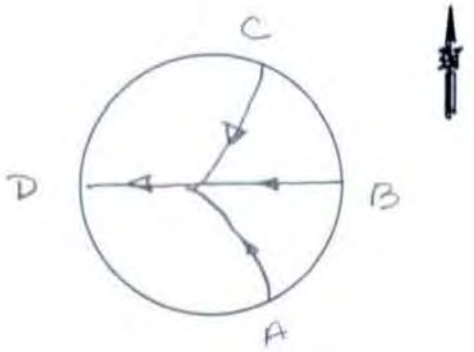
Step Type Good Fair (Poor) None

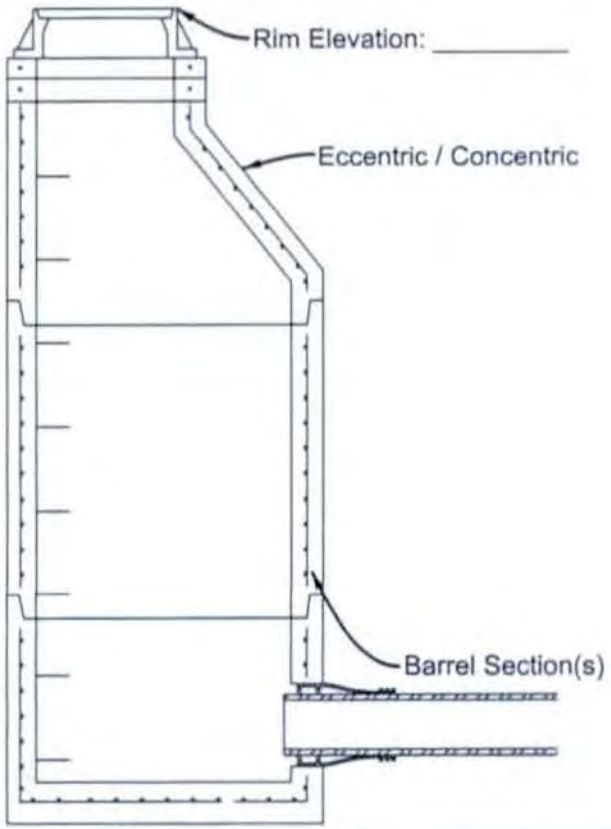
Bench Condition Good (Fair) (Poor)

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)





Inverts:

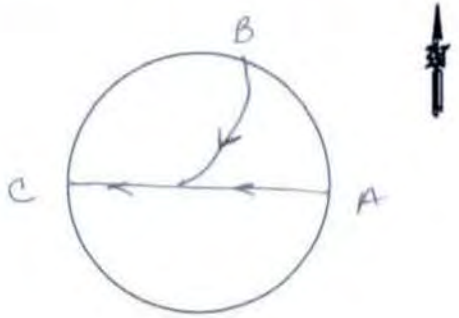
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	$8^{6.5}$
B	8"	Sch 40 PVC	E	$8^{8.5}$
C	8"	VCP	N	$8^{3.4}$
D	8"	VCP	W	$9^{0.0}$
E				
F				

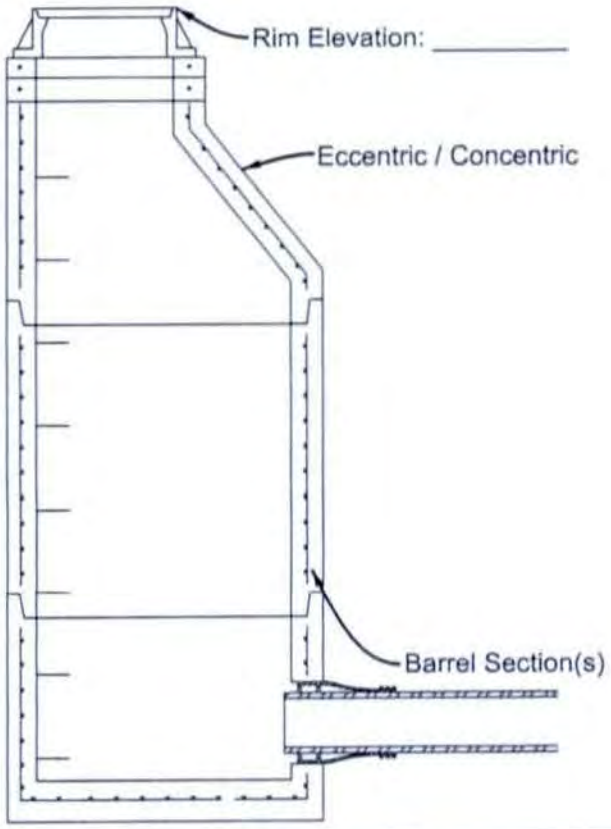
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/12

Inspector TW & CS





Location _____

MH ID 101 Point # _____

Present Use Storm Sanitary Other: _____

Surface Cover Asphalt

Grade to Manhole Flush Below 1" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 16 Alignment: OK Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) (Poor)

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

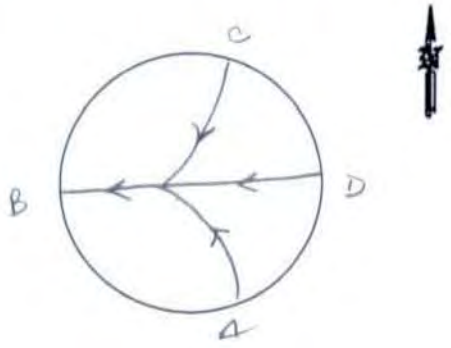
Infiltration Location Pipe Invert Casting Walls

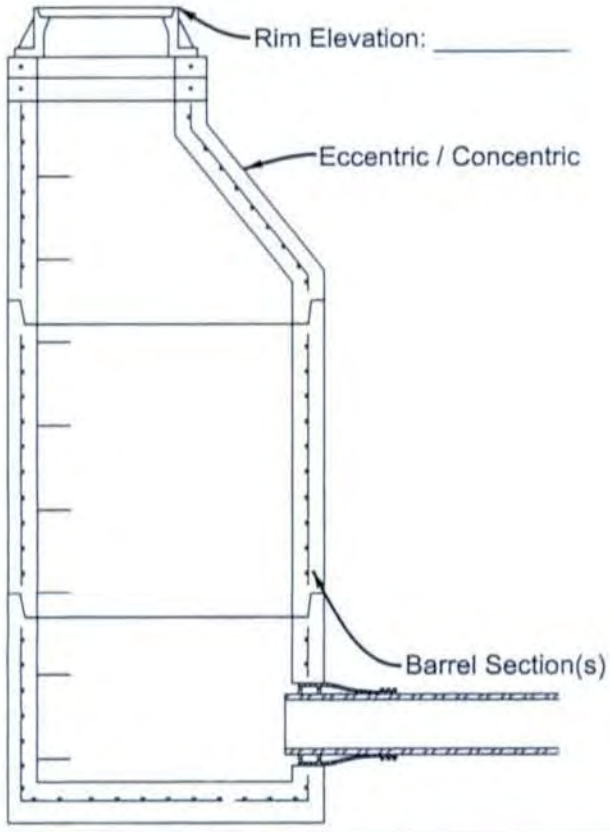
Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	E	14 25
B	8"	VCP	N	14 15
C	8"	VCP	W	14 30
D				
E				
F				

MANHOLE INSPECTION FORM

Project: DURKEE
Date: 7/7/12
Inspector: TW & CS





Location: _____
MH ID: 14 Point #: _____
Present Use: Storm (Sanitary) Other: _____
Surface Cover: Asphalt
Grade to Manhole: Flush (Below) 1" Above _____
Cover Diameter: 24
Cover Condition: Good (Fair) Poor
Casting Condition: Good (Fair) Poor Height: _____
Riser Rings: Qty: 3 Alignment: RD Type: cone
Manhole Type: (Precast) Brick Block Combination
Manhole Condition: Good Fair (Poor)
Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____
Step Type: Good Fair (Poor) None
Bench Condition: Good (Fair) (Poor)
Drop Manhole Type: Outside Inside (None)
Infiltration: (Yes) No
Infiltration Location: Pipe Invert Casting (Walls)

Inverts:

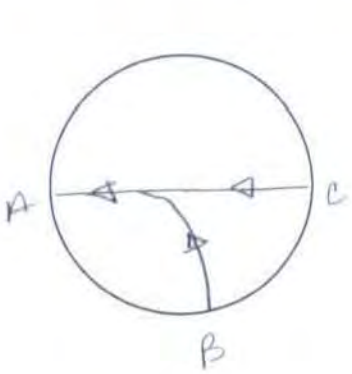
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	$7^{0.1}$
B	8"	VCP	W	$7^{1.5}$
C	8"	VCP	N	$7^{0.4}$
D	8"	VCP	E	$7^{2.0}$
E				
F				

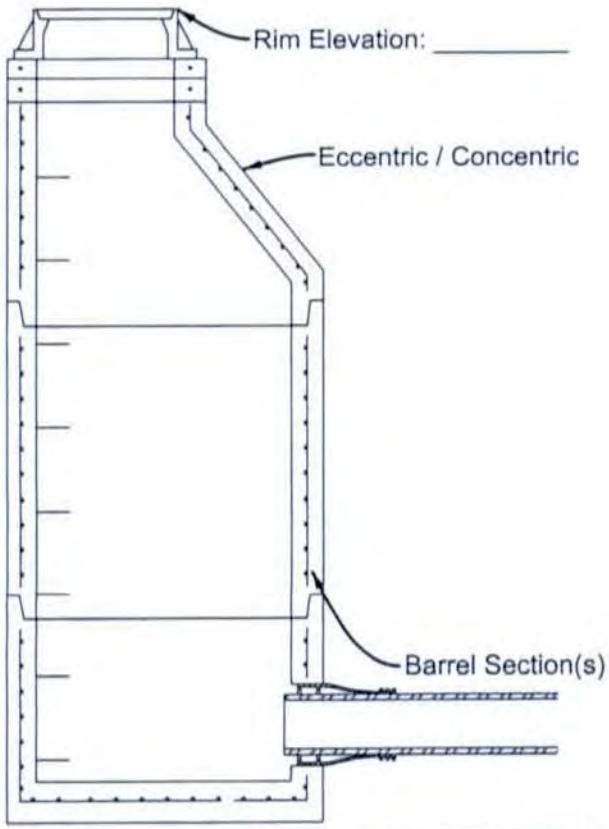
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/12

Inspector TW & CS





Location _____

MH ID 20 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 2" Above _____

Cover Diameter 24

Cover Condition Good Fair (Poor) Broken in two

Casting Condition Good Fair (Poor) Height: _____

Riser Rings Qty: 4 Alignment: ~~offset~~ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good (Fair) (Poor) None

Bench Condition Good (Fair) (Poor)

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)

Inverts:

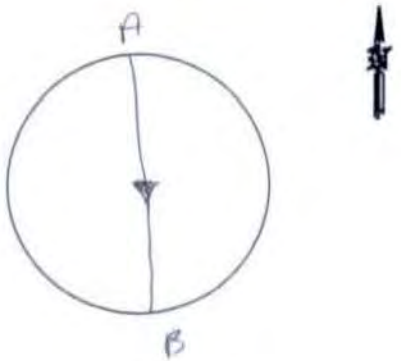
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	W	7^{45}
B	8"	VCP	S	7^{13}
C	8"	VCP	E	7^{42}
D				
E				
F				

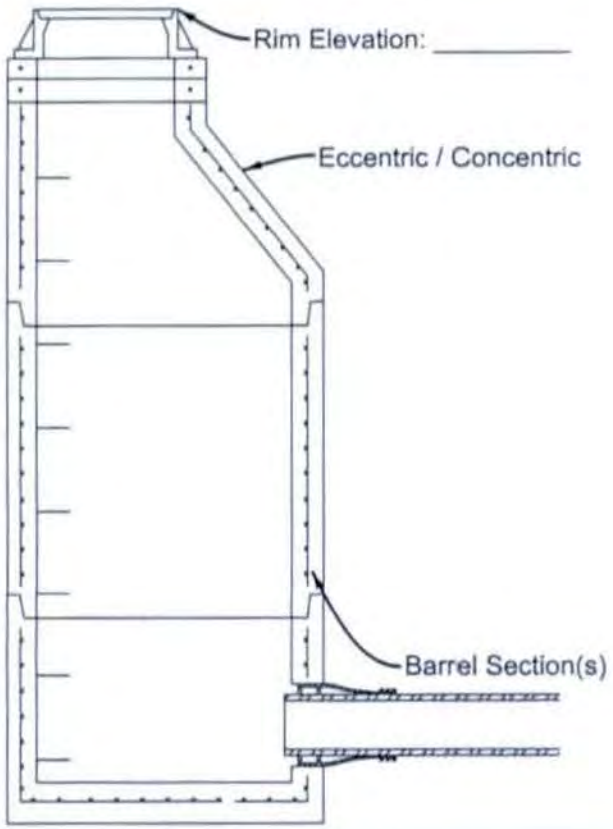
MANHOLE INSPECTION FORM

Project DURBEE

Date 7/7/12

Inspector TW & CS





Location _____

MH ID 104 Point # _____

Present Use Storm Sanitary Other: _____

Surface Cover Asphalt

Grade to Manhole Flush Below 1" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 12" Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition (Good) Fair Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type (Good) Fair Poor None

Bench Condition (Good) Fair Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

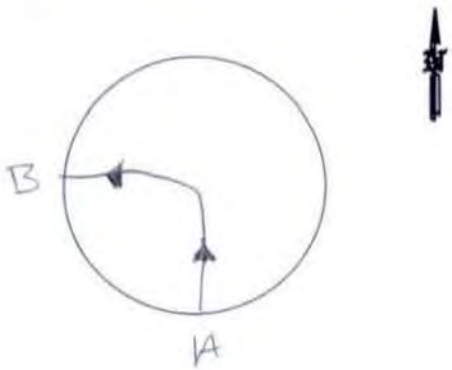
Infiltration Location Pipe Invert Casting Walls

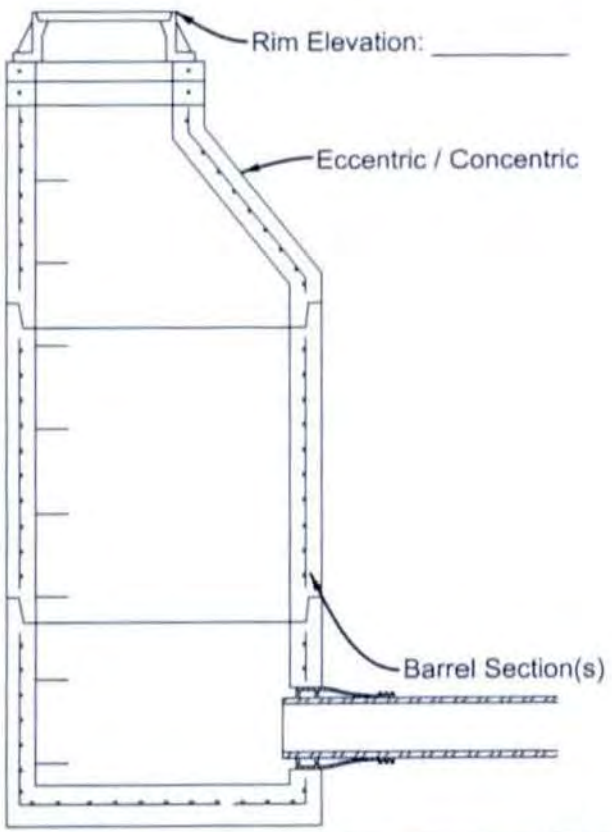
Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	N	7 90°
B	8"	VCP	S	8 90°
C				
D				
E				
F				

MANHOLE INSPECTION FORM

Project: Dupree
Date: 7/7/12
Inspector: JW + CS





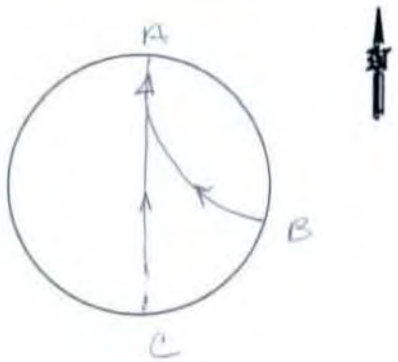
Location: Main & 2nd St
MH ID: 37 Point #: _____
Present Use: Storm (Sanitary) Other: _____
Surface Cover: Chip Seal
Grade to Manhole: Flush (Below) ✓ Above _____
Cover Diameter: 24
Cover Condition: Good (Fair) Poor
Casting Condition: Good (Fair) Poor Height: _____
Riser Rings: Qty: 3 Alignment: _____ Type: _____
Manhole Type: (Precast) Brick Block Combination
Manhole Condition: (Good) Fair Poor
Step Condition: Re-Rod (Cast) Reinf. Plastic Other: _____
Step Type: Good Fair (Poor) None
Bench Condition: (Good) Fair Poor
Drop Manhole Type: Outside Inside (None)
Infiltration: Yes (No)
Infiltration Location: Pipe Invert Casting Walls

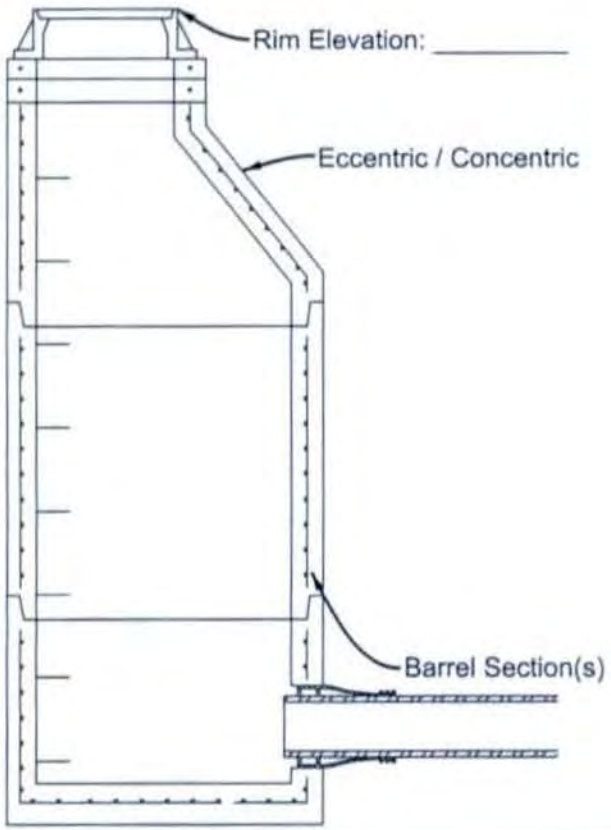
Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	10"	VCP	S	9 9/1
B	10"	VCP	W	10 0/2
C				
D				
E				
F				

MANHOLE INSPECTION FORM

Project DURKEE
Date 7/7/12
Inspector CS + TW





Location _____
MH ID 38 Point # _____
Present Use Storm (Sanitary) Other: _____
Surface Cover Asphalt
Grade to Manhole Flush Below ✓ 1½ Above _____
Cover Diameter 24
Cover Condition Good Fair (Poor) Vented Lid
Casting Condition Good Fair (Poor) Height: _____
Riser Rings Qty: 2 Alignment: _____ Type: _____
Manhole Type (Precast) Brick Block Combination
Manhole Condition (Good) Fair Poor
Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____
Step Type Good (Fair) Poor None
Bench Condition (Good) Fair Poor
Drop Manhole Type Outside Inside (None)
Infiltration Yes (No)
Infiltration Location Pipe Invert Casting Walls

Inverts:

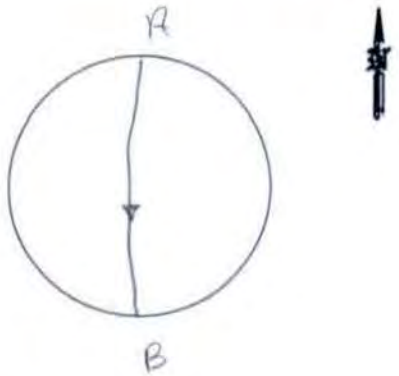
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	N	7 80
B	8	VCP	E	7 55
C	8	VCP	S	7 0
D				
E				
F				

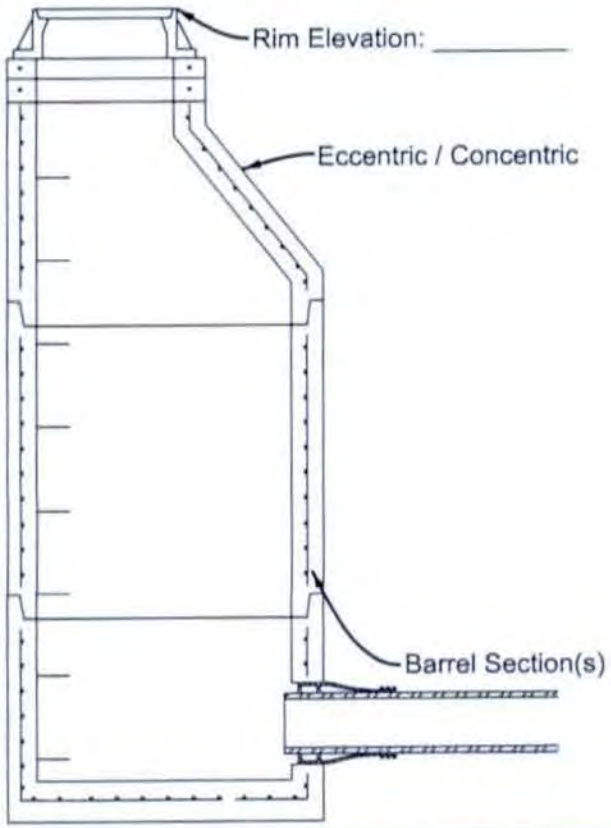
MANHOLE INSPECTION FORM

Project DWYER

Date 7/7/12

Inspector TH & CS





Location _____

MH ID 40 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Grass

Grade to Manhole Flush Below ~ Above _____

Cover Diameter _____

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 1 Alignment: _____ Type: Brick

Manhole Type (Precast) Brick Block Combination

Manhole Condition (Good) Fair Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition (Good) Fair Poor

Drop Manhole Type Outside Inside (None)

Infiltration Yes (No)

Infiltration Location Pipe Invert Casting Walls

Inverts:

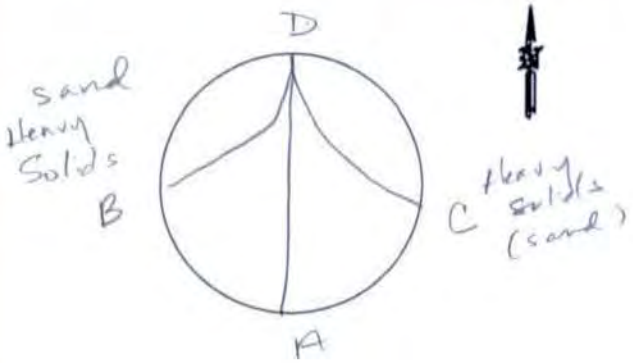
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	N	7 11/4
B	8	VCP	S	7 1/8
C				
D				
E				
F				

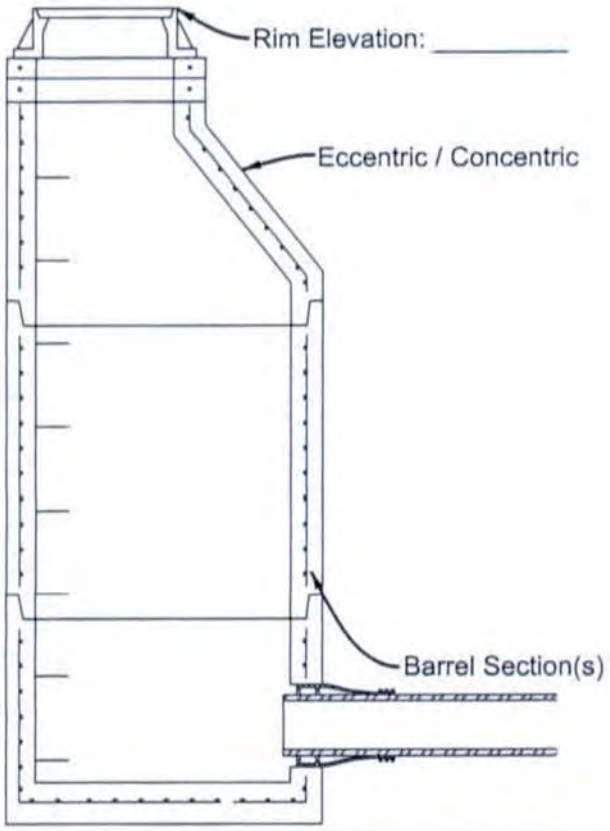
MANHOLE INSPECTION FORM

Project DUPLEX

Date 7/7/12

Inspector TW & CS





Location _____

MH ID 43 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 2" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor Vented

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 7 Alignment: off Type: bl/conc

Manhole Type Precast Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good Fair Poor

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)

Inverts:

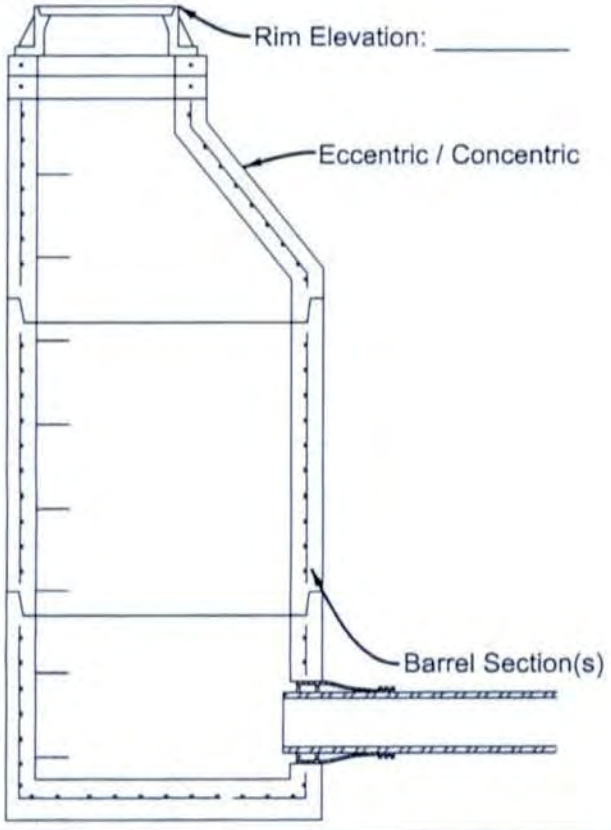
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	S	8 4.5
B	8	VCP	W	8 4.3
C	8	VCP	E	8 4.9
D	8	VCP	N	8 4.5
E				
F				

MANHOLE INSPECTION FORM

Project DUFFER

Date 7/7/12

Inspector TW & CS



Location _____

MH ID 24 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush Below _____ Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 3 Alignment: _____ Type: Precast

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert (Casting) (Walls)

Inverts:

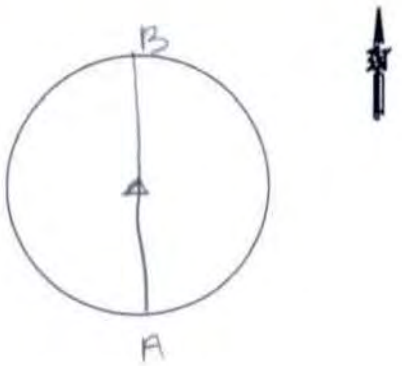
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	W	8 89
B	8	VCP	N	9 03
C	8	VCP	E	8 90
D				
E				
F				

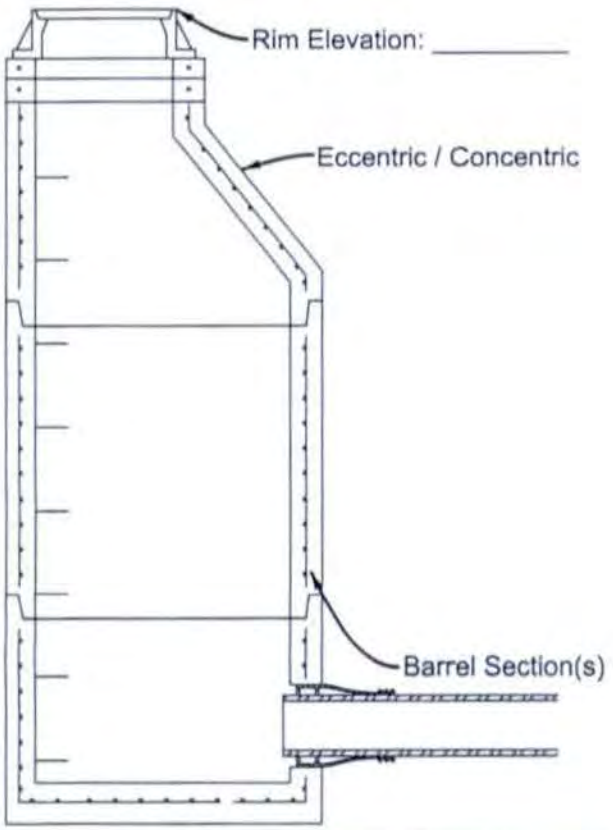
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/11

Inspector TH & CS





Location _____

MH ID 101* Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 1" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: 7"

Riser Rings Qty: 8 Alignment: _____ Type: Brick

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) (Poor)

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)

Inverts:

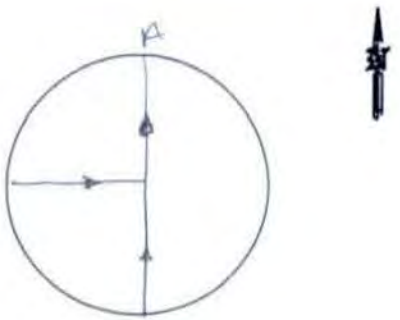
Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	S	11 85
B	8"	VCP	N	11 92
C				
D				
E				
F				

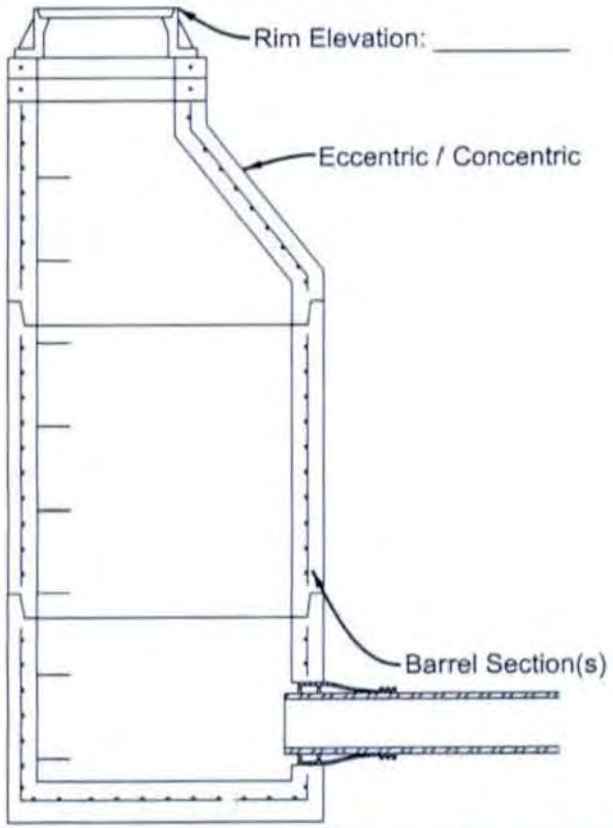
MANHOLE INSPECTION FORM

Project DURBIN

Date 7/7/12

Inspector TW & CB





Location _____

MH ID 100 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush (Below) 2" Above _____

Cover Diameter 24

Cover Condition Good (Fair) Poor

Casting Condition Good (Fair) Poor Height: _____

Riser Rings Qty: 4 Alignment: _____ Type: _____

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) Poor

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good (Fair) Poor None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)

Inverts:

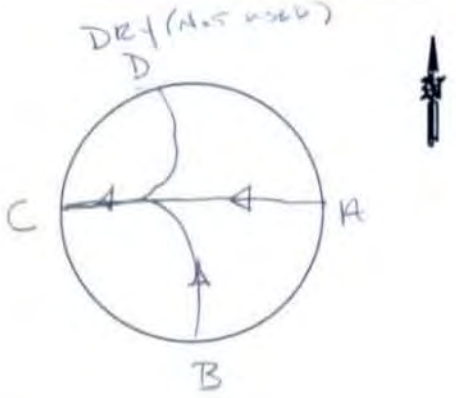
Pipe	Size	Type	Card. Dir.	Cut
A	8	VCP	N	9 1/2
B				
C				
D				
E				
F				

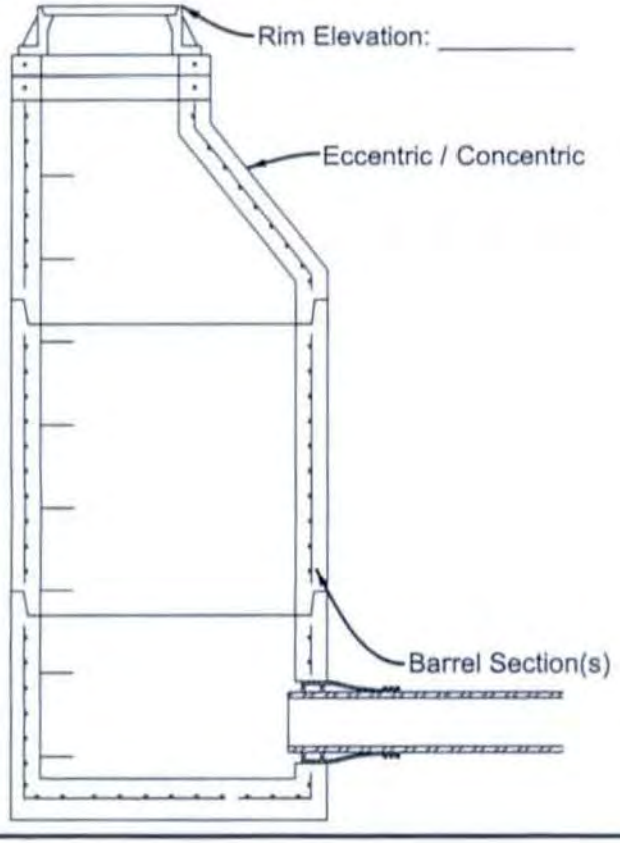
MANHOLE INSPECTION FORM

Project DUPREE

Date 7/7/12

Inspector IN & CS





Location _____

MH ID 15 Point # _____

Present Use Storm (Sanitary) Other: _____

Surface Cover Asphalt

Grade to Manhole Flush Below 1" Above _____

Cover Diameter 24

Cover Condition Good Fair (Poor) Vented

Casting Condition Good Fair (Poor) Height: 9"

Riser Rings Qty: 6 Alignment: _____ Type: Cone

Manhole Type (Precast) Brick Block Combination

Manhole Condition Good (Fair) (Poor)

Step Condition Re-Rod (Cast) Reinf. Plastic Other: _____

Step Type Good Fair (Poor) None

Bench Condition Good (Fair) Poor

Drop Manhole Type Outside Inside (None)

Infiltration (Yes) No

Infiltration Location Pipe Invert Casting (Walls)

Inverts:

Pipe	Size	Type	Card. Dir.	Cut
A	8"	VCP	E	7^{83}
B	8"	VCP	S	7^{42}
C	8"	VCP	W	7^{82}
D	8"	VCP	N	
E				
F				

Appendix D

Dupree Soils Map and Data

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 Ziebach County, South Dakota

City of Dupree WW Improvements

July 10, 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.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

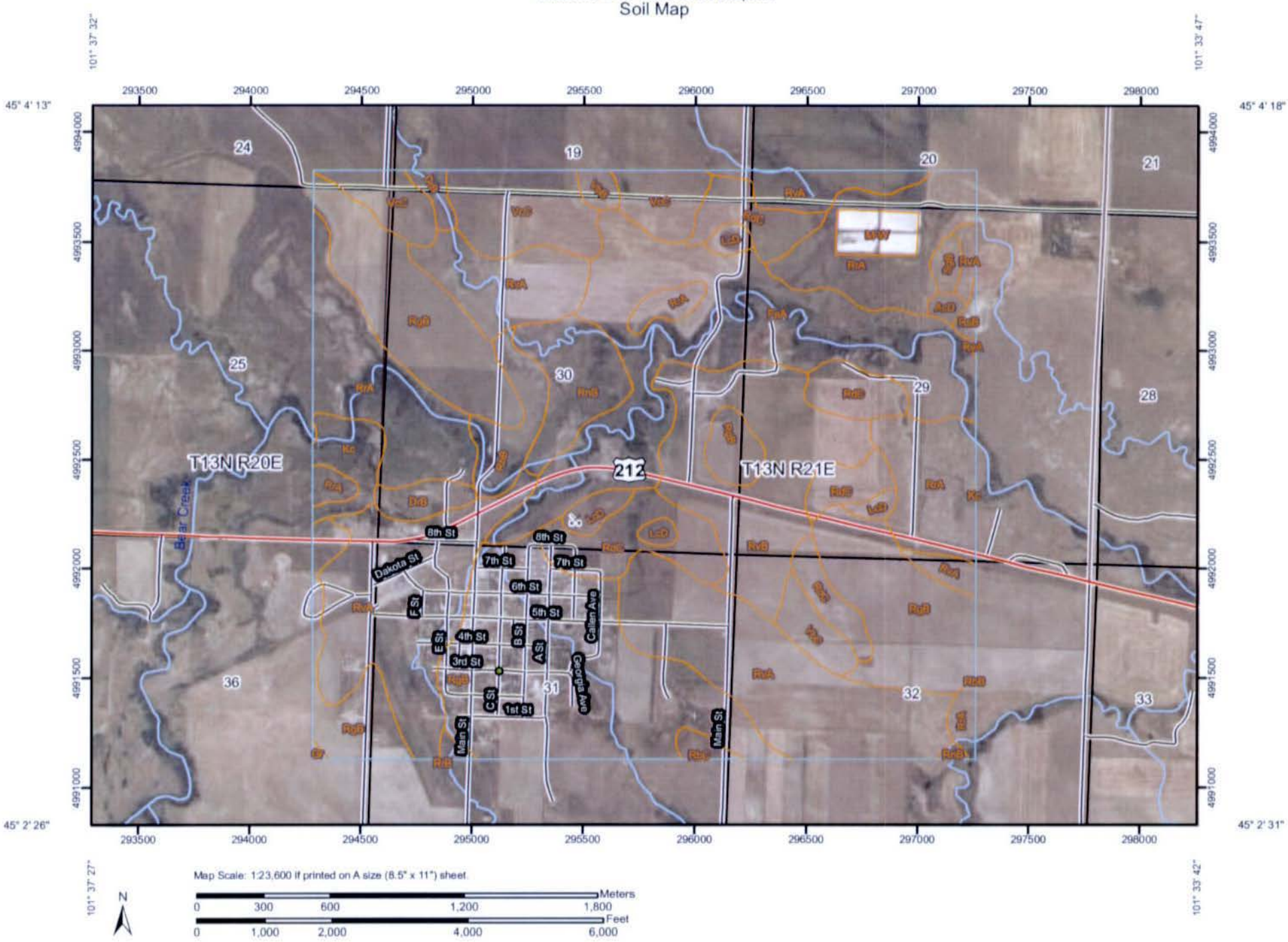
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



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
- PLSS Township and Range
- PLSS Section

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:23,600 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Ziebach County, South Dakota
Survey Area Data: Version 13, May 8, 2012

Date(s) aerial images were photographed: 8/14/2004; 7/29/2004

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

Ziebach County, South Dakota (SD137)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AcD	Amor-Cabba loams, 9 to 15 percent slopes	4.6	0.2%
DrB	Daglum-Rhoades loams, 2 to 6 percent slopes	23.0	1.2%
FaA	Farland silt loam, 0 to 2 percent slopes	247.0	12.4%
Gr	Grail silt loam	0.9	0.0%
Kc	Korchea loam, channeled	25.8	1.3%
LcD	Lantry-Cabba complex, 9 to 30 percent slopes	24.5	1.2%
M-W	Miscellaneous water	17.7	0.9%
RbB	Reeder loam, 2 to 6 percent slopes	33.0	1.7%
RbC	Reeder loam, 6 to 9 percent slopes	6.4	0.3%
RdC	Reeder-Lantry complex, 2 to 9 percent slopes	132.3	6.7%
RgB	Regent silty clay loam, 2 to 6 percent slopes	478.0	24.1%
RnB	Regent-Rhoades complex, 2 to 9 percent slopes	52.8	2.7%
RrA	Rhoades-Daglum loams, 0 to 2 percent slopes	252.4	12.7%
RrB	Rhoades-Daglum loams, 2 to 9 percent slopes	3.2	0.2%
RsB	Rhoades-Slickspots complex, 1 to 6 percent slopes	3.4	0.2%
RvA	Ridgeview silty clay loam, 0 to 2 percent slopes	399.3	20.1%
RvB	Ridgeview silty clay loam, 2 to 6 percent slopes	141.4	7.1%
SgB	Savage silt loam, 2 to 6 percent slopes	7.1	0.4%
VbB	Vebar fine sandy loam, 2 to 6 percent slopes	7.0	0.4%
VbC	Vebar fine sandy loam, 6 to 9 percent slopes	19.1	1.0%
VcC	Vebar-Cohagen fine sandy loam, 6 to 15 percent slopes	106.8	5.4%
Totals for Area of Interest		**1,985.6**	**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.

Ziebach County, South Dakota

AcD—Amor-Cabba loams, 9 to 15 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Amor and similar soils: 55 percent
Cabba and similar soils: 30 percent
Minor components: 15 percent

Description of Amor

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Loamy residuum weathered from sandstone

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 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: 2 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability (nonirrigated): 4e
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Typical profile

0 to 5 inches: Loam
5 to 15 inches: Loam
15 to 36 inches: Loam
36 to 60 inches: Weathered bedrock

Description of Cabba

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex

Parent material: Loamy residuum weathered from sedimentary rock

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 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: Very low (about 2.6 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Shallow Loamy (R054XY030ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Typical profile

0 to 4 inches: Loam
4 to 16 inches: Loam
16 to 60 inches: Weathered bedrock

Minor Components

Regent

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Rhoades

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Daglum

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

DrB—Daglum-Rhoades loams, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Daglum and similar soils: 60 percent
Rhoades and similar soils: 20 percent
Minor components: 20 percent

Description of Daglum

Setting

Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Clayey and loamy residuum weathered from sedimentary rock and/or clayey and loamy slope alluvium

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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability (nonirrigated): 4s
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Typical profile

0 to 6 inches: Loam
6 to 17 inches: Clay
17 to 60 inches: Clay

Description of Rhoades

Setting

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from sedimentary rock

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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 2 inches: Loam
2 to 21 inches: Silty clay
21 to 60 inches: Silty clay

Minor Components

Reeder

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Regent

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Ridgeview

Percent of map unit: 4 percent
Landform: Plains

Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Savage

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Vebar

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Hoven

Percent of map unit: 1 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R054XY022ND)
Other vegetative classification: Not suited (G054XY000ND)

FaA—Farland silt loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Farland and similar soils: 85 percent
Minor components: 15 percent

Description of Farland

Setting

Landform: Terraces, terraces
Landform position (two-dimensional): Summit, footslope

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: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 8.0 mmhos/cm)
Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Loam (G054XY100ND)

Typical profile

0 to 8 inches: Silt loam
8 to 20 inches: Silty clay loam
20 to 38 inches: Silt loam
38 to 60 inches: Stratified very fine sand to loam to silty clay

Minor Components

Savage

Percent of map unit: 5 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Stady

Percent of map unit: 5 percent
Landform: Stream terraces, terraces
Landform position (two-dimensional): Footslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Daglum

Percent of map unit: 5 percent
Landform: Terraces, plains
Landform position (two-dimensional): Summit, footslope, backslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Gr—Grail silt loam

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Grail and similar soils: 85 percent
Minor components: 15 percent

Description of Grail

Setting

Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Silty and clayey slope alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 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: 15 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 10.8 inches)

Interpretive groups

Land capability (nonirrigated): 2c
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 9 inches: Silt loam
9 to 28 inches: Silty clay
28 to 60 inches: Silty clay loam

Minor Components

Savage

Percent of map unit: 7 percent

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Regent

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Rhoades

Percent of map unit: 2 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Daglum

Percent of map unit: 2 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Kc—Korchea loam, channeled

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Korchea and similar soils: 85 percent
Minor components: 15 percent

Description of Korchea

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Properties and qualities

Slope: 0 to 2 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 to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 10.3 inches)

Interpretive groups

Land capability (nonirrigated): 6w
Ecological site: Loamy Overflow (R054XY023ND)
Other vegetative classification: Overflow (G054XY500ND)

Typical profile

0 to 6 inches: Loam
6 to 60 inches: Stratified fine sandy loam to silty clay loam

Minor Components

Trembles, channeled

Percent of map unit: 7 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Overflow (R054XY023ND)
Other vegetative classification: Overflow (G054XY500ND)

Lohler, channeled

Percent of map unit: 7 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: CLAYEY OVERFLOW (R054XY021SD)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Herdcamp

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Wet Land (R054XY036ND)
Other vegetative classification: Not suited (G054XY000ND)

LcD—Lantry-Cabba complex, 9 to 30 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Lantry and similar soils: 60 percent
Cabba and similar soils: 25 percent
Minor components: 15 percent

Description of Lantry

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Silty residuum weathered from sandstone and siltstone and/or shale

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 45 percent
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

Typical profile

0 to 4 inches: Silt loam
4 to 33 inches: Silt loam
33 to 60 inches: Weathered bedrock

Description of Cabba

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex

Across-slope shape: Linear, convex
Parent material: Loamy residuum weathered from sedimentary rock

Properties and qualities

Slope: 9 to 25 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 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: Very low (about 2.6 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Shallow Loamy (R054XY030ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Typical profile

0 to 4 inches: Loam
4 to 16 inches: Loam
16 to 60 inches: Weathered bedrock

Minor Components

Rhoades

Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Amor

Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Glenross

Percent of map unit: 3 percent
Landform: Drainageways
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Concave, linear
Ecological site: Saline Lowland (R054XY024ND)
Other vegetative classification: Not suited (G054XY000ND)

Korchea

Percent of map unit: 3 percent

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Overflow (R054XY023ND)
Other vegetative classification: Overflow (G054XY500ND)

Rock outcrop, soft

Percent of map unit: 2 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Convex, linear
Ecological site: Non-site (R054XY999ND)
Other vegetative classification: Not suited (G054XY000ND)

Slickspots, dry

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Non-site (R054XY999ND)
Other vegetative classification: Not suited (G054XY000ND)

M-W—Miscellaneous water

Map Unit Composition

Miscellaneous water: 100 percent

Description of Miscellaneous Water

Interpretive groups

Ecological site: Non-site (R054XY999ND)

RbB—Reeder loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Reeder and similar soils: 85 percent
Minor components: 15 percent

Description of Reeder

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Loamy residuum weathered from sedimentary rock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 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: 20 percent
Gypsum, maximum content: 1 percent
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability (nonirrigated): 2e
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Typical profile

0 to 5 inches: Loam
5 to 20 inches: Clay loam
20 to 35 inches: Loam
35 to 60 inches: Weathered bedrock

Minor Components

Regent

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Daglum

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 3 percent
Landform: Swales

Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Lantry

Percent of map unit: 3 percent
Landform: Ridges, knolls
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

Rhoades

Percent of map unit: 2 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Heil

Percent of map unit: 1 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R054XY022ND)
Other vegetative classification: Not suited (G054XY000ND)

RbC—Reeder loam, 6 to 9 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Reeder and similar soils: 85 percent
Minor components: 15 percent

Description of Reeder

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear

Across-slope shape: Linear, convex
Parent material: Loamy residuum weathered from sedimentary rock

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 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: 20 percent
Gypsum, maximum content: 1 percent
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Typical profile

0 to 5 inches: Loam
5 to 20 inches: Clay loam
20 to 35 inches: Loam
35 to 60 inches: Weathered bedrock

Minor Components

Regent

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Rhoades

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Cabba

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Shallow Loamy (R054XY030ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Daglum

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Lantry

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

RdC—Reeder-Lantry complex, 2 to 9 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Reeder and similar soils: 60 percent
Lantry and similar soils: 25 percent
Minor components: 15 percent

Description of Reeder

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Loamy residuum weathered from sedimentary rock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 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: 20 percent

Gypsum, maximum content: 1 percent
Sodium adsorption ratio, maximum: 5.0
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability (nonirrigated): 2e
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Typical profile

0 to 5 inches: Loam
5 to 20 inches: Clay loam
20 to 35 inches: Loam
35 to 60 inches: Weathered bedrock

Description of Lantry

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Silty residuum weathered from sandstone and siltstone and/or shale

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 45 percent
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 4e
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

Typical profile

0 to 4 inches: Silt loam
4 to 33 inches: Silt loam
33 to 60 inches: Weathered bedrock

Minor Components

Regent

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Daglum

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Rhoades

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Savage

Percent of map unit: 3 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Heil

Percent of map unit: 1 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R054XY022ND)
Other vegetative classification: Not suited (G054XY000ND)

RgB—Regent silty clay loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Regent and similar soils: 85 percent
Minor components: 15 percent

Description of Regent

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Clayey residuum weathered from shale

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 4 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Low (about 5.3 inches)

Interpretive groups

Land capability (nonirrigated): 2e
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 7 inches: Silty clay loam
7 to 28 inches: Silty clay
28 to 60 inches: Weathered bedrock

Minor Components

Rhoades

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Daglum

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 3 percent
Landform: Swales

Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Lantry

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

Vebar

Percent of map unit: 2 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Heil

Percent of map unit: 1 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R054XY022ND)
Other vegetative classification: Not suited (G054XY000ND)

RnB—Regent-Rhoades complex, 2 to 9 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Regent and similar soils: 55 percent
Rhoades and similar soils: 25 percent
Minor components: 20 percent

Description of Regent

Setting

Landform: Plains
Landform position (two-dimensional): Backslope

Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Clayey residuum weathered from shale

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 4 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Low (about 5.3 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 7 inches: Silty clay loam
7 to 28 inches: Silty clay
28 to 60 inches: Weathered bedrock

Description of Rhoades

Setting

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from sedimentary rock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 40 inches to paralithic bedrock
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Low (about 4.5 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 2 inches: Loam
2 to 21 inches: Silty clay
21 to 50 inches: Silty clay
50 to 60 inches: Weathered bedrock

Minor Components

Daglum

Percent of map unit: 7 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 7 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Vebar

Percent of map unit: 6 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

RrA—Rhoades-Daglum loams, 0 to 2 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Rhoades and similar soils: 60 percent
Daglum and similar soils: 25 percent
Minor components: 15 percent

Description of Rhoades

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from sedimentary rock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 2 inches: Loam
2 to 21 inches: Silty clay
21 to 60 inches: Silty clay

Description of Daglum

Setting

Landform: Terraces
Landform position (two-dimensional): Summit, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Clayey and loamy alluvium

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability (nonirrigated): 4s
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Typical profile

0 to 6 inches: Loam
6 to 17 inches: Clay
17 to 60 inches: Clay

Minor Components

Regent

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Savage

Percent of map unit: 4 percent
Landform: Terraces
Landform position (two-dimensional): Footslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Grail

Percent of map unit: 4 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Slickspots, dry

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Non-site (R054XY999ND)
Other vegetative classification: Not suited (G054XY000ND)

RrB—Rhoades-Daglum loams, 2 to 9 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Rhoades and similar soils: 60 percent
Daglum and similar soils: 20 percent
Minor components: 20 percent

Description of Rhoades

Setting

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Slope alluvium and/or residuum weathered from sedimentary rock

Properties and qualities

Slope: 2 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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 2 inches: Loam
2 to 21 inches: Silty clay
21 to 60 inches: Silty clay

Description of Daglum

Setting

Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Clayey and loamy residuum weathered from sedimentary rock and/or clayey and loamy slope alluvium

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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability (nonirrigated): 4s
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Typical profile

0 to 6 inches: Loam
6 to 17 inches: Clay
17 to 60 inches: Clay

Minor Components

Reeder

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Regent

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Savage

Percent of map unit: 4 percent

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Vebar

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Slickspots, dry

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: Non-site (R054XY999ND)
Other vegetative classification: Not suited (G054XY000ND)

RsB—Rhoades-Slickspots complex, 1 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Rhoades and similar soils: 55 percent
Slickspots, dry: 30 percent
Minor components: 15 percent

Description of Rhoades

Setting

Landform: Plains, terraces, drainageways
Landform position (two-dimensional): Footslope, backslope, summit
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Slope alluvium and/or residuum weathered from sedimentary rock

Properties and qualities

Slope: 1 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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Moderate (about 6.6 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 2 inches: Loam
2 to 21 inches: Silty clay
21 to 60 inches: Silty clay

Description of Slickspots, Dry

Setting

Landform: Plains, terraces, drainageways
Landform position (two-dimensional): Summit, backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Moderately saline to strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum: 20.0
Available water capacity: Low (about 5.0 inches)

Interpretive groups

Land capability (nonirrigated): 8s
Ecological site: Non-site (R054XY999ND)
Other vegetative classification: Not suited (G054XY000ND)

Typical profile

0 to 60 inches: Clay

Minor Components

Reeder

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex

Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Regent
Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Vebar
Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Daglum
Percent of map unit: 3 percent
Landform: Terraces, plains, drainageways
Landform position (two-dimensional): Backslope, footslope, toeslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Lantry
Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

RvA—Ridgeview silty clay loam, 0 to 2 percent slopes

Map Unit Setting
Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition
Ridgeview and similar soils: 85 percent
Minor components: 15 percent

Description of Ridgeview

Setting

Landform: Plains
Landform position (two-dimensional): Backslope, summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from shale

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability (nonirrigated): 2s
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 5 inches: Silty clay loam
5 to 12 inches: Clay
12 to 33 inches: Clay
33 to 60 inches: Silty clay

Minor Components

Daglum

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 5 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Rhoades

Percent of map unit: 4 percent

Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Heil

Percent of map unit: 1 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Closed Depression (R054XY022ND)
Other vegetative classification: Not suited (G054XY000ND)

RvB—Ridgeview silty clay loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Ridgeview and similar soils: 85 percent
Minor components: 15 percent

Description of Ridgeview

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from shale

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 low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0

Available water capacity: Moderate (about 7.8 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Clayey (R054XY020ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 5 inches: Silty clay loam
5 to 12 inches: Clay
12 to 33 inches: Clay
33 to 60 inches: Silty clay

Minor Components

Daglum

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 4 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Lantry

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Thin Loamy (R054XY038ND)
Other vegetative classification: Limy Upland (G054XY400ND)

Rhoades

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

SgB—Savage silt loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Savage and similar soils: 85 percent
Minor components: 15 percent

Description of Savage

Setting

Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Silty and clayey slope alluvium and/or silty and clayey eolian deposits

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 low to moderately high (0.06 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: 15 percent
Maximum salinity: Very slightly saline to slightly saline (4.0 to 8.0 mmhos/cm)
Available water capacity: High (about 10.0 inches)

Interpretive groups

Land capability (nonirrigated): 2e
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

Typical profile

0 to 6 inches: Silt loam
6 to 19 inches: Silty clay loam
19 to 28 inches: Silty clay loam
28 to 60 inches: Clay

Minor Components

Rhoades

Percent of map unit: 5 percent

Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Daglum

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Grail

Percent of map unit: 5 percent
Landform: Swales
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Clayey Subsoil (G054XY210ND)

VbB—Vebar fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Vebar and similar soils: 85 percent
Minor components: 15 percent

Description of Vebar

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy residuum weathered from sandstone

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: Low (about 4.8 inches)

Interpretive groups

Land capability (nonirrigated): 3e
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Typical profile

0 to 4 inches: Fine sandy loam
4 to 18 inches: Fine sandy loam
18 to 30 inches: Fine sandy loam
30 to 60 inches: Weathered bedrock

Minor Components

Bullock

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Cohagen

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Shallow Sandy (R054XY043ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Parchin

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Reeder

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

VbC—Vebar fine sandy loam, 6 to 9 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Vebar and similar soils: 85 percent
Minor components: 15 percent

Description of Vebar

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy residuum weathered from sandstone

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: Low (about 4.8 inches)

Interpretive groups

Land capability (nonirrigated): 4e
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Typical profile

0 to 4 inches: Fine sandy loam
4 to 18 inches: Fine sandy loam
18 to 30 inches: Fine sandy loam
30 to 60 inches: Weathered bedrock

Minor Components

Bullock

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Footslope, backslope

Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Cohagen

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Ecological site: Shallow Sandy (R054XY043ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Parchin

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

Reeder

Percent of map unit: 3 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

VcC—Vebar-Cohagen fine sandy loam, 6 to 15 percent slopes

Map Unit Setting

Elevation: 1,660 to 3,610 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 41 to 46 degrees F
Frost-free period: 120 to 135 days

Map Unit Composition

Vebar and similar soils: 55 percent
Cohagen and similar soils: 30 percent
Minor components: 15 percent

Description of Vebar

Setting

Landform: Plains, hills
Landform position (two-dimensional): Backslope

Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy residuum weathered from sandstone

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: Low (about 4.8 inches)

Interpretive groups

Land capability (nonirrigated): 4e
Ecological site: Sandy (R054XY026ND)
Other vegetative classification: Very Droughty Loam (G054XY130ND)

Typical profile

0 to 4 inches: Fine sandy loam
4 to 18 inches: Fine sandy loam
18 to 30 inches: Fine sandy loam
30 to 60 inches: Weathered bedrock

Description of Cohagen

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Residuum weathered from sandstone

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: 4 to 20 inches to paralithic bedrock
Drainage class: 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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 1.8 inches)

Interpretive groups

Land capability (nonirrigated): 6e
Ecological site: Shallow Sandy (R054XY043ND)
Other vegetative classification: Not suited (G054XY000ND), SHALLOW (054XY024SD_1)

Typical profile

0 to 11 inches: Fine sandy loam
11 to 60 inches: Weathered bedrock

Minor Components

Reeder

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: Loamy (R054XY031ND)
Other vegetative classification: Droughty Loam (G054XY120ND)

Rhoades

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Thin Claypan (R054XY033ND)
Other vegetative classification: Not suited (G054XY000ND)

Daglum

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope, footslope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: Claypan (R054XY021ND)
Other vegetative classification: Claypan (G054XY800ND)

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Appendix E

Dupree Wastewater Discharge Sample Results

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION
Public Health Laboratory

615 East Fourth Street
Pierre, South Dakota 57501-1700
605/773-3368 FAX: 605/773-6129
www.state.sd.us/doh/lab/index.htm

Submitter copy to: ** DUPLICATE REPORT ** Date: 3/22/2011

DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC001053
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source

DUPREE EFFLUENT

Date Rcvd: 3/17/2011
Time Rcvd: 0708
Date Coll: 3/16/2011
Time Coll: 0915
Spec Type: WATER
Coll By: IAN PISTULKA

Chlorin Eff?: No
Discharging?: Yes
Field pH: 6.96
Water Temp: 3.1 C
medium WATER
pH 6.96

Final Results

BOD-EPA METHOD 405.1		7 mg/L
BOD SET UP 3/17/11 1110 KG		
Solids (Suspended)		7 mg/L
EPA METHOD 160.2		
TSS SET UP 3/17/11 KG		
AMMONIA/WW		1.16 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	9400 / 100 mL

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

Public Health Laboratory

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Pierre, South Dakota 57501-1700
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Submitter copy to: ** DUPLICATE REPORT ** Date: 4/27/2011

DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC001960
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 4/21/2011
Time Rcvd: 0738
Date Coll: 4/20/2011
Time Coll: 0900
Spec Type: WATER
Coll By: IAN PISTULKA

Chlorin Eff?: No
Field pH: 7.5
Site Location: CELL NUMBER 4
Water Temp: 40 F
medium WATER
pH 7.5

Final Results

BOD-EPA METHOD 405.1		58 mg/L
BOD SET UP 4/21/11 1210 KG		
Solids (Suspended)		14 mg/L
EPA METHOD 160.2		
TSS SET UP 4/21/11 KG		
PH		7.88 pH UNITS
EPA Method 150.1		
AMMONIA/WW		19.7 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	35000 / 100 mL

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

Public Health Laboratory

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Pierre, South Dakota 57501-1700
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Submitter copy to: ** DUPLICATE REPORT ** Date: 6/20/2011

DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC003442
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 6/14/2011
Time Rcvd: 0818
Date Coll: 6/13/2011
Time Coll: 1030
Spec Type: WATER
Coll By: IAN PISTULKA
Chlorin Eff?: No

Discharging?: Yes
Field pH: 8.6
Site Location: CELL NUMBER 4
Water Temp: 65 F
medium WATER
pH 8.6

Final Results

BOD-EPA METHOD 405.1		13 mg/L
BOD SET UP 6/15/11 835 KG		
Solids (Suspended)		67 mg/L
EPA METHOD 160.2		
TSS SET UP 6/14/11 KG		
PH		8.87 pH UNITS
EPA Method 150.1		
AMMONIA/WW		4.76 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	24000 / 100 mL
FECAL COLIFORM - 25TUBE	Fecal Coliform	700 / 100 mL

Specimen Comments:
NO BOTTLE FOR OIL & GREASE TEST RECEIVED

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

Public Health Laboratory

615 East Fourth Street
Pierre, South Dakota 57501-1700
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DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC003609
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 6/16/2011
Time Rcvd: 0731
Date Coll: 6/15/2011
Time Coll: 0830
Spec Type: WATER
Coll By: IAN PISTULKA
Chlorin Eff?: No
Discharging?: Yes

Field pH: 9.0
Sample Type: GRAB
Site Location: CELL NUMBER 4
Type of Sample: GRAB
Water Temp: 68 F
medium WATER
pH 9.0

Final Results

BOD-EPA METHOD 405.1		20 mg/L
BOD SET UP 6/16/11 1100 KG		
Solids (Suspended)		41 mg/L
EPA METHOD 160.2		
TSS SET UP 6/16/11 KG		
PH		8.71 pH UNITS
EPA Method 150.1		
AMMONIA/WW		5.26 mg/L
Phosphorus,total		1.71 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	17000 / 100 mL
FECAL COLIFORM - 25TUBE	Fecal Coliform	7900 / 100 mL

Specimen Comments:
NO BOTTLE RECEIVED FOR OIL & GREASE TEST

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

Public Health Laboratory

615 East Fourth Street
Pierre, South Dakota 57501-1700
605/773-3368 FAX: 605/773-6129
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Submitter copy to: ** DUPLICATE REPORT ** Date: 9/1/2011

DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC005990
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 8/26/2011
Time Rcvd: 0710
Date Coll: 8/25/2011
Time Coll: 1330
Spec Type: WATER
Coll By: IAN PISTULKA
Chlorin Eff?: No

Discharging?: Yes
Field pH: 8.0
Flow-gpm: 500 GPM
Site Location: CELL NUMBER 4
medium WATER
pH 8.0

Final Results

BOD-EPA METHOD 405.1		22 mg/L
BOD SET UP ON 8/26/11 1015 KD		
Solids (Suspended)		66 mg/L
EPA METHOD 160.2		
TSS SET UP 8/26/11 KD		
AMMONIA/WW		0.05 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	54000 / 100 mL
FECAL COLIFORM - 25TUBE	Fecal Coliform	24000 / 100 mL

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

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DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC006245
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 9/8/2011
Time Rcvd: 0715
Date Coll: 9/7/2011
Time Coll: 0735
Spec Type: WATER
Coll By: IAN PISTULKA
Chlorin Eff?: No
Discharging?: Yes

Field pH: 8.4
Flow-gpm: 500
Sample Type: GRAB
Type of Sample: GRAB
Water Temp: 64 F
medium WATER
pH 8.4

Final Results

BOD-EPA METHOD 405.1		28 mg/L
BOD SET UP 9/8/11 1100 KG		
Solids (Suspended)		92 mg/L
EPA METHOD 160.2		
TSS SET UP 9/8/11 KD,KG		
AMMONIA/WW		0.70 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	>160000 / 100 mL
FECAL COLIFORM - 25TUBE	Fecal Coliform	54000 / 100 mL

SOUTH DAKOTA DEPARTMENT OF HEALTH

DIVISION OF ADMINISTRATION

Public Health Laboratory

615 East Fourth Street
Pierre, South Dakota 57501-1700
605/773-3368 FAX: 605/773-6129
www.state.sd.us/doh/lab/index.htm

Submitter copy to: ** DUPLICATE REPORT ** Date: 9/20/2011

DUPREE,CITY OF-0110
PO BOX 276
DUPREE, SD 57623-0276

Spec #: E11EC006568
Subm #:
Lab: ENV CHEMISTRY
Tel #: (605)773-3368

Source
DUPREE WWTF EFFLUENT

Date Rcvd: 9/15/2011
Time Rcvd: 0727
Date Coll: 9/14/2011
Time Coll: 0800
Spec Type: WATER
Coll By: IAN PISTULKA
Chlorin Eff?: No
Discharging?: Yes

Field pH: 8.9
Sample Type: GRAB
Site Location: CELL NUMBER 4
Type of Sample: GRAB
Water Temp: 63 F
medium WATER
pH 8.9

Final Results

BOD-EPA METHOD 405.1		34 mg/L
BOD SET UP 9/15/11 945 KG		
Solids (Suspended)		98 mg/L
EPA METHOD 160.2		
TSS SET UP 9/15/11 KG		
AMMONIA/WW		0.14 mg/L
TOTAL COLIFORM - 25TUBE	Total Coliform	>160000 / 100 mL
FECAL COLIFORM - 25TUBE	Fecal Coliform	160000 / 100 mL

WRAP REVIEW SHEET
SANITARY/STORM SEWER FACILITIES FUNDING APPLICATION
CITY OF MOBRIDGE

Project Title:	Wastewater Improvements
Funding Requested:	$1,475,000
Other Proposed Funding:	$700,000 - Local Cash $515,000 - Community Development Block Grant
Total Project Cost:	$2,690,000
Green Reserve Amount:	$
Project Description:	The project consists of the construction of a new primary clarifier, bio-filter pump station, ultraviolet disinfection system and disinfection basin drain and rehabilitation of the existing primary clarifier.
Alternatives Evaluated:	The city evaluated several alternatives before selecting the above project. The "no action" was not selected as it did not address the deteriorated infrastructure; specifically, the primary clarifier. If the primary clarifier failed, it could lead to the failure of the unit process and cause possible NPDES violations. The "no action" alternative also does not provide redundancy in the treatment plant. The other alternatives evaluated included the following: I A – new primary clarifier, rehabilitate existing primary clarifier, new bio-filter pump station, rehabilitate and expand chlorine disinfection system and new disinfection basin drain. I B - new primary clarifier, rehabilitate existing primary clarifier, new bio-filter pump station, new ultraviolet disinfection system and new disinfection basin drain. II A – new micro-screens and micro-screen building, new bio-filter pump station, rehabilitate and expand chlorine disinfection system and new disinfection basin drain. II B - new micro-screens and micro-screen building, new bio-filter pump station, new ultraviolet disinfection system and

	new disinfection basin drain. The city selected option I B due to lower O & M costs which led to lower net present worth values. The ultraviolet disinfection system is also a safer alternative to a chlorine disinfection system.
Implementation Schedule:	Mobridge anticipates bidding the project in February 2015 with a project completion date in July 2016.
Service Population:	3,465
Current Domestic Rate:	$17.00 flat rate
Proposed Domestic Rate at Project Completion:	$23.00 flat rate

Interest Rate: 3.0% Term: 20 years Security: Wastewater Surcharge

DEBT SERVICE CAPACITY

Coverage at Maximum Loan Amount:	If all funding is provided as loan Mobridge would have to enact a surcharge of approximately $5.16. When added to current rate of $17 per 5,000 gallons residents would be paying $22.16 per 5,000 gallons.

25% Funding Subsidy:	$368,750 subsidy with a loan of $1,106,250
Coverage at 25% Subsidy:	Based on a 25% subsidy and a loan of $1,106,250 Mobridge would have to enact a surcharge of approximately $3.87 thereby paying a rate $20.87 per 5,000 gallons.

50% Funding Subsidy:	$737,500 subsidy with a loan of $737,500
Coverage at 50% Subsidy:	Based on a 50% subsidy and a loan of $737,500 Mobridge would have to enact a surcharge of approximately $2.58 thereby paying a rate $19.58 per 5,000 gallons.

75% Funding Subsidy:	$1,106,250 subsidy with a loan of $368,750
Coverage at 75% Subsidy:	Based on a 75% subsidy and a loan of $368,750 Mobridge would have to enact a surcharge of approximately $1.29 thereby paying a rate $18.29 per 5,000 gallons.

ENGINEERING REVIEW COMPLETED BY: JIM ANDERSON

FINANCIAL REVIEW COMPLETED BY: ELAYNE LANDE

SD EForm - 2127LD V2

Sanitary/Storm Sewer Facilities Funding Application

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

Applicant	Proposed Funding Package		
City of Mobridge	CWFCP / CWSRF		$1,475,000
Address	Local Cash		$700,000
114 1st Avenue East Mobridge, SD 57601	Other	CDBG	$515,000
	Other		
Subapplicant	Other		
DUNS Number 938131075	**TOTAL**		$2,690,000

Project Title: Mobridge Wastewater Immprovements

Description:

The project will construct a new primary clarifier, rehabilitate the existing primary clarifier for redundancy, install a new biofilter lift station, install a new ultraviolet disinfection system and disinfection basin drain. The project will also expand, update and commission a SCADA system for the plant.

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.

Jamie Dietterle, Mayor		Sep 26, 2014
Name & Title of Authorized Signatory (Typed)	Signature	Date

Professional Consultants

Application Prepared By: Northeast Council of Governments

Contact Person: Ted Dickey

Mailing Address: PO Box 1985

City, State, and Zip: Aberdeen, SD 57402

Telephone Number: (605) 626-2595 Fax: (605) 626-2975

Email address: ted@necog.org

Consulting Engineering Firm: AE2S

Contact Person: Ken Weber

Mailing Address: 1815 Schafer St. Suite 301

City, State, and Zip: Bismarck, ND 58501

Telephone Number: (701) 221-0530 Fax: (701) 221-0531

Email address: ken.weber@ae2s.com

Legal Counsel's Firm: Cain Law

Legal Counsel: Rick Cain

Mailing Address: 318 1st Avenue East

City, State, and Zip: Mobridge, SD 57601

Telephone Number: (605) 845-2981 Fax:

Email address: cain@cainslaw.com

Bond Counsel's Firm: Danforth Meierhenry & Meierhenry

Bond Counsel: 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 CWFCP / DWSRF	B CDBG	C Local	D	E	Total Funds
1. Administrative Expenses						
A. Personal Services		$15,000.00				$15,000.00
B. Travel						
C. Legal including Bond Counsel	$15,000.00					$15,000.00
D. Other Extra Engineering Budgeted Expense			$52,465.00			$52,465.00
2. Land, Structure, Right-of-Way						
3. Engineering						
A. Bidding and Design Fees	$164,300.00					$164,300.00
B. Project Inspection Fees	$164,300.00					$164,300.00
C. Other						
4. Construction and Project Improvement	$1,131,400.00	$500,000.00	$31,935.00			$1,663,335.00
5. Equipment						
6. Contractual Services						
7. Other Current Premium Bid =12%			$287,000.00			$287,000.00
8. Other						
9. Subtotal (Lines 1-8)	$1,475,000.00	$515,000.00	$371,400.00			$2,361,400.00
10. Contingencies			$328,600.00			$328,600.00
11. Total (Lines 9 and 10)	$1,475,000.00	$515,000.00	$700,000.00			$2,690,000.00
12. Total %	54.83%	19.14%	26.02%	0.00%	0.00%	100.00%

Columns A - E: Identify each funding source and enter the amounts budgeted by cost category.

Comments:

Method of Financing

Source Header	Secured Funds	Unsecured Funds (Date Anticipated)
Local Cash (Identify Source) Wastewater Fund	$700,000.00	
Other (Explain) CWSRF		$1,475,000.00 Jan 23, 2015
Other (Explain) CDBG	$515,000.00	
Other (Explain)		
Other (Explain)		
Other (Explain)		
TOTAL	$1,215,000.00	$1,475,000.00

Comments:

7.4.1 Repayment Information

Interest rate and term you are applying for: 3 %, 20 years.

What security is being pledged toward the repayment of this loan?

- ☐ 1. General Obligation bond (requires bond election)
- ☐ 2. Wastewater Revenue bond
- ☐ 3. Storm Sewer Revenue bond
- ☒ 4. Project Surcharge Revenue bond
- ☐ 5. Sales Tax Revenue bond

7.4.2 Documents That Must Be Submitted With Application

Financial Documents

1. Most recent audit or unaudited financial statement to include specific accounting of fund pledged for repayment.
2. Current year's budget.

Planning and Legal Documents

1. Governing user charge ordinance or resolution and its effective date.
2. Resolution of authorized signatory for submission of Clean Water SRF application and signing of payment requests. This resolution must also include the maximum loan amount requested, interest rate and term being applied for, description of proposed project, and security pledged towards repayment of the loan.

Facilities Plan (See section 8.4.16 for a detailed outline.)

7.4.3 General Information

The month and day your fiscal year begins: January 1

Population Served

Current 3,465 2000 3,574 1990 3,768

Top Five Employers Within 30 Miles	Number of Employees	Type of Business
Mobridge Care Center	115	Health Care
Jensen Rock and Sand	95	Construction
One World Distribution	62	Distribution Center
East River Lumber	52	Retail
Alco	50	Retail

Please indicate employers within boundary of issuing entity with an asterisk (*).

7.4.4 Wastewater Utility Information

Current Wastewater Utility Debt

Year	2013						
Purpose	Storm Sewer						
Security Pledged	Wastewater						
Amount	$764,000.00						
Maturity Date (mo/yr)	1/2033						
Debt Holder	BWNR						
Debt Coverage Requirement	110						
Avg. Annual Required Payment	$46,899						
Outstanding Balance	$703,425.00						

Use additional sheets if more room is required to list all current wastewater utility debt.

Wastewater Utility Cash Flow

	Prior Year	Prior Year	Current Year Budgeted	Future Year #
Fiscal Year	2012	2013	2015	2017
OPERATING CASH FLOW				
Wastewater Sales	$391,950	$398,508.00	$298,200.00	$336,840.00
Surcharge Fee			$58,800.00	$58,800.00
Other (Explain) Misc. Interest, Late Fees	$5,963		$36,000.00	$36,000.00
WW Project Grants and Loans - 2017 Surchar			$2,690,000.00	$108,360.00
OPERATING PAYMENTS				
Personal Services	($132,280)	($108,918.00)	($110,069.00)	($116,772.00)
Chemical, Material & Supplies	($143,001)	($183,170.00)	($274,570.00)	($291,291.00)
Electric & Other Utilities				
Other (Explain)				
NET CASH FROM OPERATIONS	$122,632	$106,420.00	$2,698,361.00	$131,937.00
NONOPERATING CASH FLOW				
Interest Income	$3,750.00	$2,734.00		
Other Revenue (Explain)				
Transfers In (Explain)				
Storm Sewer Fees to Cover Storm Sewer Proj.			$89,900.00	$25,000.00
Fixed Asset Sale (Explain)				
Transfers Out (Explain)				
Wastewater Project Expenditures			($2,690,000.00)	
Fixed Asset Purchases (Explain)	($1,749.00)	($506.00)		
Debt Payment (Principal Only)			($69,482.00)	($28,112.00)
Debt Payment (Interest Only)			($20,418.00)	($18,787.00)
Other Expenses (Explain) 2nd SRF - Prin				($54,661.00)
2nd SRF - Interest				($43,502.00)
NET CASH FROM NONOPERATING	$2,001	$2,228.00	($2,690,000.00)	($120,062.00)
Net Increase (Decrease) in Cash	$124,633	$108,648.00	$8,361.00	$11,875.00
Beginning Cash Balance	$852,212	$976,845.00	$1,067,927.00	$1,076,288.00
Ending Cash Balance	$976,845	$1,085,493.0	$1,076,288.00	$1,088,163.00
RESTRICTED BALANCE	$429,417	$429,417.00	$429,417.00	$429,417.00
UNRESTRICTED BALANCE	$547,428	$656,076.00	$646,781.00	$1,101,796.00

Future Year: First full year after project completion.

Restricted Funds Breakdown:

Amount	Anticipated Expense	Method Used to Encumber
$429,417.00	Equipment Purchase	Set-Aside

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)

Others Systems - monthly rates at 7,000 gallons (935 cubic feet)

Check one: ✓ Incorporated Municipality or Sanitary District

or

____ Other System

Monthly:	Current Rate	Proposed Rate	# of Accounts	Average use gallons/cubic feet
Domestic	17.00	24.00	1,550	9730
Business	17.00	24.00	200	29061
Other:				
Other:				

Are fees based on usage or flat rate? Flat

When is proposed fee scheduled to take effect? March 2015

When did the current fee take effect? April 2000

What was the fee prior to the current rate? 16.00

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

Five Largest Customers	Type of Business	% of System Revenues
Golden Living Center	Assisted Living Facility	2
Fabratech	Dry-Cleaning/Laundromat	2
Mobridge Hospital	Hospital	2
Jensen Rock and Sand	Concrete Contractor	2
Mobridge Schools	Education	1

Storm Sewer Projects:

Does sponsor have a separate storm water fee? Yes ✓ No _____

If yes, attach the current and proposed rate ordinances or resolutions and rate schedules. Identify below the rate charged and explain how fee is calculated.

7.4.5 Property Tax Information

(Complete this section only if General Obligation bond is pledged to repay your loan.)

Three year valuation trend:

Year			
Assessed Valuation			
Full & True Valuation			

Three year levies and collection trend:

Year			
Amount Levied			
Collected			
Penalties/Interest			
Late Payments			

Three Largest Taxpayers	Description	Assessed Valuation

List all current debt secured by General Obligation bond:

Year					
Purpose					
Security Pledged					
Amount					
Maturity Date (mo/yr)					
Debt Holder					
Debt Coverage Requirement					
Avg. Annual Required Payment					
Outstanding Balance					

Use additional sheets if more room is required to list all current G.O. debt.

7.4.6 Sales Tax Information

(Complete only if sales tax is pledged to repay your loan.)

Sales tax revenue history for the most current fifteen months:

Month/Year	Amount Collected

List all current debt secured by sales tax:

Year Issued									
Purpose									
Amount									
Maturity Date (mo/yr)									
Debt Holder									
Debt Coverage Requirement									
Avg. Annual Required Payment									
Outstanding Balance									

Use additional sheets if more room is required to list all current sales tax debt.

7.4.7 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 help expedite the review process.

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 section 8.4.16.	×
♦ A public hearing held discussing the project and the use of an SRF loan to finance the project. (See section 8.4.15)	×
♦ Minutes of the public hearing prepared and submitted to the department for inclusion into the final Facilities Plan.	×
♦ The affidavit of publication of the public hearing received and submitted to the department for inclusion into the final Facilities Plan. (See section 8.4.15)	×
♦ The four review agencies contacted and responses received for inclusion into the final Facilities Plan. (See section 8.4.16)	
The Cultural Resources Effects Assessment Summary and supporting documentation, such as an archaeological survey or Historic Register database search. (See section 8.4.18)	

7.4.8 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	Proposed 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.	$1,475,000
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	Proposed 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. Cost 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		$1,475,000

City of Mobridge

Name of Applicant

Signature of Authorized Representative

September 26, 2014

Date

7.4.9 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 preharvest planning, 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 pumpout 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 underused 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 collection and 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		$0

City of Mobridge

Name of Applicant

Signature of Authorized Representative

Sep 26, 2014

Date

7.4.10 Preaward Compliance Review

FORM Approved By OMB: No. 2030-0020 Expires 12-31-2011

United States Environmental Protection Agency
Washington, DC 20460

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note : Read instructions on other side before completing form.

I. Applicant/Recipient (Name, Address, State, Zip Code).	DUNS No.
City of Mobridge, 114 1st Avenue East, Mobridge, SD 57601	938131075

II. Is the applicant currently receiving EPA assistance? Yes

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) None

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective action taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.) None

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3)). None

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below. Yes

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable bypersons with disabilities, explain how a regulatory exception (40 C.F.R. § 7.70) applies. Yes

VII.* Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex,age, or disability in its programs or activities? (40 C.F.R. § 5.140 and § 7.95) Yes

a. Do the methods of notice accommodate those with impaired vision or hearing?Yes b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications? Yes c. Does the notice identify a designated civil rights coordinator? Yes

VIII.* Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. § 7.85(a)) Yes

IX.* Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166) Yes

X.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator. Christine Goldsmith, City Administrator, 114 1st Avenue East, Mobridge, SD 57601, steveg@westriv.com, 605-845-3555

XI* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet address for, or a copy of, the procedures. No

For the Applicant/Recipient I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official	B. Title of Authorized Official	C. Date
	Mayor	

For the U.S. Environmental Protection Agency I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preawardcompliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisionsof 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized EPA Official See ** note on reverse side.	B. Title of Authorized EPA Official	C. Date

EPA Form 4700-4 (Rev. 03/2008). Previous editions are obsolete.

7.4.11 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, forgery, 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.

Jamie Dietterle, Mayor

Name & Title of Authorized Representative

Signature of Authorized Representative Date

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

PREVIOUS AUDIT'S

CITY OF MOBRIDGE
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
ASSETS:			
Cash and Cash Equivalents	1,561,955.22	300,807.87	1,862,763.09
151 Investments			0.00
108 Taxes Receivable-Current	0.00		0.00
110 Taxes Receivable--Delinquent	36,957.42		36,957.42
115 Accounts Receivable, Net	(4,565.40)	198.00	(4,367.40)
117 Unbilled Accounts Receivable			0.00
121 Special Assessments Receivable--Current			0.00
122 Special Assessments Receivable--Delinquent	7,379.26		7,379.26
123 Special Assessments Receivable--Deferred			0.00
125 Interest Receivable--Special Assessments			0.00
126 Governmental Unit's Share of Assessment Improvement Costs			0.00
128 Notes Receivable			0.00
131 Due from Capital Project Funds	210,379.37		210,379.37
132 Due from Federal Government	2,066.07	10,017.62	12,083.69
132 Due from State Government	205,600.67		205,600.67
133 Due from County	32,260.73		32,260.73
135 Interest Receivable	1,700.10	28.63	1,728.73
136 Accrued Interest on Investments Purchased			0.00
137 Dividend Receivable			0.00
141 Inventory of Supplies	13,011.15		13,011.15
154 Deposits			0.00
155 Prepaid Expenses			0.00
157 Unamortized Discounts on Bonds Sold			0.00
159 Deferred Charges			0.00
133 Advance to General Fund			0.00
107.1 Restricted Cash and Cash Equivalents	22,754.50		22,754.50
107.2 Restricted Investments			0.00
TOTAL ASSETS	2,089,499.09	311,052.12	2,400,551.21
LIABILITIES AND FUND BALANCES:			
Liabilities:			
201 Claims Payable			0.00
202 Accounts Payable	39,601.40	42,923.60	82,525.00
203 Judgments Payable			0.00
204 Annuities Payable			0.00
205 Notes Payable			0.00
206 Contracts Payable			0.00
207 Contracts Payable--Retained Percentage			0.00
208 Due to _____ Funds			0.00
209 Due to General Fund		56,431.49	56,431.49
229 Due to Component Unit			0.00
210 Due to Resigned Employees			0.00
211 Matured Bonds Payable			0.00
212 Matured Interest Payable			0.00
213 Incurred but Not Reported Claims			0.00
215 Accrued Interest Payable			0.00
216 Accrued Wages Payable			0.00
217 Accrued Taxes Payable	1,299.14	413.00	1,712.14
218 Amount Held for Special Assessment Debt Service			0.00
219 Amounts Held for Others			0.00
220 Customer Deposits			0.00
221 Due to Fiscal Agent			0.00
223 Revenue Collected in Advance			0.00
224 Deferred Revenue	75,522.64	2,565.77	78,088.41
225 Registered Warrants			0.00
226 Bonds Payable Current:			
226.01 General Obligation			0.00
226.02 Revenue			0.00
226.03 Special Assessment			0.00

CITY OF MOBRIDGE
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
227 Unamortized Premiums on Bonds Sold			0.00
228 Payable from Restricted Assets			0.00
236 Advance from Sewer Fund			0.00
99999 Undistributed Receivables			0.00
Total Liabilities	116,423.18	102,333.86	218,757.04
Fund Balances:			
261 Reserved For:			0.00
261.01 Encumbrance			0.00
261.02 Inventory	12,126.65		12,126.65
261.03 Advance to _____ Fund			0.00
261.04 Debt Service	7,252.00		7,252.00
261.05 Debt Service Armory	15,502.50		15,502.50
261.13 Special Assessment Bond Sinking			0.00
261.15 Permanently Reserved Purposes			0.00
261.16 Other Purposes (26302 Prepaids)	16,710.48	1,010.58	17,721.06
262 Unreserved Fund Balances:			
262.01 Designated for Next Year's Appropriation	212,459.00		212,459.00
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.03 Designated for Capital Outlay Accumulations	383,638.94		383,638.94
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.05 Designated for Capital Replacements			0.00
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.02 Designated for Other Purposes	60,597.35		60,597.35
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.09 Undesignated, Reported in	1,264,788.99		1,264,788.99
Reported in Non-Major:			0.00
Special Revenue Funds		64,261.43	64,261.43
Debt Service Funds			0.00
Capital Project Funds		143,446.25	143,446.25
Permanent Funds			0.00
Total Fund Balances	1,973,075.91	208,718.26	2,181,794.17
TOTAL LIABILITIES AND FUND BALANCES	2,089,499.09	311,052.12	2,400,551.21

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
Revenues:			
310 Taxes:			
311 General Property Taxes	559,456.28		559,456.28
312 Airflight Property Tax	0.00		0.00
313 General Sales and Use Taxes	1,673,106.37	100,505.00	1,773,611.37
314 Gross Receipts Business Taxes	2,305.69		2,305.69
315 Amusement Taxes	840.00		840.00
316 911 Telephone Surcharge	0.00		0.00
317 Excise Tax	0.00		0.00
318 Tax Deed Revenue	0.00		0.00
319 Penalties and Interest on Delinquent Taxes	2,776.93		0.00 2,776.93
320 Licenses and Permits	22,802.21		22,802.21
330 Intergovernmental Revenue:			
331 Federal Grants	66,034.86		66,034.86
332 Federal Shared Revenue		109,759.00	109,759.00
333 Federal Payments in Lieu of Taxes			0.00
334 State Grants			0.00
335 State Shared Revenue:			
335.01 Bank Franchise Tax	11,614.20		11,614.20
335.02 Motor Vehicle Commercial Prorate	5,268.91		5,268.91
335.03 Liquor Tax Reversion	23,835.20		23,835.20
335.04 Motor Vehicle Licenses (5%)	22,008.32		22,008.32
335.06 Fire Insurance Premiums Reversion	0.00		0.00
335.07 Liquor License Reversion	0.00		0.00
335.08 Local Government Highway and Bridge Fund	101,328.59		101,328.59
335.20 Other	0.00		0.00
336 State Payments in Lieu of Taxes	0.00		0.00
338 County Shared Revenue:			
338.01 County Road Tax (25%)	0.00		0.00
338.02 County HBR Tax (25%)	828.91		828.91
338.03 County Wheel Tax	9,259.49		9,259.49
338.99 Other	0.00		0.00
339 Other Intergovernmental Revenue	1,095.00		1,095.00
340 Charges for Goods and Services:			
341 General Government	2,068.82		2,068.82
342 Public Safety	124,913.27	7,775.00	132,688.27
343 Highways and Streets	4,188.14		4,188.14
344 Sanitation	1,235.00		1,235.00
345 Health	0.00		0.00
346 Culture and Recreation	24,532.09		24,532.09

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
347 Ambulance	0.00		0.00
348 Cemetery	0.00		0.00
349 Other	0.00		0.00
350 Fines and Forfeits:			
351 Court Fines and Costs	247.27		247.27
352 Forfeits	0.00		0.00
353 Parking Meter Fines	0.00		0.00
354 Library	6,778.74		6,778.74
359 Other	0.00		0.00
360 Miscellaneous Revenue:			
361 Investment Earnings	4,396.46	91.00	4,487.46
362 Rentals	11,021.00		11,021.00
363 Special Assessments	1,392.96	28,066.00	29,458.96
364 Street Assessments	61,564.56		61,564.56
367 Contributions and Donations from Private Sources	58,148.06	6,600.00	64,748.06
368 Liquor Operating Agreement Income	0.00		0.00
369 Other	35,366.85	1,200.00	36,566.85
385 Airport Rev Fuel Sales & Lease	177,329.55		177,329.55
388 Solid Waste Collection	259,447.52		259,447.52
Total Revenue	3,275,191.25	253,996.00	3,529,187.25
Expenditures:			
410 General Government:			
411 Legislative	24,620.00		24,620.00
412 Executive	81,140.91		81,140.91
413 Elections	1,619.42		1,619.42
414 Financial Administration	107,289.89		107,289.89
419 Other	66,210.89		66,210.89
Total General Government	280,881.11	0.00	280,881.11
420 Public Safety:			
421 Police	848,609.68	8,641.00	857,250.68
422 Fire	51,441.57		51,441.57
423 Protective Inspection	0.00		0.00
429 Other Protection	249.26		249.26
Total Public Safety	900,300.51	8,641.00	908,941.51
430 Public Works:			
431 Highways and Streets	515,454.15	80,304.00	595,758.15
432 Sanitation	195,624.59		195,624.59
433 Water	0.00		0.00
434 Electricity	0.00		0.00

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
435 Airport	212,318.81	32,136.00	244,454.81
436 Parking Facilities	0.00		0.00
437 Cemeteries	0.00		0.00
438 Natural Gas	0.00		0.00
439 Transit	0.00		0.00
Total Public Works	923,397.55	112,440.00	1,035,837.55
440 Health and Welfare:			
441 Health	6,580.43		6,580.43
442 Home Health	0.00		0.00
443 Mental Health Centers	0.00		0.00
444 Humane Society	0.00		0.00
445 Drug Education	0.00		0.00
446 Ambulance	0.00		0.00
447 Hospitals, Nursing Homes and Rest Homes	2,000.00		0.00 2,000.00
449 Other	0.00		0.00
Total Health and Welfare	8,580.43	0.00	8,580.43
450 Culture and Recreation:			
451 Recreation	137,016.57		137,016.57
452 Parks	126,042.76		126,042.76
455 Libraries	110,508.70		110,508.70
456 Auditorium	88,655.43		88,655.43
457 Historical Preservation	0.00		0.00
458 Museums	6,000.00		6,000.00
Total Culture and Recreation	468,223.46	0.00	468,223.46
460 Conservation and Development:			
463 Urban Redevelopment and Housing	0.00		0.00
465 Economic Development and Assistance (Industrial Development)	25,537.81	113,245.00	138,782.81
466 Economic Opportunity			0.00
Total Conservation and Development	25,537.81	113,245.00	138,782.81
470 Debt Service	46,854.00	168,391.00	215,245.00
480 Intergovernmental Expenditures	0.00		0.00
485 Capital Outlay	0.00		0.00
490 Miscellaneous:			
491 Judgements and Losses	0.00		0.00

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2012

	General Fund	Other Governmental Funds	Total Governmental Funds
492 Other Expenditures			0.00
499 Liquor Operating Agreements	42.25		42.25
Total Miscellaneous	42.25	0.00	42.25
Total Expenditures	2,653,817.12	402,717.00	3,056,534.12
Excess of Revenue Over (Under) Expenditures	621,374.13	(148,721.00)	472,653.13
Other Financing Sources (Uses):			
391.01 Transfers In		176,391.00	176,391.00
391.02 Long-Term Debt Issued			0.00
391.03 Sale of Municipal Property	6,522.17		6,522.17
391.04 Compensation for Loss or Damage to Capital Assets	127.64		127.64
511 Transfers Out (Enter as Negative)	(101,244.02)	(21.00)	(101,265.02)
512 **Discount on Bonds Issued** (Enter as Negative)	0.00		0.00
513 Payments to Refunded Debt Escrow Agent (Enter as Negative)	0.00		0.00
Total Other Financing Sources (Uses)	(94,594.21)	176,370.00	81,775.79
391.06/(514) Special Items	0.00		0.00
391.05/(515) Extraordinary Items	0.00		0.00
Net Change in Fund Balances	526,779.92	27,649.00	554,428.92
Change in Fund Balance Reserves	0.00		0.00
Fund Balance - Beginning	1,602,492.73	(55,841.00)	1,546,651.73
Adjustments:			
Prior Period Adjustment			0.00
			0.00
Adjusted Fund Balance - Beginning	1,602,492.73	(55,841.00)	1,546,651.73
FUND BALANCE- ENDING	2,129,272.65	(28,192.00)	2,101,080.65

CITY OF MOBRIDGE
BALANCE SHEET
PROPRIETARY FUNDS
December 31, 2012

	Enterprise Funds				
	Major			Non-Major	
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	532,769.56	976,845.63	7,029.00	105,844.00	1,622,488.19
151 Investments			2,571.00		2,571.00
115 Accounts Receivable, Net	73,118.67	6,109.51	2,125.00	149.00	81,502.18
117 Unbilled Accounts Receivable					0.00
121 Special Assessments Receivable--Current					0.00
122 Special Assessments Receivable--Delinquent					0.00
123 Special Assessments Receivable--Deferred					0.00
125 Interest Receivable--Special Assessments					0.00
126 Governmental Unit's Share of Assessment Improvement Costs					0.00
128 Notes Receivable					0.00
131 Due from _____ Fund					0.00
132 Due from Other Government					0.00
129 Due from Component Unit					0.00
135 Interest Receivable	530.04	964.98	9.48	105.00	1,609.50
136 Accrued Interest on Investments Purchased					0.00
137 Dividend Receivable					0.00
141 Inventory of Supplies	78,564.46	23,471.00			102,035.46
142 Inventory of Stores Purchased for Resale					0.00
155 Prepaid Expenses	0.00	0.00			0.00
Total Current Assets	684,982.73	1,007,391.12	11,734.48	106,098.00	1,810,206.33
Noncurrent Assets:					
107.1 Restricted Cash and Cash Equivalents	3,785.00				3,785.00
107.2 Restricted Investments					0.00
154 Deposits					0.00
157 Unamortized Discounts on Bonds Sold					0.00
159 Deferred Charges	14,133.24				14,133.24
133 Advance to General Fund					0.00
Capital Assets:					
160 Land	104,395.50	34.00	565.00		104,994.50
162 Buildings	4,619,437.54	3,816,429.00			8,435,866.54
164 Improvements Other Than Buildings	1,136,091.00				1,136,091.00
166 Machinery and Equipment	151,782.00	206,163.00	18,019.00		375,964.00
168 Construction Work In Progress					0.00
Less: Accumulated Depreciation (Credit)	(2,779,084.00)	(2,647,733.00)	(18,019.00)	( )	(5,444,836.00)
Total Noncurrent Assets	3,250,540.28	1,374,893.00	565.00	0.00	4,625,998.28
TOTAL ASSETS	3,935,523.01	2,382,284.12	12,299.48	106,098.00	6,436,204.61
LIABILITIES:					
Current Liabilities:					
201 Claims Payable					0.00
202 Accounts Payable	16,649.71	11,497.00	3,647.00		31,793.71
203 Judgments Payable					0.00
204 Annuities Payable					0.00
205 Notes Payable					0.00
206 Contracts Payable					0.00
207 Contracts Payable--Retained Percentage					0.00
208 Due to _____ Fund					0.00
209 Due to _____ Government					0.00
229 Due to Component Unit					0.00
210 Due to Resigned Employees					0.00
211 Matured Bonds Payable					0.00

CITY OF MOBRIDGE
BALANCE SHEET
PROPRIETARY FUNDS
December 31, 2012

	Enterprise Funds				
	Major		Non-Major		
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
212 Matured Interest Payable					0.00
213 Incurred but Not Reported Claims					0.00
215 Accrued Interest Payable					0.00
216 Accrued Wages Payable					0.00
217 Accrued Taxes Payable					0.00
218 Amount Held for Special Assessment Debt Service					0.00
219 Amounts Held for Others					0.00
220 Customer Deposits					0.00
221 Due to Fiscal Agent					0.00
223 Revenue Collected In Advance					0.00
224 Deferred Revenue					0.00
225 Registered Warrants					0.00
226 Bonds Payable Current:					
226.01 General Obligation					0.00
226.02 Revenue	125,451.00				125,451.00
226.03 Special Assessment					0.00
227 Unamortized Premiums on Bonds Sold					0.00
228 Payable from Restricted Assets					0.00
Total Current Liabilities	142,100.71	11,497.00	3,647.00	0.00	157,244.71
Noncurrent Liabilities:					
231 Bonds Payable:					
231.01 General Obligation					0.00
231.02 Revenue	1,040,757.00				1,040,757.00
231.03 Special Assessment					0.00
232 Special Assessment Debt with Governmental Commitment					0.00
233 Accrued Leave Payable					0.00
234 Deferred Compensation Payable–Employee	13,412.96	13,729.00			27,141.96
235 Accrued Landfill Closure and Postclosure Care Costs					0.00
236 Advance from _____ Fund					0.00
239 Other Long-Term Debt					0.00
Total Noncurrent Liabilities	1,054,169.96	13,729.00	0.00	0.00	1,067,898.96
NET ASSETS:					
251.06 Reserved for Equipment Purchase	158,869.16	429,417.00			588,286.16
251.09 Reserved for Sprinkler System			2,571.00		2,571.00
262.10 Reserved for Next Year's Appropriations					0.00
253.10 Invested In Capital Assets, Net of Related Debt	2,066,361.00			1,335.00	2,067,696.00
253.20 Restricted Net Assets, Restricted for:					
253.21 Revenue Bond Debt Service	6,641.20				6,641.20
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 Net Assets	507,380.98	1,927,641.12	6,081.48	104,763.00	2,545,866.58
Total Net Assets	2,739,252.34	2,357,058.12	8,652.48	106,098.00	5,211,060.94
TOTAL LIABILITIES AND NET ASSETS	3,935,523.01	2,382,284.12	12,299.48	106,098.00	6,436,204.61

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET ASSETS
PROPRIETARY FUNDS
For the Year Ended December 31, 2011

	Enterprise Funds				
	Major			Non-Major	
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
Operating Revenue:					
380 Charges for Goods and Services	747,044.00	391,950.00	12,710.00	13,110.00	1,164,814.00
Revenue Dedicated to Servicing Debt					0.00
380.6 Lottery Sales					0.00
367 Contributions and Donations					0.00
369 Miscellaneous	1,596.00	5,963.00			7,559.00
Total Operating Revenue	748,640.00	397,913.00	12,710.00	13,110.00	1,172,373.00
Operating Expenses:					
410 Personal Services	215,705.00	132,280.00			347,985.00
420 Other Current Expense	615,368.00	143,001.00	38,420.00	8,230.00	805,019.00
426.2 Materials (Cost of Goods Sold)	264.00				264.00
457 Depreciation					0.00
Total Operating Expenses	831,337.00	275,281.00	38,420.00	8,230.00	1,153,268.00
Operating Income (Loss)	(82,697.00)	122,632.00	(25,710.00)	4,880.00	19,105.00
Nonoperating Revenue (Expense):					
330 Operating Grants	190,052.00				190,052.00
361 Investment Earnings	1,505.00	3,753.00	12.00	419.00	5,689.00
362 Rental Revenue					0.00
433 Improvements other than Buildings					0.00
434 Machinery & Equipment					0.00
470 Interest Expense and Fiscal Charges	(43,337.00)	(1,749.00)			(45,086.00)
(492)366 Gain (Loss) on Disposition of Assets					0.00
(429)369.01 Other					0.00
Total Nonoperating Revenue (Expense)	148,220.00	2,004.00	12.00	419.00	150,655.00
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	65,523.00	124,636.00	(25,698.00)	5,299.00	169,760.00
391.07 Capital Contributions					0.00
391.1 Transfers In			25,000.00		25,000.00
511 Transfers Out					0.00
391.02 Long-Term Debt Issued					0.00
391.06/(514) Special Items					0.00
391.05/(515) Extraordinary Items					0.00
391.04 Insurance Claims					0.00
Change in Net Assets	65,523.00	124,636.00	(698.00)	5,299.00	194,760.00
Net Assets - Beginning	2,579,620.00	2,111,955.00	7,064.00	92,146.00	4,790,785.00
Adjustments:					0.00
					0.00
Adjusted Net Assets - Beginning	2,579,620.00	2,111,955.00	7,064.00	92,146.00	4,790,785.00
NET ASSETS - ENDING	2,645,143.00	2,236,591.00	6,366.00	97,445.00	4,985,545.00

CITY OF MOBRIDGE
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
ASSETS:			
Cash and Cash Equivalents	1,846,782.41	155,722.21	2,002,504.62
151 Investments			0.00
108 Taxes Receivable-Current	0.00		0.00
110 Taxes Receivable--Delinquent	50,995.18		50,995.18
115 Accounts Receivable, Net	34,147.24	795.00	34,942.24
117 Unbilled Accounts Receivable			0.00
121 Special Assessments Receivable--Current			0.00
122 Special Assessments Receivable--Delinquent	9,354.84		9,354.84
123 Special Assessments Receivable--Deferred			0.00
125 Interest Receivable--Special Assessments			0.00
126 Governmental Unit's Share of Assessment Improvement Costs			0.00
128 Notes Receivable			0.00
131 Due from Capital Project Funds	246,545.02		246,545.02
132 Due from Federal Government	1,351.00	34,263.93	35,614.93
132 Due from State Government	296,180.84		296,180.84
133 Due from County	32,125.00		32,125.00
135 Interest Receivable	2,748.20	35.15	2,783.35
136 Accrued Interest on Investments Purchased			0.00
137 Dividend Receivable			0.00
141 Inventory of Supplies	13,011.15		13,011.15
154 Deposits			0.00
155 Prepaid Expenses			0.00
157 Unamortized Discounts on Bonds Sold			0.00
159 Deferred Charges			0.00
133 Advance to General Fund			0.00
107.1 Restricted Cash and Cash Equivalents	195,221.05		195,221.05
107.2 Restricted Investments			0.00
TOTAL ASSETS	2,728,461.93	190,816.29	2,919,278.22
LIABILITIES AND FUND BALANCES:			
Liabilities:			
201 Claims Payable			0.00
202 Accounts Payable	99,903.59	19,389.48	119,293.07
203 Judgments Payable			0.00
204 Annuities Payable			0.00
205 Notes Payable			0.00
206 Contracts Payable			0.00
207 Contracts Payable--Retained Percentage			0.00
208 Due to _____ Funds			0.00
209 Due to General Fund		44,386.02	44,386.02
229 Due to Component Unit			0.00
210 Due to Resigned Employees			0.00
211 Matured Bonds Payable			0.00
212 Matured Interest Payable			0.00
213 Incurred but Not Reported Claims			0.00
215 Accrued Interest Payable			0.00
216 Accrued Wages Payable			0.00
217 Accrued Taxes Payable	1,240.42	501.00	1,741.42
218 Amount Held for Special Assessment Debt Service			0.00
219 Amounts Held for Others			0.00
220 Customer Deposits			0.00
221 Due to Fiscal Agent			0.00
223 Revenue Collected in Advance			0.00
224 Deferred Revenue	130,593.04	2,565.77	133,158.81
225 Registered Warrants			0.00
226 Bonds Payable Current:			
226.01 General Obligation			0.00
226.02 Revenue			0.00
226.03 Special Assessment			0.00

CITY OF MOBRIDGE
BALANCE SHEET
GOVERNMENTAL FUNDS
December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
227 Unamortized Premiums on Bonds Sold			0.00
228 Payable from Restricted Assets			0.00
236 Advance from Sewer Fund			0.00
99999 Undistributed Receivables			0.00
Total Liabilities	231,737.05	66,842.27	298,579.32
Fund Balances:			
261 Reserved For:			0.00
261.01 Encumbrance			0.00
261.02 Inventory			0.00
261.03 Advance to _____ Fund			0.00
261.04 Debt Service	8,428.00		8,428.00
261.05 Debt Service Armory	19,012.50		19,012.50
261.06 Pool Donations for Construction	167,780.55		167,780.55
261.15 Permanently Reserved Purposes			0.00
261.16 Other Purposes (26302 Prepaids)		6,342.16	6,342.16
262 Unreserved Fund Balances:			
262.01 Designated for Next Year's Appropriation	226,183.00		226,183.00
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.03 Designated for Capital Outlay Accumulations	390,226.57		390,226.57
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.05 Designated for Capital Replacements			0.00
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.02 Designated for Other Purposes	128,529.64	1,606.80	130,136.44
Reported in Non-Major:			0.00
Special Revenue Funds			0.00
Debt Service Funds			0.00
Capital Project Funds			0.00
Permanent Funds			0.00
262.09 Undesignated, Reported in	1,556,564.62		1,556,564.62
Reported in Non-Major:			0.00
Special Revenue Funds		86,560.19	86,560.19
Debt Service Funds			0.00
Capital Project Funds		29,464.87	29,464.87
Permanent Funds			0.00
Total Fund Balances	2,496,724.88	123,974.02	2,620,698.90
TOTAL LIABILITIES AND FUND BALANCES	2,728,461.93	190,816.29	2,919,278.22

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
Revenues:			
310 Taxes:			
311 General Property Taxes	576,876.37		576,876.37
312 Airflight Property Tax	0.00		0.00
313 General Sales and Use Taxes	1,764,320.88	115,180.93	1,879,501.81
314 Gross Receipts Business Taxes	2,321.13		2,321.13
315 Amusement Taxes	780.00		780.00
316 911 Telephone Surcharge	0.00		0.00
317 Excise Tax	0.00		0.00
318 Tax Deed Revenue	0.00		0.00
319 Penalties and Interest on Delinquent Taxes	2,361.48		0.00 2,361.48
320 Licenses and Permits	24,674.50		24,674.50
330 Intergovernmental Revenue:			
331 Federal Grants	41,603.05		41,603.05
332 Federal Shared Revenue		82,762.49	82,762.49
333 Federal Payments in Lieu of Taxes			0.00
334 State Grants	10,000.00		10,000.00
335 State Shared Revenue:			
335.01 Bank Franchise Tax	1,212.18		1,212.18
335.02 Motor Vehicle Commercial Prorate	4,919.87		4,919.87
335.03 Liquor Tax Reversion	23,006.30		23,006.30
335.04 Motor Vehicle Licenses (5%)	24,254.94		24,254.94
335.06 Fire Insurance Premiums Reversion	0.00		0.00
335.07 Liquor License Reversion	0.00		0.00
335.08 Local Government Highway and Bridge Fund	106,072.17		106,072.17
335.20 Other	0.00		0.00
336 State Payments in Lieu of Taxes	0.00		0.00
338 County Shared Revenue:			
338.01 County Road Tax (25%)	4,107.93		4,107.93
338.02 County HBR Tax (25%)	878.93		878.93
338.03 County Wheel Tax	8,526.74		8,526.74
338.99 Other	0.00		0.00
339 Other Intergovernmental Revenue	1,500.10		1,500.10
340 Charges for Goods and Services:			
341 General Government	2,566.04		2,566.04
342 Public Safety	187,324.00	8,853.00	196,177.00
343 Highways and Streets	4,383.50		4,383.50
344 Sanitation	1,530.00		1,530.00
345 Health	0.00		0.00
346 Culture and Recreation	0.00		0.00

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
347 Ambulance	0.00		0.00
348 Cemetery	0.00		0.00
349 Other	0.00		0.00
350 Fines and Forfeits:			
351 Court Fines and Costs	300.70		300.70
352 Forfeits	0.00		0.00
353 Parking Meter Fines	0.00		0.00
354 Library	7,830.00		7,830.00
359 Other	0.00		0.00
360 Miscellaneous Revenue:			
361 Investment Earnings	5,400.84	74.17	5,475.01
362 Rentals	7,621.00		7,621.00
363 Special Assessments	246.76		246.76
364 Street Assessments	62,539.13		62,539.13
367 Contributions and Donations from Private Sources	173,342.79	21,354.60	194,697.39
368 Liquor Operating Agreement Income	0.00		0.00
369 Other	39,286.73	2,120.00	41,406.73
385 Airport Rev Fuel Sales & Lease	143,087.72		143,087.72
388 Solid Waste Collection	262,240.18		262,240.18
Total Revenue	3,495,115.96	230,345.19	3,725,461.15
Expenditures:			
410 General Government:			
411 Legislative	24,248.98		24,248.98
412 Executive	77,336.90		77,336.90
413 Elections	504.37		504.37
414 Financial Administration	105,614.58		105,614.58
419 Other	25,757.56		25,757.56
Total General Government	233,462.39	0.00	233,462.39
420 Public Safety:			
421 Police	868,507.94	5,291.41	873,799.35
422 Fire	59,767.87		59,767.87
423 Protective Inspection	0.00		0.00
429 Other Protection	243.40	28.00	271.40
Total Public Safety	928,519.21	5,319.41	933,838.62
430 Public Works:			
431 Highways and Streets	551,957.97	680,677.94	1,232,635.91
432 Sanitation	196,605.97		196,605.97
433 Water	0.00		0.00
434 Electricity	0.00		0.00

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
435 Airport	269,568.79	230,658.67	500,227.46
436 Parking Facilities	0.00		0.00
437 Cemeteries	0.00		0.00
438 Natural Gas	0.00		0.00
439 Transit	0.00		0.00
Total Public Works	1,018,132.73	911,336.61	1,929,469.34
440 Health and Welfare:			
441 Health	7,378.72		7,378.72
442 Home Health	0.00		0.00
443 Mental Health Centers	0.00		0.00
444 Humane Society	0.00		0.00
445 Drug Education	0.00		0.00
446 Ambulance	0.00		0.00
447 Hospitals, Nursing Homes and Rest Homes	2,000.00		0.00 2,000.00
449 Other	0.00		0.00
Total Health and Welfare	9,378.72	0.00	9,378.72
450 Culture and Recreation:			
451 Recreation	25,332.81		25,332.81
452 Parks	148,796.48		148,796.48
455 Libraries	125,658.57	240,134.37	365,792.94
456 Auditorium	78,754.64		78,754.64
457 Historical Preservation	0.00		0.00
458 Museums	6,000.00		6,000.00
Total Culture and Recreation	384,542.50	240,134.37	624,676.87
460 Conservation and Development:			
463 Urban Redevelopment and Housing	0.00		0.00
465 Economic Development and Assistance (Industrial Development)	32,404.82	109,263.23	141,668.05
466 Economic Opportunity			0.00
Total Conservation and Development	32,404.82	109,263.23	141,668.05
470 Debt Service	85,100.00		85,100.00
480 Intergovernmental Expenditures	0.00		0.00
485 Capital Outlay	0.00		0.00
490 Miscellaneous:			
491 Judgements and Losses	0.00		0.00

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
For the Year Ended December 31, 2013

	General Fund	Other Governmental Funds	Total Governmental Funds
492 Other Expenditures			0.00
499 Liquor Operating Agreements	95.80		95.80
Total Miscellaneous	95.80	0.00	95.80
Total Expenditures	2,691,636.17	1,266,053.62	3,957,689.79
Excess of Revenue Over (Under) Expenditures	803,479.79	(1,035,708.43)	(232,228.64)
Other Financing Sources (Uses):			
391.01 Transfers In		41,160.15	41,160.15
391.02 Long-Term Debt Issued		692,756.00	692,756.00
391.03 Sale of Municipal Property	50.00		50.00
391.04 Compensation for Loss or Damage to Capital Assets			0.00
511 Transfers Out (Enter as Negative)	(136,826.37)		(136,826.37)
512 Discount on Bonds Issued (Enter as Negative)	0.00		0.00
513 Payments to Refunded Debt Escrow Agent (Enter as Negative)	0.00		0.00
Total Other Financing Sources (Uses)	(136,776.37)	733,916.15	597,139.78
391.06/(514) Special Items	0.00		0.00
391.05/(515) Extraordinary Items	0.00		0.00
Net Change in Fund Balances	666,703.42	(301,792.28)	364,911.14
Change in Fund Balance Reserves	0.00		0.00
Fund Balance - Beginning	1,830,021.46	491,608.57	2,321,630.03
Adjustments:			
Prior Period Adjustment			0.00
			0.00
Adjusted Fund Balance - Beginning	1,830,021.46	491,608.57	2,321,630.03
FUND BALANCE- ENDING	2,496,724.88	189,816.29	2,686,541.17

CITY OF MOBRIDGE
BALANCE SHEET
PROPRIETARY FUNDS
December 31, 2013

	Enterprise Funds				
	Major		Non-Major		
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
ASSETS:					
Current Assets:					
Cash and Cash Equivalents	598,046.17	1,092,012.48	11,378.01	69,231.87	1,770,668.53
151 Investments			2,571.42		2,571.42
115 Accounts Receivable, Net	61,567.69	6,633.93	2,125.00	162.01	70,488.63
117 Unbilled Accounts Receivable					0.00
121 Special Assessments Receivable--Current					0.00
122 Special Assessments Receivable--Delinquent					0.00
123 Special Assessments Receivable--Deferred					0.00
125 Interest Receivable--Special Assessments					0.00
126 Governmental Unit's Share of Assessment Improvement Costs					0.00
128 Notes Receivable					0.00
131 Due from _____ Fund					0.00
132 Due from Other Government					0.00
129 Due from Component Unit					0.00
135 Interest Receivable	724.32	1,322.58	13.78	83.85	2,144.53
136 Accrued Interest on Investments Purchased					0.00
137 Dividend Receivable					0.00
141 Inventory of Supplies	121,868.85	35,624.04			157,492.89
142 Inventory of Stores Purchased for Resale					0.00
155 Prepaid Expenses	0.00	0.00			0.00
Total Current Assets	782,207.03	1,135,593.03	16,088.21	69,477.73	2,003,366.00
Noncurrent Assets:					
107.1 Restricted Cash and Cash Equivalents	3,785.00				3,785.00
107.2 Restricted Investments					0.00
154 Deposits					0.00
157 Unamortized Discounts on Bonds Sold					0.00
159 Deferred Charges	3,533.31				3,533.31
133 Advance to General Fund					0.00
Capital Assets:					
160 Land	104,395.50	34.00	565.00		104,994.50
162 Buildings	4,619,437.54	3,816,428.56			8,435,866.10
164 Improvements Other Than Buildings	1,136,091.00				1,136,091.00
166 Machinery and Equipment	151,782.00	206,162.65	18,788.65		376,733.30
168 Construction Work in Progress					0.00
Less: Accumulated Depreciation (Credit)	(2,779,084.00)	(2,647,733.09)	(18,019.00)	( )	(5,444,836.09)
Total Noncurrent Assets	3,239,940.35	1,374,892.12	1,334.65	0.00	4,616,167.12
TOTAL ASSETS	4,022,147.38	2,510,485.15	17,422.86	69,477.73	6,619,533.12
LIABILITIES:					
Current Liabilities:					
201 Claims Payable					0.00
202 Accounts Payable	16,860.28	19,451.18	888.49		37,199.95
203 Judgments Payable					0.00
204 Annuities Payable					0.00
205 Notes Payable					0.00
206 Contracts Payable					0.00
207 Contracts Payable--Retained Percentage					0.00
208 Due to _____ Fund					0.00
209 Due to _____ Government					0.00
229 Due to Component Unit					0.00
210 Due to Resigned Employees					0.00
211 Matured Bonds Payable					0.00

CITY OF MOBRIDGE
BALANCE SHEET
PROPRIETARY FUNDS
December 31, 2013

	Enterprise Funds				
	Major		Non-Major		
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
212 Matured Interest Payable					0.00
213 Incurred but Not Reported Claims					0.00
215 Accrued Interest Payable					0.00
216 Accrued Wages Payable					0.00
217 Accrued Taxes Payable					0.00
218 Amount Held for Special Assessment Debt Service					0.00
219 Amounts Held for Others					0.00
220 Customer Deposits					0.00
221 Due to Fiscal Agent					0.00
223 Revenue Collected in Advance					0.00
224 Deferred Revenue					0.00
225 Registered Warrants					0.00
226 Bonds Payable Current:					
226.01 General Obligation					0.00
226.02 Revenue					0.00
226.03 Special Assessment					0.00
227 Unamortized Premiums on Bonds Sold					0.00
228 Payable from Restricted Assets					0.00
Total Current Liabilities	16,860.28	19,451.18	888.49	0.00	37,199.95
Noncurrent Liabilities:					
231 Bonds Payable:					
231.01 General Obligation					0.00
231.02 Revenue	909,790.33				909,790.33
231.03 Special Assessment					0.00
232 Special Assessment Debt with Governmental Commitment					0.00
233 Accrued Leave Payable		6,589.27			6,589.27
234 Deferred Compensation Payable–Employee	17,432.14				17,432.14
235 Accrued Landfill Closure and Postclosure Care Costs					0.00
236 Advance from _____ Fund					0.00
239 Other Long-Term Debt					0.00
Total Noncurrent Liabilities	927,222.47	6,589.27	0.00	0.00	933,811.74
NET ASSETS:					
251.06 Reserved for Equipment Purchase	158,869.16	429,416.98			588,286.14
251.09 Reserved for Sprinkler System			2,571.00		2,571.00
262.10 Reserved for Next Year's Appropriations					0.00
253.10 Invested in Capital Assets, Net of Related Debt	2,191,866.08		1,334.73		2,193,200.81
253.20 Restricted Net Assets, Restricted for:					
253.21 Revenue Bond Debt Service	6,641.20				6,641.20
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 Net Assets	720,688.19	2,055,027.72	12,628.64	69,477.73	2,857,822.28
Total Net Assets	3,078,064.63	2,484,444.70	16,534.37	69,477.73	5,648,521.43
TOTAL LIABILITIES AND NET ASSETS	4,022,147.38	2,510,485.15	17,422.86	69,477.73	6,619,533.12

CITY OF MOBRIDGE
STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET ASSETS
PROPRIETARY FUNDS
For the Year Ended December 31, 2013

	Enterprise Funds				
	Major			Non-Major	
	Water Fund	Sewer Fund	Cemetery Fund	Water & Sewer Main Fund	Totals
Operating Revenue:					
380 Charges for Goods and Services	802,222.68	398,508.89	20,300.00	10,352.41	1,231,383.98
Revenue Dedicated to Servicing Debt					0.00
380.5 Lottery Sales					0.00
367 Contributions and Donations					0.00
369 Miscellaneous	2,701.85				2,701.85
Total Operating Revenue	804,924.53	398,508.89	20,300.00	10,352.41	1,234,085.83
Operating Expenses:					
410 Personal Services	227,216.06	108,918.10			336,134.16
420 Other Current Expense	247,336.47	183,170.54	38,211.53	1,740.00	470,458.54
426.2 Materials (Cost of Goods Sold)	218.54				218.54
457 Depreciation					0.00
Total Operating Expenses	474,771.07	292,088.64	38,211.53	1,740.00	806,811.24
Operating Income (Loss)	330,153.46	106,420.25	(17,911.53)	8,612.41	427,274.59
Nonoperating Revenue (Expense):					
330 Operating Grants					0.00
361 Investment Earnings	1,483.47	2,734.66	23.78	235.96	4,478.07
362 Rental Revenue					0.00
433 Improvements other than Buildings		(506.26)		(45,481.36)	(45,987.62)
434 Machinery & Equipment					0.00
470 Interest Expense and Fiscal Charges	(40,129.79)				(40,129.79)
(492)366 Gain (Loss) on Disposition of Assets					0.00
(429)369.01 Other					0.00
Total Nonoperating Revenue (Expense)	(38,646.32)	2,228.60	23.78	(45,245.40)	(81,639.34)
Income (Loss) Before Contributions, Special Items, Extraordinary Items and Transfers	291,507.14	108,648.85	(17,887.75)	(36,632.99)	345,635.25
391.07 Capital Contributions					0.00
391.1 Transfers In			25,000.00		25,000.00
511 Transfers Out					0.00
391.02 Long-Term Debt Issued					0.00
391.06/(514) Special Items					0.00
391.05/(515) Extraordinary Items					0.00
391.04 Insurance Claims					0.00
Change in Net Assets	291,507.14	108,648.85	7,112.25	(36,632.99)	370,635.25
Net Assets - Beginning	2,786,557.49	2,375,795.85	9,422.12	106,110.72	5,277,886.18
Adjustments:					0.00
					0.00
Adjusted Net Assets - Beginning	2,786,557.49	2,375,795.85	9,422.12	106,110.72	5,277,886.18
NET ASSETS - ENDING	3,078,064.63	2,484,444.70	16,534.37	69,477.73	5,648,521.43

CURRENT YEAR'S BUDGET

CITY OF MOBRIDGE
2015 Expenditure Budget

Account Descr	2015 Budget
FUND 000 PAYROLL FUND	
DEPT 40000 PAYROLL EXPENSE	
E 000-40000-41100 SALARY & FWT	$0.00
DEPT 40000 PAYROLL EXPENSE	$0.00
FUND 000 PAYROLL FUND	$0.00
FUND 101 GENERAL FUND	
DEPT 41110 CITY COUNCIL	
E 101-41110-41100 SALARY & FWT	$21,600.00
E 101-41110-41110 FICA	$1,340.00
E 101-41110-41120 MEDFICA	$315.00
E 101-41110-41400 WORKMEN S COMPENSATION	$78.00
E 101-41110-42100 LIABILITY INSURANCE	$600.00
E 101-41110-42200 PROFESSIONAL SERVICES	$500.00
E 101-41110-42300 PUBLISHING	$100.00
E 101-41110-42610 SUPPLIES	$350.00
E 101-41110-42700 TRAVEL AND CONFERENCE	$500.00
E 101-41110-42900 OTHER SERVICES	$1,000.00
E 101-41110-43100 LAND	$0.00
DEPT 41110 CITY COUNCIL	$26,383.00
DEPT 41150 CONTINGENCY	
E 101-41150-45900 LOSS ON DISPOSAL OF CAP ASSETS	$0.00
E 101-41150-45910 TRANSFER OUT	$20,000.00
DEPT 41150 CONTINGENCY	$20,000.00
DEPT 41210 MAYOR	
E 101-41210-41100 SALARY & FWT	$6,600.00
E 101-41210-41110 FICA	$410.00
E 101-41210-41120 MEDFICA	$100.00
E 101-41210-41400 WORKMEN S COMPENSATION	$22.00
E 101-41210-42100 LIABILITY INSURANCE	$650.00
E 101-41210-42610 SUPPLIES	$100.00
E 101-41210-42700 TRAVEL AND CONFERENCE	$100.00
E 101-41210-42900 OTHER SERVICES	$50.00
DEPT 41210 MAYOR	$8,032.00
DEPT 41220 CITY ADMINISTRATOR	
E 101-41220-41100 SALARY & FWT	$51,500.00
E 101-41220-41110 FICA	$3,001.00
E 101-41220-41120 MEDFICA	$702.00
E 101-41220-41300 RETIREMENT	$3,090.00
E 101-41220-41400 WORKMEN S COMPENSATION	$170.00
E 101-41220-41500 GROUP HEALTH INSURANCE	$18,000.00
E 101-41220-41600 UNEMPLOYMENT COMPENSATION	$80.00
E 101-41220-42100 LIABILITY INSURANCE	$500.00
E 101-41220-42200 PROFESSIONAL SERVICES	$1,000.00
E 101-41220-42300 PUBLISHING	$0.00
E 101-41220-42500 REPAIRS AND MAINTENANCE	$100.00
E 101-41220-42610 SUPPLIES	$600.00
E 101-41220-42700 TRAVEL AND CONFERENCE	$300.00
E 101-41220-42800 UTILITIES	$1,000.00
E 101-41220-42900 OTHER SERVICES	$500.00
E 101-41220-42950 COPIER LEASE	$660.00

Account Descr	2015 Budget
E 101-41220-43400 MACHINERY & EQUIPMENT	$0.00
E 101-41220-43410 COMPUTER SOFTWARE & HARDWARE	$1,000.00
E 101-41220-43500 FURNITURE	$3,000.00
E 101-41220-45700 DEPRECIATION	$0.00
DEPT 41220 CITY ADMINISTRATOR	$85,203.00
DEPT 41300 ELECTIONS	
E 101-41300-42300 PUBLISHING	$650.00
E 101-41300-42610 SUPPLIES	$300.00
E 101-41300-42900 OTHER SERVICES	$1,260.00
DEPT 41300 ELECTIONS	$2,210.00
DEPT 41420 FINANCE OFFICER	
E 101-41420-41100 SALARY & FWT	$72,500.00
E 101-41420-41110 FICA	$3,593.00
E 101-41420-41120 MEDFICA	$850.00
E 101-41420-41300 RETIREMENT	$3,700.00
E 101-41420-41400 WORKMEN S COMPENSATION	$200.00
E 101-41420-41500 GROUP HEALTH INSURANCE	$2,500.00
E 101-41420-41600 UNEMPLOYMENT COMPENSATION	$150.00
E 101-41420-42100 LIABILITY INSURANCE	$700.00
E 101-41420-42200 PROFESSIONAL SERVICES	$19,000.00
E 101-41420-42210 ATTORNEY SERVICES	$12,000.00
E 101-41420-42300 PUBLISHING	$5,000.00
E 101-41420-42500 REPAIRS AND MAINTENANCE	$0.00
E 101-41420-42610 SUPPLIES	$3,500.00
E 101-41420-42700 TRAVEL AND CONFERENCE	$1,000.00
E 101-41420-42800 UTILITIES	$2,000.00
E 101-41420-42900 OTHER SERVICES	$3,000.00
E 101-41420-42950 COPIER LEASE	$660.00
E 101-41420-42960 CREDIT CARD FEES	$0.00
E 101-41420-43400 MACHINERY & EQUIPMENT	$0.00
E 101-41420-43410 COMPUTER SOFTWARE & HARDWARE	$3,000.00
DEPT 41420 FINANCE OFFICER	$133,353.00
DEPT 41911 ADVERTISING	
E 101-41911-42900 OTHER SERVICES	$32,000.00
E 101-41911-42904 MOBR RODEO ASSOCIATION	$10,000.00
DEPT 41911 ADVERTISING	$42,000.00
DEPT 41920 GENERAL GOVERNMENT BUILDINGS	
E 101-41920-41100 SALARY & FWT	$0.00
E 101-41920-41110 FICA	$0.00
E 101-41920-41120 MEDFICA	$0.00
E 101-41920-41300 RETIREMENT	$0.00
E 101-41920-41400 WORKMEN S COMPENSATION	$0.00
E 101-41920-41600 UNEMPLOYMENT COMPENSATION	$0.00
E 101-41920-42100 LIABILITY INSURANCE	$1,000.00
E 101-41920-42200 PROFESSIONAL SERVICES	$10,000.00
E 101-41920-42500 REPAIRS AND MAINTENANCE	$4,000.00
E 101-41920-42510 SNOW REMOVAL	$2,000.00
E 101-41920-42610 SUPPLIES	$2,500.00
E 101-41920-42630 CANDY/POP	$0.00
E 101-41920-42800 UTILITIES	$4,000.00
E 101-41920-42900 OTHER SERVICES	$500.00
E 101-41920-43100 LAND	$0.00
E 101-41920-43400 MACHINERY & EQUIPMENT	$0.00

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E 101-41920-43410 COMPUTER SOFTWARE & HARDWARE	$0.00
DEPT 41920 GENERAL GOVERNMENT BUILDINGS	$24,000.00
DEPT 41980 OLD CITY HALL	
E 101-41980-42200 PROFESSIONAL SERVICES	$200.00
E 101-41980-42500 REPAIRS AND MAINTENANCE	$1,000.00
E 101-41980-42505 BUILDINGS MAINTENANCE	$250.00
E 101-41980-42610 SUPPLIES	$350.00
E 101-41980-42800 UTILITIES	$6,000.00
DEPT 41980 OLD CITY HALL	$7,800.00
DEPT 41990 OLD NATIONAL GUARD ARMORY	
E 101-41990-42100 LIABILITY INSURANCE	$0.00
E 101-41990-42200 PROFESSIONAL SERVICES	$0.00
E 101-41990-42500 REPAIRS AND MAINTENANCE	$0.00
E 101-41990-42610 SUPPLIES	$0.00
E 101-41990-42800 UTILITIES	$0.00
DEPT 41990 OLD NATIONAL GUARD ARMORY	$0.00
DEPT 42100 POLICE	
E 101-42100-41100 SALARY & FWT	$615,510.00
E 101-42100-41110 FICA	$32,510.00
E 101-42100-41120 MEDFICA	$7,610.00
E 101-42100-41300 RETIREMENT	$42,550.00
E 101-42100-41400 WORKMEN S COMPENSATION	$8,800.00
E 101-42100-41500 GROUP HEALTH INSURANCE	$109,000.00
E 101-42100-41600 UNEMPLOYMENT COMPENSATION	$850.00
E 101-42100-42100 LIABILITY INSURANCE	$7,000.00
E 101-42100-42200 PROFESSIONAL SERVICES	$5,000.00
E 101-42100-42220 TELETYPE SERVICE	$2,500.00
E 101-42100-42225 SOFTWARE MAINTENANCE AGREEME	$2,800.00
E 101-42100-42300 PUBLISHING	$1,000.00
E 101-42100-42500 REPAIRS AND MAINTENANCE	$600.00
E 101-42100-42502 VEHICLE MAINTENANCE	$5,000.00
E 101-42100-42505 BUILDINGS MAINTENANCE	$1,500.00
E 101-42100-42506 RADIO MAINTENANCE	$1,500.00
E 101-42100-42610 SUPPLIES	$5,500.00
E 101-42100-42641 GASOLINE	$18,000.00
E 101-42100-42642 OIL, GREASE	$0.00
E 101-42100-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 101-42100-42647 TIRES	$1,600.00
E 101-42100-42670 TRAINING SUPPLIES	$1,000.00
E 101-42100-42680 UNIFORMS/EQUIPMENT	$5,000.00
E 101-42100-42682 CRIME PREVENT/COMM POL SUPPLY	$250.00
E 101-42100-42683 DARE/COMM POLICING SELF FUNDED	$1,000.00
E 101-42100-42684 CISD TEAM SELF FUNDED	$200.00
E 101-42100-42685 BIKE PATROL UNIT	$0.00
E 101-42100-42690 K-9 DRUG DOG SELF FUNDED	$0.00
E 101-42100-42691 DRUG ENFORCEMENT GRANT	$0.00
E 101-42100-42700 TRAVEL AND CONFERENCE	$1,000.00
E 101-42100-42800 UTILITIES	$7,500.00
E 101-42100-42801 TELEPHONE	$8,600.00
E 101-42100-42900 OTHER SERVICES	$550.00
E 101-42100-42902 MEMBERSHIP DUES	$550.00
E 101-42100-42950 COPIER LEASE	$660.00
E 101-42100-43200 BUILDINGS	$0.00
E 101-42100-43300 IMPROVE OTHER THAN BUILDINGS	$0.00

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E 101-42100-43400 MACHINERY & EQUIPMENT	$4,435.00
E 101-42100-43405 VEHICLE REPLACEMENT	$0.00
E 101-42100-43410 COMPUTER SOFTWARE & HARDWARE	$2,000.00
E 101-42100-43500 FURNITURE	$0.00
DEPT 42100 POLICE	$901,575.00
DEPT 42200 FIRE	
E 101-42200-41100 SALARY & FWT	$6,000.00
E 101-42200-41110 FICA	$372.00
E 101-42200-41120 MEDFICA	$87.00
E 101-42200-41400 WORKMEN S COMPENSATION	$600.00
E 101-42200-41500 GROUP HEALTH INSURANCE	$0.00
E 101-42200-41600 UNEMPLOYMENT COMPENSATION	$0.00
E 101-42200-42100 LIABILITY INSURANCE	$6,500.00
E 101-42200-42200 PROFESSIONAL SERVICES	$100.00
E 101-42200-42300 PUBLISHING	$125.00
E 101-42200-42400 FIRE TRUCK RENTAL	$0.00
E 101-42200-42401 EQUIPMENT RENTAL	$0.00
E 101-42200-42500 REPAIRS AND MAINTENANCE	$4,000.00
E 101-42200-42502 VEHICLE MAINTENANCE	$1,500.00
E 101-42200-42503 TRUCK MAINTENANCE	$1,700.00
E 101-42200-42504 EQUIPMENT MAINTENANCE	$500.00
E 101-42200-42505 BUILDINGS MAINTENANCE	$3,000.00
E 101-42200-42506 RADIO MAINTENANCE	$500.00
E 101-42200-42610 SUPPLIES	$4,500.00
E 101-42200-42618 POSTAGE	$50.00
E 101-42200-42619 OFFICE SUPPLIES	$50.00
E 101-42200-42620 FIRST RESPONDERS	$2,500.00
E 101-42200-42641 GASOLINE	$1,000.00
E 101-42200-42642 OIL, GREASE	$0.00
E 101-42200-42643 COMMUNICATION & RADIO	$0.00
E 101-42200-42645 SUP. FOR INHOUSE REPAIRS	$1,000.00
E 101-42200-42646 DIESEL FUEL	$750.00
E 101-42200-42647 TIRES	$0.00
E 101-42200-42680 UNIFORMS/EQUIPMENT	$9,000.00
E 101-42200-42700 TRAVEL AND CONFERENCE	$500.00
E 101-42200-42706 SAFETY TRAINING	$1,000.00
E 101-42200-42800 UTILITIES	$5,000.00
E 101-42200-42801 TELEPHONE	$850.00
E 101-42200-42803 LP GAS/FUEL OIL	$50.00
E 101-42200-42900 OTHER SERVICES	$0.00
E 101-42200-42902 MEMBERSHIP DUES	$550.00
E 101-42200-42920 FIRES	$1,500.00
E 101-42200-42921 MEETINGS	$1,500.00
E 101-42200-43200 BUILDINGS	$0.00
E 101-42200-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 101-42200-43400 MACHINERY & EQUIPMENT	$0.00
E 101-42200-43410 COMPUTER SOFTWARE & HARDWARE	$0.00
E 101-42200-43900 OTHER CAPITAL	$0.00
E 101-42200-47000 DEBT SERVICE	$0.00
DEPT 42200 FIRE	$54,784.00
DEPT 42900 OTHER PROTECTION	
E 101-42900-42100 LIABILITY INSURANCE	$0.00
E 101-42900-42101 PROPERTY INSURANCE	$0.00
E 101-42900-42200 PROFESSIONAL SERVICES	$0.00

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E 101-42900-42300 PUBLISHING	$0.00
E 101-42900-42500 REPAIRS AND MAINTENANCE	$300.00
E 101-42900-42610 SUPPLIES	$0.00
E 101-42900-42700 TRAVEL AND CONFERENCE	$0.00
E 101-42900-42800 UTILITIES	$300.00
E 101-42900-45700 DEPRECIATION	$0.00
DEPT 42900 OTHER PROTECTION	$600.00
DEPT 43100 HIGHWAYS AND STREETS	
E 101-43100-41100 SALARY & FWT	$124,000.00
E 101-43100-41110 FICA	$7,300.00
E 101-43100-41120 MEDFICA	$1,700.00
E 101-43100-41300 RETIREMENT	$7,200.00
E 101-43100-41400 WORKMEN S COMPENSATION	$7,000.00
E 101-43100-41500 GROUP HEALTH INSURANCE	$22,000.00
E 101-43100-41600 UNEMPLOYMENT COMPENSATION	$205.00
E 101-43100-42100 LIABILITY INSURANCE	$5,500.00
E 101-43100-42200 PROFESSIONAL SERVICES	$11,000.00
E 101-43100-42300 PUBLISHING	$100.00
E 101-43100-42500 REPAIRS AND MAINTENANCE	$15,000.00
E 101-43100-42504 EQUIPMENT MAINTENANCE	$0.00
E 101-43100-42510 SNOW REMOVAL	$10,000.00
E 101-43100-42520 STREET RESURFACE	$130,000.00
E 101-43100-42530 SPRAYING	$0.00
E 101-43100-42599 STORM SEWER	$0.00
E 101-43100-42610 SUPPLIES	$25,000.00
E 101-43100-42611 GRAVEL & ROAD OIL	$15,000.00
E 101-43100-42635 HOT & COLD MIX	$30,000.00
E 101-43100-42641 GASOLINE	$5,000.00
E 101-43100-42642 OIL, GREASE	$2,000.00
E 101-43100-42646 DIESEL FUEL	$15,000.00
E 101-43100-42647 TIRES	$1,500.00
E 101-43100-42700 TRAVEL AND CONFERENCE	$0.00
E 101-43100-42800 UTILITIES	$5,500.00
E 101-43100-42803 LP GAS/FUEL OIL	$6,500.00
E 101-43100-42810 STREET LIGHTS	$60,000.00
E 101-43100-42900 OTHER SERVICES	$0.00
E 101-43100-43200 BUILDINGS	$0.00
E 101-43100-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 101-43100-43400 MACHINERY & EQUIPMENT	$0.00
E 101-43100-43410 COMPUTER SOFTWARE & HARDWARE	$0.00
E 101-43100-45700 DEPRECIATION	$0.00
DEPT 43100 HIGHWAYS AND STREETS	$506,505.00
DEPT 43110 ENTRANCE SIGNS	
E 101-43110-42610 SUPPLIES	$100.00
E 101-43110-42900 OTHER SERVICES	$0.00
E 101-43110-45700 DEPRECIATION	$0.00
DEPT 43110 ENTRANCE SIGNS	$100.00
DEPT 43230 SOLID WASTE COLLECTION	
E 101-43230-42200 PROFESSIONAL SERVICES	$225,000.00
E 101-43230-42610 SUPPLIES	$500.00
E 101-43230-42930 REFUNDS	$100.00
DEPT 43230 SOLID WASTE COLLECTION	$225,600.00
DEPT 43240 RUBBLE SITE	

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E 101-43240-42200 PROFESSIONAL SERVICES	$0.00
E 101-43240-42300 PUBLISHING	$0.00
E 101-43240-42500 REPAIRS AND MAINTENANCE	$0.00
E 101-43240-42610 SUPPLIES	$0.00
DEPT 43240 RUBBLE SITE	$0.00
DEPT 43500 AIRPORT	
E 101-43500-41100 SALARY & FWT	$0.00
E 101-43500-41110 FICA	$0.00
E 101-43500-41120 MEDFICA	$0.00
E 101-43500-41200 OASI	$0.00
E 101-43500-41300 RETIREMENT	$0.00
E 101-43500-41400 WORKMEN S COMPENSATION	$0.00
E 101-43500-41500 GROUP HEALTH INSURANCE	$0.00
E 101-43500-41600 UNEMPLOYMENT COMPENSATION	$0.00
E 101-43500-42100 LIABILITY INSURANCE	$0.00
E 101-43500-42200 PROFESSIONAL SERVICES	$0.00
E 101-43500-42300 PUBLISHING	$0.00
E 101-43500-42500 REPAIRS AND MAINTENANCE	$0.00
E 101-43500-42610 SUPPLIES	$0.00
E 101-43500-42641 GASOLINE	$0.00
E 101-43500-42642 OIL, GREASE	$0.00
E 101-43500-42646 DIESEL FUEL	$0.00
E 101-43500-42700 TRAVEL AND CONFERENCE	$0.00
E 101-43500-42800 UTILITIES	$0.00
E 101-43500-42803 LP GAS/FUEL OIL	$0.00
E 101-43500-42900 OTHER SERVICES	$0.00
E 101-43500-43100 LAND	$0.00
E 101-43500-43200 BUILDINGS	$0.00
E 101-43500-43400 MACHINERY & EQUIPMENT	$0.00
E 101-43500-43500 FURNITURE	$0.00
E 101-43500-45700 DEPRECIATION	$0.00
DEPT 43500 AIRPORT	$0.00
DEPT 44110 REGULATION AND INSPECTION	
E 101-44110-42200 PROFESSIONAL SERVICES	$15,000.00
E 101-44110-42210 ATTORNEY SERVICES	$5,000.00
E 101-44110-42300 PUBLISHING	$250.00
E 101-44110-42610 SUPPLIES	$500.00
E 101-44110-42616 MOWING CONTRACT	$0.00
E 101-44110-42900 OTHER SERVICES	$3,000.00
E 101-44110-42901 CITY WIDE CLEANUP	$0.00
E 101-44110-42903 BOWLING ALLEY CLEANUP	$0.00
E 101-44110-42930 REFUNDS	$0.00
E 101-44110-43100 LAND	$25,000.00
DEPT 44110 REGULATION AND INSPECTION	$48,750.00
DEPT 44130 WEST NILE	
E 101-44130-42200 PROFESSIONAL SERVICES	$0.00
E 101-44130-42500 REPAIRS AND MAINTENANCE	$400.00
E 101-44130-42610 SUPPLIES	$6,000.00
E 101-44130-42900 OTHER SERVICES	$1,000.00
DEPT 44130 WEST NILE	$7,400.00
DEPT 44300 MENTAL HEALTH CENTERS	
E 101-44300-42200 PROFESSIONAL SERVICES	$0.00
DEPT 44300 MENTAL HEALTH CENTERS	$0.00

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DEPT 44701 SR. CITIZENS TRANSPORTATION	
E 101-44701-42900 OTHER SERVICES	$2,000.00
DEPT 44701 SR. CITIZENS TRANSPORTATION	$2,000.00
DEPT 44702 AREA FOUR SR NUTRITION PROJECT	
E 101-44702-42900 OTHER SERVICES	$0.00
DEPT 44702 AREA FOUR SR NUTRITION PROJECT	$0.00
DEPT 45100 POOL	
E 101-45100-41100 SALARY & FWT	$0.00
E 101-45100-41110 FICA	$0.00
E 101-45100-41120 MEDFICA	$0.00
E 101-45100-41400 WORKMEN S COMPENSATION	$0.00
E 101-45100-41600 UNEMPLOYMENT COMPENSATION	$0.00
E 101-45100-42100 LIABILITY INSURANCE	$0.00
E 101-45100-42200 PROFESSIONAL SERVICES	$0.00
E 101-45100-42300 PUBLISHING	$0.00
E 101-45100-42401 EQUIPMENT RENTAL	$0.00
E 101-45100-42500 REPAIRS AND MAINTENANCE	$0.00
E 101-45100-42508 SWIMMING POOL MAINTENANCE	$0.00
E 101-45100-42610 SUPPLIES	$0.00
E 101-45100-42613 CHEMICALS	$0.00
E 101-45100-42614 WATER SAMPLES	$0.00
E 101-45100-42618 POSTAGE	$0.00
E 101-45100-42630 CANDY/POP	$0.00
E 101-45100-42640 JANITORIAL SUPPLIES	$0.00
E 101-45100-42641 GASOLINE	$0.00
E 101-45100-42644 YARD WORK	$0.00
E 101-45100-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 101-45100-42680 UNIFORMS/EQUIPMENT	$0.00
E 101-45100-42700 TRAVEL AND CONFERENCE	$0.00
E 101-45100-42705 TRAINING	$0.00
E 101-45100-42800 UTILITIES	$0.00
E 101-45100-42801 TELEPHONE	$0.00
E 101-45100-42802 ELECTRICITY	$0.00
E 101-45100-42803 LP GAS/FUEL OIL	$0.00
E 101-45100-42900 OTHER SERVICES	$0.00
E 101-45100-42930 REFUNDS	$0.00
E 101-45100-43200 BUILDINGS	$0.00
E 101-45100-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 101-45100-43400 MACHINERY & EQUIPMENT	$0.00
E 101-45100-43500 FURNITURE	$0.00
E 101-45100-44000 DEBT SERVICE	$0.00
E 101-45100-45700 DEPRECIATION	$0.00
E 101-45100-45910 TRANSFER OUT	$0.00
DEPT 45100 POOL	$0.00
DEPT 45200 PARKS	
E 101-45200-41400 WORKMEN S COMPENSATION	$0.00
E 101-45200-42100 LIABILITY INSURANCE	$1,800.00
E 101-45200-42300 PUBLISHING	$0.00
E 101-45200-42500 REPAIRS AND MAINTENANCE	$3,000.00
E 101-45200-42530 SPRAYING	$5,000.00
E 101-45200-42540 PLAYPARK CARE	$2,500.00
E 101-45200-42610 SUPPLIES	$6,000.00
E 101-45200-42612 TREES	$5,000.00
E 101-45200-42616 MOWING CONTRACT	$40,000.00

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E 101-45200-42617 CONTRACT LABOR	$55,000.00
E 101-45200-42650 GARDEN CLUB	$500.00
E 101-45200-42800 UTILITIES	$5,300.00
E 101-45200-42900 OTHER SERVICES	$0.00
E 101-45200-43300 IMPROVE OTHER THAN BUILDINGS	$4,500.00
E 101-45200-49002 PLAY PARKS	$1,500.00
E 101-45200-49003 TENNIS/BALL FIELDS	$1,500.00
E 101-45200-49004 MYO	$15,000.00
E 101-45200-49006 FRISBEE PARK	$500.00
E 101-45200-49007 S SOFT BALL PARK	$0.00
DEPT 45200 PARKS	$147,100.00
DEPT 45210 TRAILS	
E 101-45210-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 45210 TRAILS	$0.00
DEPT 45500 LIBRARIES	
E 101-45500-41100 SALARY & FWT	$75,776.00
E 101-45500-41110 FICA	$4,500.00
E 101-45500-41120 MEDFICA	$1,055.00
E 101-45500-41300 RETIREMENT	$3,175.00
E 101-45500-41400 WORKMEN S COMPENSATION	$255.00
E 101-45500-41500 GROUP HEALTH INSURANCE	$7,203.00
E 101-45500-41600 UNEMPLOYMENT COMPENSATION	$300.00
E 101-45500-42100 LIABILITY INSURANCE	$3,800.00
E 101-45500-42200 PROFESSIONAL SERVICES	$1,000.00
E 101-45500-42300 PUBLISHING	$100.00
E 101-45500-42500 REPAIRS AND MAINTENANCE	$2,000.00
E 101-45500-42610 SUPPLIES	$5,000.00
E 101-45500-42700 TRAVEL AND CONFERENCE	$900.00
E 101-45500-42800 UTILITIES	$8,000.00
E 101-45500-42900 OTHER SERVICES	$1,700.00
E 101-45500-43200 BUILDINGS	$8,000.00
E 101-45500-43410 COMPUTER SOFTWARE & HARDWARE	$6,000.00
E 101-45500-43420 BOOKS	$8,200.00
E 101-45500-43500 FURNITURE	$1,500.00
E 101-45500-43900 OTHER CAPITAL	$0.00
DEPT 45500 LIBRARIES	$138,464.00
DEPT 45600 AUDITORIUM	
E 101-45600-41100 SALARY & FWT	$30,295.00
E 101-45600-41110 FICA	$1,770.00
E 101-45600-41120 MEDFICA	$415.00
E 101-45600-41300 RETIREMENT	$1,820.00
E 101-45600-41400 WORKMEN S COMPENSATION	$1,245.00
E 101-45600-41500 GROUP HEALTH INSURANCE	$7,203.00
E 101-45600-41600 UNEMPLOYMENT COMPENSATION	$50.00
E 101-45600-42100 LIABILITY INSURANCE	$6,500.00
E 101-45600-42200 PROFESSIONAL SERVICES	$9,000.00
E 101-45600-42300 PUBLISHING	$0.00
E 101-45600-42500 REPAIRS AND MAINTENANCE	$3,500.00
E 101-45600-42510 SNOW REMOVAL	$1,000.00
E 101-45600-42610 SUPPLIES	$8,000.00
E 101-45600-42800 UTILITIES	$28,000.00
E 101-45600-42804 AIR COND. UTILITIES	$0.00
E 101-45600-42900 OTHER SERVICES	$300.00
E 101-45600-42930 REFUNDS	$0.00

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E 101-45600-43100 LAND	$0.00
E 101-45600-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 101-45600-43400 MACHINERY & EQUIPMENT	$5,000.00
E 101-45600-43410 COMPUTER SOFTWARE & HARDWARE	$0.00
E 101-45600-43500 FURNITURE	$0.00
E 101-45600-45700 DEPRECIATION	$0.00
DEPT 45600 AUDITORIUM	$104,098.00
DEPT 45601 AUDITORIUM EVENTS	
E 101-45601-42200 PROFESSIONAL SERVICES	$0.00
E 101-45601-42300 PUBLISHING	$0.00
E 101-45601-42617 CONTRACT LABOR	$0.00
DEPT 45601 AUDITORIUM EVENTS	$0.00
DEPT 45800 MUSEUM	
E 101-45800-42900 OTHER SERVICES	$6,000.00
DEPT 45800 MUSEUM	$6,000.00
DEPT 46320 PUBLIC HOUSING PROJECTS	
E 101-46320-42505 BUILDINGS MAINTENANCE	$0.00
DEPT 46320 PUBLIC HOUSING PROJECTS	$0.00
DEPT 46500 ECONOMIC DEVELOP AND ASSISTANC	
E 101-46500-42200 PROFESSIONAL SERVICES	$0.00
E 101-46500-42610 SUPPLIES	$0.00
E 101-46500-42900 OTHER SERVICES	$16,250.00
E 101-46500-45700 DEPRECIATION	$0.00
DEPT 46500 ECONOMIC DEVELOP AND ASSISTANC	$16,250.00
DEPT 46510 INDUSTRIAL DEVELOPMENT	
E 101-46510-42610 SUPPLIES	$0.00
E 101-46510-42900 OTHER SERVICES	$0.00
DEPT 46510 INDUSTRIAL DEVELOPMENT	$0.00
DEPT 46520 PLANNING AND ZONING	
E 101-46520-41100 SALARY & FWT	$6,000.00
E 101-46520-41110 FICA	$372.00
E 101-46520-41120 MEDFICA	$90.00
E 101-46520-41400 WORKMEN S COMPENSATION	$150.00
E 101-46520-42200 PROFESSIONAL SERVICES	$150.00
E 101-46520-42300 PUBLISHING	$100.00
E 101-46520-42610 SUPPLIES	$500.00
E 101-46520-42700 TRAVEL AND CONFERENCE	$100.00
E 101-46520-42801 TELEPHONE	$600.00
E 101-46520-42900 OTHER SERVICES	$1,000.00
E 101-46520-42930 REFUNDS	$200.00
DEPT 46520 PLANNING AND ZONING	$9,262.00
DEPT 46530 RIVERFRONT ECONOMIC DEV COMM.	
E 101-46530-42200 PROFESSIONAL SERVICES	$0.00
DEPT 46530 RIVERFRONT ECONOMIC DEV COMM.	$0.00
DEPT 47154 NATIONAL GUARD ARMORY	
E 101-47154-44100 PRINCIPAL	$7,970.00
E 101-47154-44200 INTEREST	$27,131.00
DEPT 47154 NATIONAL GUARD ARMORY	$35,101.00
DEPT 47155 FIRE RESCUE TRUCK DEBT SERVICE	
E 101-47155-47152 DEBT SERVICE	$9,904.00
E 101-47155-47153 INTEREST EXP FISCHGS	$1,850.00

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DEPT 47155 FIRE RESCUE TRUCK DEBT SERVICE	$11,754.00
DEPT 47156 RR CROSSING DEBT SERVICE	
E 101-47156-47152 DEBT SERVICE	$100,000.00
E 101-47156-47153 INTEREST EXP FISCHGS	$0.00
DEPT 47156 RR CROSSING DEBT SERVICE	$100,000.00
DEPT 47157 AIRPORT FUEL TRUCK	
E 101-47157-47152 DEBT SERVICE	$0.00
E 101-47157-47153 INTEREST EXP FISCHGS	$0.00
DEPT 47157 AIRPORT FUEL TRUCK	$0.00
DEPT 49900 LIQUOR	
E 101-49900-42300 PUBLISHING	$225.00
DEPT 49900 LIQUOR	$225.00
DEPT 51100 OPERATING TRANSFERS OUT	
E 101-51100-42900 OTHER SERVICES	$0.00
E 101-51100-45910 TRANSFER OUT	$364,300.00
DEPT 51100 OPERATING TRANSFERS OUT	$364,300.00
FUND 101 GENERAL FUND	$3,028,849.00
FUND 211 LIQ, LODG, DINE SALES TAX FUND	
DEPT 46500 ECONOMIC DEVELOP AND ASSISTANC	
E 211-46500-42200 PROFESSIONAL SERVICES	$110,000.00
E 211-46500-42900 OTHER SERVICES	$0.00
DEPT 46500 ECONOMIC DEVELOP AND ASSISTANC	$110,000.00
FUND 211 LIQ, LODG, DINE SALES TAX FUND	$110,000.00
FUND 221 SPECIAL PARK GIFT	
DEPT 45200 PARKS	
E 221-45200-42610 SUPPLIES	$0.00
E 221-45200-43200 BUILDINGS	$0.00
E 221-45200-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 45200 PARKS	$0.00
FUND 221 SPECIAL PARK GIFT	$0.00
FUND 224 STORM SEWER FUND	
DEPT 42599 STORM SEWER	
E 224-42599-42200 PROFESSIONAL SERVICES	$0.00
E 224-42599-42500 REPAIRS AND MAINTENANCE	$0.00
E 224-42599-42610 SUPPLIES	$0.00
E 224-42599-42618 POSTAGE	$0.00
E 224-42599-42930 REFUNDS	$0.00
DEPT 42599 STORM SEWER	$0.00
FUND 224 STORM SEWER FUND	$0.00
FUND 260 PSAP	
DEPT 42150 E911	
E 260-42150-42100 LIABILITY INSURANCE	$5,000.00
E 260-42150-42200 PROFESSIONAL SERVICES	$25,000.00
E 260-42150-42500 REPAIRS AND MAINTENANCE	$5,000.00
E 260-42150-42506 RADIO MAINTENANCE	$1,000.00
E 260-42150-42610 SUPPLIES	$1,000.00
E 260-42150-42700 TRAVEL AND CONFERENCE	$0.00
E 260-42150-42800 UTILITIES	$60,000.00

Account Descr	2015 Budget
E 260-42150-43410 COMPUTER SOFTWARE & HARDWARE	$6,000.00
E 260-42150-45910 TRANSFER OUT	$206,676.00
DEPT 42150 E911	$309,676.00
FUND 260 PSAP	$309,676.00
FUND 281 24/7 SOBRIETY FUND	
DEPT 42100 POLICE	
E 281-42100-41100 SALARY & FWT	$17,000.00
E 281-42100-41110 FICA	$1,030.00
E 281-42100-41120 MEDFICA	$250.00
E 281-42100-41300 RETIREMENT	$0.00
E 281-42100-41400 WORKMEN S COMPENSATION	$55.00
E 281-42100-41500 GROUP HEALTH INSURANCE	$0.00
E 281-42100-41600 UNEMPLOYMENT COMPENSATION	$100.00
E 281-42100-42230 PARTICIPATION FEES TO AG	$0.00
E 281-42100-42610 SUPPLIES	$0.00
E 281-42100-42930 REFUNDS	$0.00
DEPT 42100 POLICE	$18,435.00
FUND 281 24/7 SOBRIETY FUND	$18,435.00
FUND 302 STORM SEWER DEBT SERVICE	
DEPT 47153 STORM SEWER	
E 302-47153-44100 PRINCIPAL	$69,481.00
E 302-47153-44200 INTEREST	$20,419.00
E 302-47153-45700 DEPRECIATION	$0.00
DEPT 47153 STORM SEWER	$89,900.00
FUND 302 STORM SEWER DEBT SERVICE	$89,900.00
FUND 303 POOL DEBT SERVICE	
DEPT 45100 POOL	
E 303-45100-47152 DEBT SERVICE	$75,000.00
E 303-45100-47153 INTEREST EXP FISCHGS	$131,793.00
DEPT 45100 POOL	$206,793.00
FUND 303 POOL DEBT SERVICE	$206,793.00
FUND 508 RR XING MAIN STREET EXTENSION	
DEPT 43100 HIGHWAYS AND STREETS	
E 508-43100-42100 LIABILITY INSURANCE	$0.00
E 508-43100-42200 PROFESSIONAL SERVICES	$0.00
E 508-43100-42300 PUBLISHING	$0.00
E 508-43100-42900 OTHER SERVICES	$0.00
E 508-43100-43100 LAND	$0.00
E 508-43100-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 508-43100-47152 DEBT SERVICE	$0.00
DEPT 43100 HIGHWAYS AND STREETS	$0.00
DEPT 43151 STORM SEWER PROJECT	
E 508-43151-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 43151 STORM SEWER PROJECT	$0.00
FUND 508 RR XING MAIN STREET EXTENSION	$0.00
FUND 511 AUDITORIUM RESTORATION	
DEPT 45600 AUDITORIUM	
E 511-45600-42200 PROFESSIONAL SERVICES	$0.00
E 511-45600-42300 PUBLISHING	$0.00

Account Descr	2015 Budget
E 511-45600-42500 REPAIRS AND MAINTENANCE	$0.00
E 511-45600-42610 SUPPLIES	$0.00
E 511-45600-43200 BUILDINGS	$0.00
E 511-45600-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 511-45600-45910 TRANSFER OUT	$0.00
DEPT 45600 AUDITORIUM	$0.00
FUND 511 AUDITORIUM RESTORATION	$0.00
FUND 512 MURAL RESTORATION	
DEPT 45600 AUDITORIUM	
E 512-45600-42200 PROFESSIONAL SERVICES	$0.00
E 512-45600-42300 PUBLISHING	$0.00
E 512-45600-42610 SUPPLIES	$0.00
E 512-45600-42902 MEMBERSHIP DUES	$0.00
E 512-45600-43320 HEATINGVENTAIRCOND	$0.00
E 512-45600-43330 ART RESTORATION	$0.00
E 512-45600-45910 TRANSFER OUT	$0.00
DEPT 45600 AUDITORIUM	$0.00
FUND 512 MURAL RESTORATION	$0.00
FUND 514 NATIONAL GUARD ARMORY	
DEPT 41900 OTHER GENERAL GOVERNMENT	
E 514-41900-42200 PROFESSIONAL SERVICES	$0.00
E 514-41900-42300 PUBLISHING	$0.00
E 514-41900-42610 SUPPLIES	$0.00
E 514-41900-42900 OTHER SERVICES	$0.00
E 514-41900-47152 DEBT SERVICE	$0.00
E 514-41900-47153 INTEREST EXP FISCHGS	$0.00
DEPT 41900 OTHER GENERAL GOVERNMENT	$0.00
DEPT 43370 WATER EXTENSION	
E 514-43370-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 43370 WATER EXTENSION	$0.00
FUND 514 NATIONAL GUARD ARMORY	$0.00
FUND 516 SOUTH MAIN ROUNDABOUT	
DEPT 43100 HIGHWAYS AND STREETS	
E 516-43100-42200 PROFESSIONAL SERVICES	$0.00
E 516-43100-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 43100 HIGHWAYS AND STREETS	$0.00
FUND 516 SOUTH MAIN ROUNDABOUT	$0.00
FUND 517 STORM SEWER PROJECT 2ND AVE W	
DEPT 43151 STORM SEWER PROJECT	
E 517-43151-42200 PROFESSIONAL SERVICES	$0.00
E 517-43151-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
DEPT 43151 STORM SEWER PROJECT	$0.00
FUND 517 STORM SEWER PROJECT 2ND AVE W	$0.00
FUND 518 LIBRARY EXPANSION	
DEPT 45500 LIBRARIES	
E 518-45500-42200 PROFESSIONAL SERVICES	$0.00
E 518-45500-42610 SUPPLIES	$0.00
E 518-45500-43200 BUILDINGS	$0.00

Account Descr	2015 Budget
DEPT 45500 LIBRARIES	$0.00
FUND 518 LIBRARY EXPANSION	$0.00
FUND 602 WATER FUND	
DEPT 43300 WATER	
E 602-43300-47152 DEBT SERVICE	$0.00
E 602-43300-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43300 WATER	$0.00
DEPT 43310 SOURCE OF SUPPLY	
E 602-43310-41100 SALARY & FWT	$0.00
E 602-43310-41110 FICA	$0.00
E 602-43310-41120 MEDFICA	$0.00
E 602-43310-41300 RETIREMENT	$0.00
E 602-43310-41400 WORKMEN S COMPENSATION	$0.00
E 602-43310-41500 GROUP HEALTH INSURANCE	$0.00
E 602-43310-41600 UNEMPLOYMENT COMPENSATION	$0.00
E 602-43310-42100 LIABILITY INSURANCE	$6,000.00
E 602-43310-42200 PROFESSIONAL SERVICES	$0.00
E 602-43310-42300 PUBLISHING	$0.00
E 602-43310-42500 REPAIRS AND MAINTENANCE	$3,500.00
E 602-43310-42504 EQUIPMENT MAINTENANCE	$1,000.00
E 602-43310-42610 SUPPLIES	$500.00
E 602-43310-42618 POSTAGE	$0.00
E 602-43310-42645 SUP. FOR INHOUSE REPAIRS	$500.00
E 602-43310-42800 UTILITIES	$0.00
E 602-43310-42803 LP GAS/FUEL OIL	$1,600.00
E 602-43310-43200 BUILDINGS	$0.00
E 602-43310-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 602-43310-43400 MACHINERY & EQUIPMENT	$0.00
E 602-43310-43900 OTHER CAPITAL	$0.00
E 602-43310-45700 DEPRECIATION	$0.00
E 602-43310-47152 DEBT SERVICE	$9,524.00
E 602-43310-47153 INTEREST EXP FISCHGS	$18,953.00
DEPT 43310 SOURCE OF SUPPLY	$41,577.00
DEPT 43311 WATER INTAKE PROJECT	
E 602-43311-42200 PROFESSIONAL SERVICES	$0.00
E 602-43311-42300 PUBLISHING	$0.00
E 602-43311-42610 SUPPLIES	$0.00
E 602-43311-42615 WATER METERS	$0.00
E 602-43311-42900 OTHER SERVICES	$0.00
E 602-43311-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 602-43311-47152 DEBT SERVICE	$0.00
E 602-43311-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43311 WATER INTAKE PROJECT	$0.00
DEPT 43320 POWER AND PUMPING	
E 602-43320-41100 SALARY & FWT	$77,675.00
E 602-43320-41110 FICA	$4,025.00
E 602-43320-41120 MEDFICA	$941.00
E 602-43320-41300 RETIREMENT	$4,660.00
E 602-43320-41400 WORKMEN S COMPENSATION	$2,361.00
E 602-43320-41500 GROUP HEALTH INSURANCE	$16,651.00
E 602-43320-41600 UNEMPLOYMENT COMPENSATION	$150.00
E 602-43320-42100 LIABILITY INSURANCE	$1,600.00
E 602-43320-42101 PROPERTY INSURANCE	$0.00

Account Descr	2015 Budget
E 602-43320-42200 PROFESSIONAL SERVICES	$12,000.00
E 602-43320-42300 PUBLISHING	$0.00
E 602-43320-42401 EQUIPMENT RENTAL	$0.00
E 602-43320-42500 REPAIRS AND MAINTENANCE	$0.00
E 602-43320-42501 OFFICE EQUIPMENT MAINTENANCE	$0.00
E 602-43320-42502 VEHICLE MAINTENANCE	$0.00
E 602-43320-42504 EQUIPMENT MAINTENANCE	$0.00
E 602-43320-42505 BUILDINGS MAINTENANCE	$0.00
E 602-43320-42506 RADIO MAINTENANCE	$0.00
E 602-43320-42610 SUPPLIES	$0.00
E 602-43320-42613 CHEMICALS	$0.00
E 602-43320-42614 WATER SAMPLES	$0.00
E 602-43320-42618 POSTAGE	$0.00
E 602-43320-42619 OFFICE SUPPLIES	$0.00
E 602-43320-42640 JANITORIAL SUPPLIES	$0.00
E 602-43320-42641 GASOLINE	$500.00
E 602-43320-42642 OIL, GREASE	$200.00
E 602-43320-42643 COMMUNICATION & RADIO	$0.00
E 602-43320-42644 YARD WORK	$1,500.00
E 602-43320-42645 SUP. FOR INHOUSE REPAIRS	$1,000.00
E 602-43320-42646 DIESEL FUEL	$500.00
E 602-43320-42647 TIRES	$0.00
E 602-43320-42680 UNIFORMS/EQUIPMENT	$300.00
E 602-43320-42700 TRAVEL AND CONFERENCE	$350.00
E 602-43320-42706 SAFETY TRAINING	$300.00
E 602-43320-42800 UTILITIES	$0.00
E 602-43320-42801 TELEPHONE	$1,300.00
E 602-43320-42802 ELECTRICITY	$32,000.00
E 602-43320-42803 LP GAS/FUEL OIL	$15,000.00
E 602-43320-42900 OTHER SERVICES	$0.00
E 602-43320-42902 MEMBERSHIP DUES	$30.00
E 602-43320-43200 BUILDINGS	$0.00
E 602-43320-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 602-43320-43400 MACHINERY & EQUIPMENT	$0.00
E 602-43320-43410 COMPUTER SOFTWARE & HARDWARE	$1,000.00
E 602-43320-45700 DEPRECIATION	$0.00
E 602-43320-47152 DEBT SERVICE	$0.00
E 602-43320-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43320 POWER AND PUMPING	$174,043.00
DEPT 43330 PURIFICATION	
E 602-43330-42200 PROFESSIONAL SERVICES	$0.00
E 602-43330-42300 PUBLISHING	$0.00
E 602-43330-42500 REPAIRS AND MAINTENANCE	$3,000.00
E 602-43330-42610 SUPPLIES	$1,500.00
E 602-43330-42613 CHEMICALS	$93,000.00
E 602-43330-42618 POSTAGE	$0.00
E 602-43330-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 602-43330-42700 TRAVEL AND CONFERENCE	$0.00
E 602-43330-42803 LP GAS/FUEL OIL	$0.00
E 602-43330-43400 MACHINERY & EQUIPMENT	$0.00
E 602-43330-43410 COMPUTER SOFTWARE & HARDWARE	$0.00
E 602-43330-45700 DEPRECIATION	$0.00
DEPT 43330 PURIFICATION	$97,500.00
DEPT 43340 DISTRIBUTION	

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E 602-43340-41100 SALARY & FWT	$101,435.00
E 602-43340-41110 FICA	$5,925.00
E 602-43340-41120 MEDFICA	$1,390.00
E 602-43340-41300 RETIREMENT	$6,000.00
E 602-43340-41400 WORKMEN S COMPENSATION	$3,091.00
E 602-43340-41500 GROUP HEALTH INSURANCE	$14,137.00
E 602-43340-41600 UNEMPLOYMENT COMPENSATION	$200.00
E 602-43340-42100 LIABILITY INSURANCE	$5,200.00
E 602-43340-42103 VEHICLE INSURANCE	$0.00
E 602-43340-42200 PROFESSIONAL SERVICES	$7,000.00
E 602-43340-42300 PUBLISHING	$500.00
E 602-43340-42401 EQUIPMENT RENTAL	$100.00
E 602-43340-42500 REPAIRS AND MAINTENANCE	$13,000.00
E 602-43340-42502 VEHICLE MAINTENANCE	$0.00
E 602-43340-42503 TRUCK MAINTENANCE	$1,000.00
E 602-43340-42504 EQUIPMENT MAINTENANCE	$200.00
E 602-43340-42506 RADIO MAINTENANCE	$500.00
E 602-43340-42507 FUEL/OIL/TIRES	$0.00
E 602-43340-42610 SUPPLIES	$12,000.00
E 602-43340-42614 WATER SAMPLES	$7,500.00
E 602-43340-42615 WATER METERS	$10,000.00
E 602-43340-42618 POSTAGE	$0.00
E 602-43340-42619 OFFICE SUPPLIES	$0.00
E 602-43340-42629 OTHER MATERIALS FOR RESALE	$2,500.00
E 602-43340-42635 HOT & COLD MIX	$1,500.00
E 602-43340-42641 GASOLINE	$2,500.00
E 602-43340-42642 OIL, GREASE	$500.00
E 602-43340-42643 COMMUNICATION & RADIO	$2,000.00
E 602-43340-42645 SUP. FOR INHOUSE REPAIRS	$500.00
E 602-43340-42646 DIESEL FUEL	$500.00
E 602-43340-42647 TIRES	$0.00
E 602-43340-42680 UNIFORMS/EQUIPMENT	$400.00
E 602-43340-42700 TRAVEL AND CONFERENCE	$500.00
E 602-43340-42706 SAFETY TRAINING	$1,000.00
E 602-43340-42800 UTILITIES	$0.00
E 602-43340-42802 ELECTRICITY	$2,500.00
E 602-43340-42803 LP GAS/FUEL OIL	$500.00
E 602-43340-42806 ARMORY UTILITIES	$4,000.00
E 602-43340-42900 OTHER SERVICES	$0.00
E 602-43340-42902 MEMBERSHIP DUES	$400.00
E 602-43340-42930 REFUNDS	$0.00
E 602-43340-42940 BAD DEBT EXPENSE	$0.00
E 602-43340-42990 INVENTORY ADJUSTMENT	$0.00
E 602-43340-43200 BUILDINGS	$0.00
E 602-43340-43400 MACHINERY & EQUIPMENT	$10,000.00
E 602-43340-43405 VEHICLE REPLACEMENT	$0.00
E 602-43340-45700 DEPRECIATION	$0.00
E 602-43340-47152 DEBT SERVICE	$103,517.00
E 602-43340-47153 INTEREST EXP FISCHGS	$87,636.00
DEPT 43340 DISTRIBUTION	$409,631.00
DEPT 43341 WATER TOWER PROJECT	
E 602-43341-42200 PROFESSIONAL SERVICES	$0.00
E 602-43341-42300 PUBLISHING	$0.00
E 602-43341-43100 LAND	$0.00
E 602-43341-43300 IMPROVE OTHER THAN BUILDINGS	$0.00

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DEPT 43341 WATER TOWER PROJECT	$0.00
DEPT 43350 ADMINISTRATION AND GENERAL	
E 602-43350-41100 SALARY & FWT	$34,307.00
E 602-43350-41110 FICA	$1,748.00
E 602-43350-41120 MEDFICA	$409.00
E 602-43350-41300 RETIREMENT	$2,058.00
E 602-43350-41400 WORKMEN S COMPENSATION	$400.00
E 602-43350-41500 GROUP HEALTH INSURANCE	$7,154.00
E 602-43350-41600 UNEMPLOYMENT COMPENSATION	$100.00
E 602-43350-42100 LIABILITY INSURANCE	$2,100.00
E 602-43350-42200 PROFESSIONAL SERVICES	$0.00
E 602-43350-42215 DRUG & ALCOHOL TESTING	$200.00
E 602-43350-42300 PUBLISHING	$1,000.00
E 602-43350-42500 REPAIRS AND MAINTENANCE	$0.00
E 602-43350-42501 OFFICE EQUIPMENT MAINTENANCE	$0.00
E 602-43350-42502 VEHICLE MAINTENANCE	$0.00
E 602-43350-42503 TRUCK MAINTENANCE	$0.00
E 602-43350-42506 RADIO MAINTENANCE	$0.00
E 602-43350-42610 SUPPLIES	$0.00
E 602-43350-42618 POSTAGE	$3,500.00
E 602-43350-42619 OFFICE SUPPLIES	$1,000.00
E 602-43350-42640 JANITORIAL SUPPLIES	$0.00
E 602-43350-42641 GASOLINE	$0.00
E 602-43350-42642 OIL, GREASE	$0.00
E 602-43350-42643 COMMUNICATION & RADIO	$0.00
E 602-43350-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 602-43350-42646 DIESEL FUEL	$0.00
E 602-43350-42647 TIRES	$0.00
E 602-43350-42680 UNIFORMS/EQUIPMENT	$200.00
E 602-43350-42700 TRAVEL AND CONFERENCE	$520.00
E 602-43350-42706 SAFETY TRAINING	$0.00
E 602-43350-42800 UTILITIES	$0.00
E 602-43350-42801 TELEPHONE	$1,200.00
E 602-43350-42802 ELECTRICITY	$0.00
E 602-43350-42803 LP GAS/FUEL OIL	$0.00
E 602-43350-42900 OTHER SERVICES	$0.00
E 602-43350-42902 MEMBERSHIP DUES	$400.00
E 602-43350-42940 BAD DEBT EXPENSE	$0.00
E 602-43350-42950 COPIER LEASE	$660.00
E 602-43350-43400 MACHINERY & EQUIPMENT	$0.00
E 602-43350-43405 VEHICLE REPLACEMENT	$0.00
E 602-43350-43410 COMPUTER SOFTWARE & HARDWARE	$5,000.00
E 602-43350-43500 FURNITURE	$0.00
E 602-43350-45910 TRANSFER OUT	$0.00
DEPT 43350 ADMINISTRATION AND GENERAL	$61,956.00
DEPT 43360 WATER TREATMENT PLANT	
E 602-43360-42200 PROFESSIONAL SERVICES	$0.00
E 602-43360-42300 PUBLISHING	$0.00
E 602-43360-42500 REPAIRS AND MAINTENANCE	$0.00
E 602-43360-42610 SUPPLIES	$0.00
DEPT 43360 WATER TREATMENT PLANT	$0.00
DEPT 43370 WATER EXTENSION	
E 602-43370-42200 PROFESSIONAL SERVICES	$0.00
E 602-43370-42300 PUBLISHING	$0.00

Account Descr	2015 Budget
E 602-43370-42900 OTHER SERVICES	$0.00
E 602-43370-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 602-43370-45910 TRANSFER OUT	$0.00
E 602-43370-47152 DEBT SERVICE	$0.00
E 602-43370-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43370 WATER EXTENSION	$0.00
DEPT 43375 LAKEFRONT DR WATERLINE PROJECT	
E 602-43375-42200 PROFESSIONAL SERVICES	$0.00
E 602-43375-42300 PUBLISHING	$0.00
E 602-43375-42618 POSTAGE	$0.00
E 602-43375-42900 OTHER SERVICES	$0.00
E 602-43375-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 602-43375-45910 TRANSFER OUT	$0.00
E 602-43375-47152 DEBT SERVICE	$0.00
E 602-43375-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43375 LAKEFRONT DR WATERLINE PROJECT	$0.00
DEPT 51100 OPERATING TRANSFERS OUT	
E 602-51100-45910 TRANSFER OUT	$0.00
DEPT 51100 OPERATING TRANSFERS OUT	$0.00
FUND 602 WATER FUND	$784,707.00
FUND 604 SEWER FUND	
DEPT 43150 STORM DRAINAGE	
E 604-43150-42200 PROFESSIONAL SERVICES	$0.00
E 604-43150-42500 REPAIRS AND MAINTENANCE	$3,100.00
E 604-43150-42598 FRAME & GRATE	$2,500.00
E 604-43150-42599 STORM SEWER	$0.00
E 604-43150-42610 SUPPLIES	$2,500.00
E 604-43150-42641 GASOLINE	$0.00
E 604-43150-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 604-43150-42646 DIESEL FUEL	$500.00
DEPT 43150 STORM DRAINAGE	$8,600.00
DEPT 43250 SEWAGE COLLECTION AND DISPOSAL	
E 604-43250-41100 SALARY & FWT	$110,069.00
E 604-43250-41110 FICA	$6,250.00
E 604-43250-41120 MEDFICA	$1,460.00
E 604-43250-41300 RETIREMENT	$6,615.00
E 604-43250-41400 WORKMEN S COMPENSATION	$2,235.00
E 604-43250-41500 GROUP HEALTH INSURANCE	$20,800.00
E 604-43250-41600 UNEMPLOYMENT COMPENSATION	$200.00
E 604-43250-42100 LIABILITY INSURANCE	$8,500.00
E 604-43250-42200 PROFESSIONAL SERVICES	$12,000.00
E 604-43250-42215 DRUG & ALCOHOL TESTING	$200.00
E 604-43250-42300 PUBLISHING	$1,000.00
E 604-43250-42401 EQUIPMENT RENTAL	$0.00
E 604-43250-42500 REPAIRS AND MAINTENANCE	$35,000.00
E 604-43250-42501 OFFICE EQUIPMENT MAINTENANCE	$0.00
E 604-43250-42502 VEHICLE MAINTENANCE	$1,000.00
E 604-43250-42503 TRUCK MAINTENANCE	$1,000.00
E 604-43250-42504 EQUIPMENT MAINTENANCE	$5,000.00
E 604-43250-42505 BUILDINGS MAINTENANCE	$1,000.00
E 604-43250-42506 RADIO MAINTENANCE	$250.00
E 604-43250-42507 FUEL/OIL/TIRES	$0.00
E 604-43250-42597 CONTRACT WORK	$0.00

Account Descr	2015 Budget
E 604-43250-42598 FRAME & GRATE	$1,500.00
E 604-43250-42599 STORM SEWER	$0.00
E 604-43250-42610 SUPPLIES	$20,000.00
E 604-43250-42613 CHEMICALS	$15,000.00
E 604-43250-42614 WATER SAMPLES	$11,000.00
E 604-43250-42618 POSTAGE	$4,000.00
E 604-43250-42619 OFFICE SUPPLIES	$250.00
E 604-43250-42629 OTHER MATERIALS FOR RESALE	$500.00
E 604-43250-42640 JANITORIAL SUPPLIES	$0.00
E 604-43250-42641 GASOLINE	$5,000.00
E 604-43250-42642 OIL, GREASE	$500.00
E 604-43250-42643 COMMUNICATION & RADIO	$250.00
E 604-43250-42644 YARD WORK	$0.00
E 604-43250-42645 SUP. FOR INHOUSE REPAIRS	$2,500.00
E 604-43250-42646 DIESEL FUEL	$2,500.00
E 604-43250-42647 TIRES	$0.00
E 604-43250-42680 UNIFORMS/EQUIPMENT	$300.00
E 604-43250-42700 TRAVEL AND CONFERENCE	$1,000.00
E 604-43250-42706 SAFETY TRAINING	$200.00
E 604-43250-42800 UTILITIES	$0.00
E 604-43250-42801 TELEPHONE	$2,200.00
E 604-43250-42802 ELECTRICITY	$30,000.00
E 604-43250-42803 LP GAS/FUEL OIL	$26,000.00
E 604-43250-42806 ARMORY UTILITIES	$4,000.00
E 604-43250-42900 OTHER SERVICES	$0.00
E 604-43250-42902 MEMBERSHIP DUES	$600.00
E 604-43250-42930 REFUNDS	$500.00
E 604-43250-42940 BAD DEBT EXPENSE	$0.00
E 604-43250-42950 COPIER LEASE	$660.00
E 604-43250-43200 BUILDINGS	$0.00
E 604-43250-43300 IMPROVE OTHER THAN BUILDINGS	$20,000.00
E 604-43250-43400 MACHINERY & EQUIPMENT	$10,000.00
E 604-43250-43405 VEHICLE REPLACEMENT	$0.00
E 604-43250-43410 COMPUTER SOFTWARE & HARDWARE	$5,000.00
E 604-43250-43500 FURNITURE	$0.00
E 604-43250-43900 OTHER CAPITAL	$0.00
E 604-43250-45700 DEPRECIATION	$0.00
E 604-43250-45910 TRANSFER OUT	$0.00
E 604-43250-47152 DEBT SERVICE	$0.00
E 604-43250-47153 INTEREST EXP FISCHGS	$0.00
DEPT 43250 SEWAGE COLLECTION AND DISPOSAL	$376,039.00
DEPT 43251 CLARIFIER PROJECT	
E 604-43251-42200 PROFESSIONAL SERVICES	$0.00
E 604-43251-42300 PUBLISHING	$0.00
DEPT 43251 CLARIFIER PROJECT	$0.00
FUND 604 SEWER FUND	$384,639.00
FUND 606 AIRPORT FUND	
DEPT 43500 AIRPORT	
E 606-43500-41100 SALARY & FWT	$33,370.00
E 606-43500-41110 FICA	$1,950.00
E 606-43500-41120 MEDFICA	$455.00
E 606-43500-41300 RETIREMENT	$2,000.00
E 606-43500-41400 WORKMEN S COMPENSATION	$800.00
E 606-43500-41500 GROUP HEALTH INSURANCE	$76.00

Account Descr	2015 Budget
E 606-43500-41600 UNEMPLOYMENT COMPENSATION	$100.00
E 606-43500-42100 LIABILITY INSURANCE	$6,500.00
E 606-43500-42200 PROFESSIONAL SERVICES	$6,000.00
E 606-43500-42300 PUBLISHING	$100.00
E 606-43500-42500 REPAIRS AND MAINTENANCE	$5,000.00
E 606-43500-42610 SUPPLIES	$4,000.00
E 606-43500-42641 GASOLINE	$160,000.00
E 606-43500-42642 OIL, GREASE	$1,000.00
E 606-43500-42646 DIESEL FUEL	$2,000.00
E 606-43500-42700 TRAVEL AND CONFERENCE	$500.00
E 606-43500-42800 UTILITIES	$7,000.00
E 606-43500-42803 LP GAS/FUEL OIL	$7,500.00
E 606-43500-42900 OTHER SERVICES	$6,000.00
E 606-43500-43200 BUILDINGS	$500.00
E 606-43500-43400 MACHINERY & EQUIPMENT	$35,000.00
E 606-43500-43410 COMPUTER SOFTWARE & HARDWARE	$1,000.00
DEPT 43500 AIRPORT	$280,851.00
FUND 606 AIRPORT FUND	$280,851.00
FUND 607 CEMETERY FUND	
DEPT 43700 CEMETERY	
E 607-43700-42100 LIABILITY INSURANCE	$0.00
E 607-43700-42200 PROFESSIONAL SERVICES	$10,000.00
E 607-43700-42300 PUBLISHING	$0.00
E 607-43700-42500 REPAIRS AND MAINTENANCE	$6,000.00
E 607-43700-42610 SUPPLIES	$400.00
E 607-43700-42616 MOWING CONTRACT	$17,000.00
E 607-43700-42617 CONTRACT LABOR	$0.00
E 607-43700-42800 UTILITIES	$500.00
E 607-43700-42900 OTHER SERVICES	$6,000.00
E 607-43700-42930 REFUNDS	$0.00
E 607-43700-43310 LANDSCAPING/YARD WORK IMPROVE	$0.00
E 607-43700-43340 SPRINKLER SYSTEM	$0.00
E 607-43700-45700 DEPRECIATION	$0.00
DEPT 43700 CEMETERY	$39,900.00
FUND 607 CEMETERY FUND	$39,900.00
FUND 680 WATER & SEWER MAIN-90 EXP REC	
DEPT 46810 S&W EXT.	
E 680-46810-42200 PROFESSIONAL SERVICES	$10,000.00
E 680-46810-42500 REPAIRS AND MAINTENANCE	$0.00
E 680-46810-42610 SUPPLIES	$0.00
E 680-46810-42645 SUP. FOR INHOUSE REPAIRS	$0.00
E 680-46810-42930 REFUNDS	$0.00
E 680-46810-43300 IMPROVE OTHER THAN BUILDINGS	$0.00
E 680-46810-45700 DEPRECIATION	$0.00
DEPT 46810 S&W EXT.	$10,000.00
FUND 680 WATER & SEWER MAIN-90 EXP REC	$10,000.00
FUND 771 FIREMENS TRUST FUND	
DEPT 42200 FIRE	
E 771-42200-43400 MACHINERY & EQUIPMENT	$0.00
E 771-42200-45910 TRANSFER OUT	$0.00
DEPT 42200 FIRE	$0.00

USER CHARGE ORDINANCE

RESOLUTION NO. 13-03

RESOLUTION GIVING APPROVAL TO CERTAIN SEWER FACILITIES IMPROVEMENTS; GIVING APPROVAL TO THE ISSUANCE AND SALE OF A REVENUE BOND TO FINANCE, DIRECTLY OR INDIRECTLY, THE IMPROVEMENTS TO THE FACILITIES; APPROVING THE FORM OF THE LOAN AGREEMENT AND THE REVENUE BOND AND PLEDGING PROJECT REVENUES AND COLLATERAL TO SECURE THE PAYMENT OF THE REVENUE BOND; AND CREATING SPECIAL FUNDS AND ACCOUNTS FOR THE ADMINISTRATION OF FUNDS FOR OPERATION OF THE SYSTEM AND RETIREMENT OF THE REVENUE BOND AND PROVIDING FOR A SEGREGATED SPECIAL CHARGE OR SURCHARGE FOR THE PAYMENT OF THE BONDS.

WHEREAS, one of the purposes of SDCL Chapter 9-40 (the "Act") as found and determined by the Legislature is to provide for financing the acquisition, maintenance, operation, extension or improvement of any system or part of any system for the collection, treatment and disposal of sewage and other domestic, commercial and industrial wastes; or any system for the control of floods and drainage; or any combination thereof, together with extensions, additions, and necessary appurtenances; and,

WHEREAS, a municipality is authorized by Section 6 of the Act to issue revenue bonds to defray the cost of extensions, additions and improvements to any utility previously owned without pledging its credit and is authorized to pledge the net income or revenues from the improvements in accordance with Section 15 of the Act; and,

WHEREAS, the City of Mobridge (the "City") currently operates a storm drainage system for the control of floods and other storm water drainage and has determined that improvements to the storm drainage system are necessary for the conduct of its governmental programs and qualifies as an improvement, extension or addition to its storm drainage and has determined that improvements to the storm drainage system are necessary for the conduct of its governmental programs and qualifies as an improvement, extension or addition to its storm drainage system; and,

WHEREAS, the City has determined to issue its revenue bonds to finance the improvements to its storm drainage system for the purpose of storm water management (the "System") and has applied to the South Dakota Conservancy District (the "District") for a Clean Water State Revolving Fund Loan to finance the improvements;

WHEREAS, the City shall adopt special rates or surcharges for the improvements to be pledged, segregated and used for the payment of the Bonds.

NOW THEREFORE BE IT RESOLVED by the City as follows:

SECTION 1. **Definitions.** The terms when used in this Resolution shall have the following meanings set forth in this section unless the context clearly requires otherwise. All terms used in this Resolution which are not defined herein shall have the meanings assigned to them in the Loan Agreement unless the context clearly otherwise requires.

"Act" means South Dakota Codified Laws Chapter 9-40.

"Loan" means the Loan made by the South Dakota Conservancy District to the City pursuant to the terms of the Loan Agreement and as evidenced by the Revenue Bond.

"Project" means the City of Mobridge Storm Sewer Project.

"Revenue Bond" means the revenue bond or bonds issued the date of the Loan Agreement by the City to the South Dakota Conservancy District to evidence the City's obligation to repay the principal of and pay interest and Administrative Expense Surcharge on the Loan.

"System" means the City's system of collection and management of storm water drainage.

SECTION 2. **Declaration of Necessity and Findings.**

2.1.1. Declaration of Necessity. The City hereby determines and declares it is necessary to construct and finance improvements to its System described as the Project.

2.2. Findings. The City does hereby find as follows:

2.2.1. The City hereby expressly finds that if the Project is not undertaken, the System will pose a health hazard to the City and its inhabitants, and will make the City unable to comply with state and federal law.

2.2.2. Because of the functional interdependence of the various portions of the System, the fact that the System may not lawfully operate unless it complies with State and federal laws, including SDCL Chapter 34A-2, and the federal Clean Water Act, and the nature of the improvements financed, the City hereby finds and determines that the Project will substantially benefit the entire System and all of its users within the meaning of Sections 15 and 17 of the Act.

2.2.3. The City hereby determines and finds that for the purposes of the Act, including, in particular, Sections 15 and 17 of the Act, only the net income from the Project financed by the Revenue Bond be pledged for its payment.

SECTION 3. **Authorization of Loan, Pledge of Revenue and Security.**

3.1. Authorization of Loan. The City hereby determines and declares it necessary to finance up to $764,000 of the costs of the Project through the issuance of bonds payable from the revenue of the Project and other funds secured by the City. The

City hereby determines that because the Revenue Bond is issued in connection with a financing agreement described in SDCL 46A-1-49, pursuant to Section 15 of the Act no election is required to issue the Revenue Bond.

3.2. Approval of Loan Agreement. The execution and delivery of the Revenue Obligation Loan Agreement (the "Loan Agreement"), the form of which is on file with the City Finance Officer (the "Finance Officer") and open to public inspection, between the City as Borrower and the District, is hereby in all respects authorized, approved and confirmed, and the Mayor and Finance Officer are hereby authorized and directed to execute and deliver the Loan Agreement in the form and content attached hereto, with such changes as the Attorney for the City deems appropriate and approves, for and on behalf of the City. The Mayor and Finance Officer are hereby further authorized and directed to implement and perform the covenants and obligations of the City set forth in or required by the Loan Agreement. The Loan Agreement herein referred to and made a part of this Resolution is on file in the office of the Finance Officer and is available for inspection by any interested party.

3.3. Approval of Revenue Bond. The issuance of a revenue bond in a principal amount not to exceed $764,000 as determined according to the Loan Agreement in the form and content set forth in Appendix B attached to the form of Loan Agreement (the "Revenue Bond") shall be and the same is, in all respects, hereby authorized, approved, and confirmed and the Mayor, Finance Officer, and other appropriate officials shall be and are hereby authorized and directed to execute and seal the Revenue Bond and deliver the Revenue Bond to the District, for and on behalf of the City, upon receipt of the purchase price, and to use the proceeds thereof in the manner set forth in the Loan Agreement. The Mayor and Finance Officer are hereby authorized to approve the final terms of the Revenue Bond and their execution and delivery thereof shall evidence that approval. The Revenue Bond shall be issued under the authority of SDCL Chapter 9-40 and SDCL Chapter 6-8B, and the provisions of the Act are hereby expressly incorporated herein as provided in Section 19 of the Act.

3.4. Pledge of Revenues. The Revenue Bond together with the interest thereon, shall not constitute a charge against the City's general credit or taxing power, but shall be a limited obligation of the City payable solely out of the Project Debt Service Account, which payments, revenues and receipts are hereby and in the Loan Agreement pledged and assigned for the equal and ratable payments of the Revenue Bond and shall be used for no other purpose than to pay the principal of, interest and Administrative Surcharge on the Revenue Bond, except as may be otherwise expressly authorized in the Loan Agreement (including the purpose of securing Additional Bonds issued as permitted by the terms thereof). The City covenants and agrees to charge rates for all services from the Project or establish special charges or surcharges which will be sufficient to provide for the payments upon the Revenue Bond issued hereunder as and when the same become due, and as may be necessary to provide for the operation and maintenance and repairs of the Project, and depreciation, and the Rate Resolution shall be revised from time to time so as to produce these amounts. The City hereby reserves the right to determine on a

periodic basis the appropriate allocation of operation and maintenance expenses, depreciation, repair and reserves associated with the facilities financed with the Revenue Bond, provided that such determination of allocable operation and maintenance expenses shall in no event abrogate, abridge or otherwise contravene the covenant of the City set forth in this Section 3 or any other covenant or agreement in the Loan Agreement.

SECTION 4. **Special Charge or Surcharge for Revenue Bond.**

4.1. The City does hereby create the Revenue Bond Special-Surcharge District (the "District") which shall include all users which benefit from the Project. There shall be charged a special charge or surcharge pursuant to Section 15 of the Act for the services provided by Project financed by the Revenue Bond. The special charge or surcharge shall be segregated from other revenues of the System and shall be used for the payment of the Revenue Bond. The special charge or surcharge shall create net income, remaining from time to time after first paying all reasonable and current expenses of maintenance, repairs, replacements and operation, sufficient to fund interest, reserve and debt service fund annual requirements and shall be 110% of the debt service requirements on the Revenue Bond.

4.2. Rates and collection. The rate herein specific will be collected as a special charge or surcharge for the Project. This special charge or surcharge shall remain in effect until such time as the Revenue Bond is defeased or paid in full.

4.3. Initial Surcharge. The initial special charge or surcharge shall be set by resolution and collected at the same time as other charges of the utility. All users within the District which benefit from the Project, current and future, shall be charged the special charge or surcharge. The special charge or surcharge is found to be equitable for the services provided by the Project. The special charge or surcharge shall begin at such time as will produce sufficient revenue to pay principal of, interest and Administrative Surcharge on the Revenue Bond when due.

4.4. Segregation. The Finance Officer shall set up bookkeeping accounts in accordance with South Dakota Legislative Audit guidelines for the segregation of the revenue, special charges and surcharges.

4.5. Periodic review. The amount of the surcharge shall be reviewed from time to time, not less than yearly, and shall be modified in order to produce such funds as are necessary and required to comply with the Loan Agreement's rate covenant and to pay principal of, interest and Administrative Surcharge on the Revenue Bond when due. The surcharge may be set by resolution in accordance with this Section. The rate resolution shall be necessary for the support of government and shall be effective upon passage.

SECTION 5. **Additional Bonds.** As permitted by Sections 8 and 9 of the Act, Additional Bonds payable from revenues and income of the System or Project may be issued, as permitted in the Loan Agreement, and no provision of this Resolution shall have the effect of restricting the

issuance of, or impairing the lien of, such additional parity bonds with respect to the net revenues or income from the extensions, additions or improvements. The City shall have the right to issue additional bonds secured by a lien subordinate to the lien from the Revenue Bond pursuant to the Loan Agreement.

SECTION 6. Project Fund Accounts. For the purpose of application and proper allocation of the income of the Project and to secure the payment of principal, Administrative Surcharge and interest on the Revenue Bond, the following mandatory asset segregations shall be included in the sewer system account of the City and shall be used solely for the following respective purposes until payment in full of the principal of and interest on the Revenue Bond:

6.1. Project Revenue Account. There shall be deposited periodically into the Project Revenue Account the net revenues as defined in Section 17 of the Act derived from the operation of the Project collected pursuant to the Resolutions and resolutions of the City of Mobridge, South Dakota (collectively the "Rate Resolution"). Moneys from the Project Revenue Account shall be transferred periodically into separate funds and accounts as provided below.

6.2. Project Debt Service Account. Out of the revenues in the Project Revenue Account, there shall be set aside no later than the 25th day of each month into the account designated Project Debt Service Account, a sum sufficient to provide for the payment as the same become due of the next maturing principal of, interest and Administrative Surcharge on the Revenue Bonds and any reserve determined by the City's governing body to be necessary. The amount set aside monthly shall be not less than one-third of the total principal, interest, and Administrative Surcharge payable on the following January 15, April 15, July 15, or October 15 and if there shall be any deficiency in the amount previously set aside, then the amount of such deficiency shall be added to the current requirement.

6.3. Depreciation Account. There shall be established a General Depreciation Account. Out of the revenues of the Project Revenue Account there shall be set aside each month into the General Depreciation Account an amount determined by the Common Council to be a proper and adequate amount for repair and depreciation of the Project.

6.4. Project Surplus Account. There shall be established the Project Surplus Account. Revenues remaining in the Project Revenue Account at the end of any fiscal year after all periodic transfers have been made therefrom as above required, shall be deemed to be surplus and shall be transferred to the Project Surplus Account. If at any time there shall exist any default in making any periodic transfer to the Project Debt Service Account, the Common Council shall authorize the City Finance Officer to rectify such default so far as possible by the transfer of money from the Project Surplus Account. If any such default shall exist as to more than one account or fund at any time, then such transfer shall be made in the order such funds and accounts are listed above.

When not required to restore a current deficiency in the Project Debt Service Account, moneys in the Project Surplus Account from time to time may be used for any of the following purposes and not otherwise:

(a) To redeem and prepay the Revenue Bond when and as such Revenue Bond becomes prepayable according to its terms;

(b) To pay for repairs of or for the construction and installation of improvements or additions to the System; and, if the balances in the Project Debt Service Account and the Project Depreciation Account are sufficient to meet all payments required or reasonably anticipated to be made there from prior to the end of the then current fiscal year, then:

(c) To be held as a reserve for redemption and prepayment of any bonds of the System which are not then but will later be prepayable according to their terms; or

(d) To be used for any other authorized municipal purpose designated by the Common Council.

(e) No moneys shall at any time be transferred from the Project Surplus Account or any other account of the Fund to any other fund of the City, nor shall such moneys at any time be loaned to other municipal funds or invested in warrants, special improvements bonds or other obligations payable from other funds, except as provided in this Section.

SECTION 7. Approval of Paying Agent/Registrar. The Revenue Bond shall be payable at the office of The First National Bank in Sioux Falls, Sioux Falls, South Dakota, hereby designated as paying agent and registrar.

SECTION 8. Approval of Bond Counsel. Meierhenry Sargent LLP is hereby retained as Bond Counsel with respect to the Revenue Bond.

SECTION 9. Tax Matters. The Interest on the Revenue Bond shall be excludable from gross income for federal income tax purposes under the Internal Revenue Code of 1986, as amended ("the Code") and applicable Treasury Regulations (the "Regulations").

SECTION 10. Covenants. The City hereby covenants and agrees with the District and other owners of the Revenue Bond as follows:

10.1. The City will punctually perform all duties with reference to the Project, the System and the Revenue Bond required by the constitution and laws of the State of South Dakota and by this Resolution.

10.2. The City agrees and covenants that it will promptly construct the improvements included in the Project.

10.3. The City covenants and agrees that pursuant to Sections 25 through 27 of the Act, the lawful holders of the Revenue Bond shall have a statutory mortgage lien upon the Project and the extensions, additions and improvements thereto acquired pursuant to the Act, until the payment in full of the principal and interest on the Revenue Bond, and the City agrees not to sell or otherwise dispose of the System, the Project, or any substantial part thereof, except as provided in the Loan Agreement and shall not establish, authorize or grant a franchise for the operation of any other utility supplying like products or services in competition therewith, or permit any person, firm or corporation to compete with it in the distribution of water for municipal, industrial, and domestic purposes within the City.

10.4. The City covenants and agrees with the District and other owners of the Revenue Bond that it will maintain the System in good condition and operate the same in an efficient manner and at a reasonable cost, so long as any portion of the Revenue Bond remains outstanding; that it will maintain insurance on the System for the benefit of the holders of the Revenue Bond in an amount which usually would be carried by private companies in a similar type of business; that it will prepare, keep and file records, statements and accounts as provided for in this Resolution and the Loan Agreement. The Revenue Bond shall refer expressly to this Resolution and the Act and shall state that it is subject to all provisions and limitations thereof pursuant to Section 19 of the Act.

SECTION 11. Depositories. The Finance Officer shall cause all moneys pertaining to the Funds and Accounts to be deposited as received with one or more banks which are duly qualified public depositories under the provisions of SDCL Ch. 4-6A, in a deposit account or accounts, which shall be maintained separate and apart from all other accounts of the City, so long as any of the Bonds and the interest thereon shall remain unpaid. Any of such moneys not necessary for immediate use may be deposited with such depository banks in savings or time deposits. No money shall at any time be withdrawn from such deposit accounts except for the purposes of the Funds and Accounts as authorized in this Resolution; except that moneys from time to time on hand in the Funds and Accounts may at any time, in the discretion of the City's governing body, be invested in securities permitted by the provisions of SDCL 4-5-6; provided, however, that the Depreciation Fund may be invested in such securities maturing not later than ten years from the date of the investment. Income received from the deposit or investment of moneys shall be credited to the Fund or Account from whose moneys the deposit was made or the investment was purchased, and handled and accounted for in the same manner as other moneys therein.

SECTION 12. Consent to Appointment. In the event of mismanagement of the Project, a default in the payment of the principal or interest of the Revenue Bond, or in any other condition thereof materially affecting the lawful holder of the Revenue Bond, or if the revenues of the Project are dissipated, wasted or diverted from their proper application as set forth in the Loan Agreement, Revenue Bond, or herein, the City hereby consents to the appointment of a receiver pursuant to Section 33 of the Act, and agrees that the receiver will have the powers set forth

therein, and in Sections 34 and 35 of the Act to operate and administer the Project, and charge and collect rates as described therein.

SECTION 13. Severability. If any section, paragraph, clause or provision of this Resolution, the Loan Agreement, the Revenue Bond, or any other Loan Document shall be held invalid, the invalidity of such section, paragraph, clause or provision shall not affect any of the other provisions of this Resolution or said Loan Agreement, Revenue Bond, or any other Loan Document.

SECTION 14. Repeal of Resolution. At such time as the Revenue Bond are defeased or paid in full, this Resolution and the special charge or surcharge shall automatically be repealed without any further action of the City.

SECTION 15. Authorization of City Officials. The Mayor, Finance Officer, City Attorney and City officials shall be and they are hereby authorized to execute and deliver for and on behalf of the City any and all other certificates, documents or other papers and to perform such other acts as they may deem necessary or appropriate in order to implement and carry out the actions authorized herein.

SECTION 16. Effective Date. This Resolution shall take effect on the 20th day following its publication, unless suspended by a referendum.

Adopted at the City of Mobridge, South Dakota, this 21 day of Jan. 2013.

APPROVED:

Mayor

(SEAL)

Attest:
Finance Officer

First reading: 1/21/2013
Published: 1/30/2013
Effective: 2/18/2013

RESOLUTION NO. 13-07

SETTING FEES FOR SEWER SYSTEM SERVICE

WHEREAS, the City of Mobridge desires to set by resolution the fees to be charged for Sewer System Service, both within the City Limits and Outside the City Limits.

NOW THEREFORE, be it RESOLVED,

Except as otherwise provided under ordinance 11-4-4, fees to be charged for service and usage are as follows:

Effective with the June 1, 2013 water billing:

A. Monthly sewer system service charges shall be as follows:

(1) Residence, apartments and mobile homes:

$17.00, per month for each residential and/or apartment and/or mobile home connection; accumulative according to the number of residences, apartment users and mobile home users connected to one sewer outlet.

(2) Commercial connections:

Each separate commercial sewer connection shall pay a minimum service rental of $17.00, per month, and where more than one commercial business shall be connected to one sewer outlet each business shall pay a minimum sewer rental of $17.00, per month. The minimum sewer service charge shall be for 6,000 gallons of water per month used by said business. Where a business uses more than 6,000 gallons of water per month, an additional monthly sewer service charge shall be paid in the amount of $.25 per 1000 gallons of water or portion thereof used by the business in excess of 6,000 gallons per month.

(3) Hotels and/or Motels with Combined Apartments and Sleeping Rooms and/or Business Connections:

a. All hotels and motels having combined apartment and hotel or motel rooms and/or separate businesses connected to the sewer system with one sewer outlet shall pay a sewer service charge at the minimum commercial Rate of $17.00, per month plus $17.00, per month for each additional apartment or business connected thereto. The minimum sewer service charge shall be for 6,000 gallons of water per month used at that location. Where the combined location of the hotel, motel and apartment uses more than 6,000 gallons of water per month, an additional monthly sewer service charge shall be paid in

the amount of $.25 per 1000 gallons of water or portion thereof used at the location in excess of 6,000 gallons per month..

b. An account for services will be kept for each user and a separate account for separate premises. Each owner will be liable for service to the users of his premises. Bills for service shall be rendered quarterly for residential and quarterly for commercial users and will be due within 30 days of date of billing. The charge for sewer service may be included on the water bill, but if so, shall be separately stated thereon. The City Finance Officer will keep account and render the bills; he or she will receive payments of bills and give receipts therefore.

c. All sewer service charges when collected and all monies received from the date of any sewage collection facilities or equipment shall be placed in a separate fund and shall be used first to pay the normal, reasonable and current costs of operation and maintaining the facilities, and the balance shall be used as the Common Council may direct and as provided by law.

c. All sewer service charges shall be charged against the owner, lessee and occupant of the premises, and if such charges shall not be paid when due, the City shall have the right to disconnect water and sewer service to the premises and to collect the delinquent charges by civil action in any court.

BE IT FURTHER RESOLVED,

Surcharge Fees:

Out of the fees set forth above, there shall be removed and placed in a separate segregated account the monthly sum of $2.80 for each sewer connection which amount shall be deemed a surcharge for the sole purposes of repayment of the Clean Water State Revolving Fund loan C461016-04 all as set forth in the Resolution NO. 13-03. The $2.80 surcharge shall remain and continue to be placed in the separate segregated account until the Revenue Bonds for the Clean Water State Revolving Fund loan C461016-04 are fully paid.

Dated this 18 day of April, 2013.

ATTEST:

Heather Beck, Finance Officer

CITY OF MOBRIDGE

BY: _____

Jamie Dietterle, Mayor

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 Mobridge (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to the construction of a new primary clarifier, rehab and repurpose the old primary clarifier, construct a new UV system in the retrofitted clarifier contact chamber, replace the drain pipe and valve to the chlorine contact chamber, convert the sludge to the EQ basin, add new harness rails to two wet/drywell lift stations and expand, update and commission a SCADA system for the plant. (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 $1,971,000 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 Mobridge, South Dakota, this 17th day of March 2014.

APPROVED:

Jamie Dietterle, Mayor
City of Mobridge

(Seal)

Attest:
Heather Beck, Finance Officer

FACILITIES PLAN

MOBRIDGE
BRIDGE CITY

WASTEWATER TREATMENT PLANT

PREPARED FOR:

City of Mobridge, South Dakota

AE2S Project No. P00551-2014-000

June 2014

FACILITY PLAN

Draft

Advanced Engineering and Environmental Services, Inc.
1815 Schafer Street, Suite 301, Bismarck, ND 58501
Ph: 701-221-0530 Fax: 701-221-0531 Web: www.AE2S.com

WASTEWATER TREATMENT PLANT FACILITY PLAN

FOR

CITY OF MOBRIDGE, SD

June 9, 2014

CIVIL ENGINEER

I hereby certify that this Facility Plan was prepared by me or under my direct supervision and I am a duly Registered Engineer under the laws of the State of South Dakota.

_____

Kenneth Weber, PE

DATE: _____ Reg. No.: PE-5731

Portions of the Facility Plan were contributed by:

_____

Jayme Klecker, AE2S

DATE: _____

Prepared by:

Advanced Engineering and Environmental Services, Inc.
1815 Schafer Street, Suite 301
Bismarck, ND 58501

Grand Forks, ND Fargo, ND Williston, ND Dickinson, ND Moorhead, MN
Maple Grove, MN Eagan, MN Great Falls, MT Kalispell, MT

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EXECUTIVE SUMMARY

Existing Facility

The City of Mobridge (City) in Walworth County, South Dakota is a community along the scenic Missouri River, aptly named after the original railroad bridge spanning the river. The City and County have seen population decline over the last few decades, with the City's population becoming relatively stagnant over the past ten years. As a result, the current WWTP is largely sufficient for the needs of the City with key exceptions related to redundancy and infrastructure deterioration. The City is proactively planning for future needs and repair of the existing facility. This Facility Plan details the analysis of the existing WWTP and conclusions and recommendations regarding future action.

Recommended Alternative

After completion of the Facility Plan and the corresponding analysis, AE2S recommends the City pursue Alternative I B. Alternative I B includes new and rehabilitated primary treatment items and disinfection system replacement. Primary treatment items include the construction of a new primary clarifier, rehabilitation of the existing primary clarifier, and a new biofilter pump station (if deemed necessary). Disinfection system replacement includes a new ultraviolet disinfection system and new disinfection basin drain. New and rehabilitated primary treatment and disinfection system replacement are both defined as "base" items for the alternative and their completion is essential to the completion of the selected alternative. Additionally, the construction of all items listed within a base item is required for completion of that part of the alternative. Alternative I B will require a significant capital investment to bring to completion, but may lower the overall operations and maintenance costs and provide for a safer system.

The existing primary clarifier requires major rehabilitation to avoid potential infrastructure failures and permit violations. The SD DENR has stated that if major rehabilitation occurs on the structure, full redundancy must be added to the system in the form of an additional clarifier. Alternative I B calls for the construction of a new primary clarifier followed by the rehabilitation of the existing primary clarifier to provide for a fully redundant primary treatment system.

A new biofilter pump station to transfer flow from the primary clarifiers to the biofilter may be required if the results of a survey indicate the head conditions are not sufficient for flow to reach the existing biofilter pump station by gravity. If the facility's hydraulic profile allows the continued use of the existing biofilter pump station and a new station is not constructed, we recommend rehabilitating the existing biofilter pump station. Like the existing primary clarifier, the existing chlorination/dechlorination system is in need of rehabilitation or replacement due to deteriorating equipment and infrastructure. An analysis determined that replacement of the system with ultraviolet disinfection is a competitive-cost option that yields a safer disinfection alternative. A new disinfection basin drain would also be installed to provide for draining the basin for maintenance and bypass.

Other Alternatives Considered

Alternative I A was also determined to be an acceptable alternative should the City decide against the implementation of the new ultraviolet disinfection system and to instead remain with a chlorination/dechlorination disinfection system. Both alternatives are similar in capital, operations and maintenance (O&M), and net present worth costs, though the ultraviolet disinfection system may actually reduce the O&M costs of the WWTP and is also deemed as the safer alternative due to the lack of hazardous chemicals. Approximately 50 percent of the costs associated with the disinfection system rehabilitation are for equipment replacement while the remaining 50 percent of the costs are related to the expansion of the contact basin to double its current size to meet recommendations for contact times. The installation of an ultraviolet disinfection system will require contact basin retrofitting but no expansion.

Alternative II A and Alternative II B both involved the installation of microscreens to replace the existing primary clarifier system; however, because of the footprint of the units a new building would be required to house the systems and the complexity of the systems would require increased operator attention and for staff to familiarize themselves with a new technology. All of these drawbacks lead to increases in capital and O&M costs. While capital costs remain competitive, the increased O&M costs lead to much higher net present worth values leading to the elimination of these options.

Schedule and Cost Opinion for Selected Alternative

Based on the selected alternative and implementation schedule, final designs would be submitted to the City on December 16, 2014, construction would commence April 6, 2015 with final completion of the project occurring July 25, 2016. Completion and commissioning of the new primary clarifier and disinfection systems will occur by November 30, 2015. Rehabilitation of the existing primary clarifier is to occur and be completed in 2016 as these improvements cannot occur until the new primary clarifier is operational and allows for the existing clarifier to be removed from service. These dates assume the completion of the alternative base items in a single construction phase, but may change depending on the needs and decisions of the City to include, exclude, or phase specific items.

Table ES-1 presents a summary of the cost opinion for the selected alternative base costs. The requirement for full redundancy has led to increase in costs versus previous cost estimates. For example, instead of simply rehabilitating the primary clarifier or installing a brand new primary clarifier, both items are now required to be completed to meet the standards and recommendations of permitting agencies. Additionally, the requirement of a new biofilter lift station was not previously foreseen, due to potential hydraulic profile changes with a new clarifier. This new biofilter lift station has been included in the estimate, though it may not be required. However, at a minimum rehabilitation of the existing biofilter pump station is recommended. A current bid premium factor of 12 percent has also been included in the cost estimate due to knowledge regarding the current construction climate in the region.

Table ES-1 – Alternative I B Cost Opinion Summary

Opinion of Probable Construction Costs	
Alternative I B Base Costs	
Description	**Cost**
Primary Treatment	
New Primary Clarifier	$597,600
Rehabilitate Existing Primary Clarifier for Redundancy	$306,800
New Biofilter Lift Station	$203,500
Disinfection	**$149,500**
New Ultraviolet Disinfection System	$138,000
Disinfection Basin Drain	$11,500
Opinion of Probable Construction Costs	**$1,257,400**
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$565,900
Alt I B Opinion of Probable Project Capital Base Costs	**$1,823,300**
Alt I B Opinion of Probable Project Capital Base Costs w/ Current Bid Premium*	**$2,042,096**
*Current Bid Premium = 12%	

Several Optional Improvements were also considered for the Mobridge WWTP based on the selection of Alternative I B. These alternatives are not essential to providing a fully functioning treatment system, but it is recommended by AE2S that the City pursue the Optional Improvements provided the budget allows and the City desires the item. Optional improvements include an instrumentation and controls upgrade to allow for easier, more efficient operation of the WWTP, a rehabilitation of the existing biofilter lift station if a new biofilter lift station is not required to help extend the life of the building and equipment and keep it in good working order, and also an upgrade of the harness rails for the existing lift station. If the new biofilter lift station is not constructed, AE2S recommends the improvement of Biofilter Lift Station as a required improvement. A current bid premium factor of 12 percent has also been included in the cost estimate due to knowledge regarding the current construction climate in the region. Table ES-2 presents a summary of the cost opinion for the Optional Improvements under Alternative I B.

Table ES-2 – Optional Improvements Cost Opinion Summary

Opinion of Probable Construction Costs	
Alternative I B Optional Improvements	
Description	**Cost**
Instrumentation and Controls Upgrade	$391,900
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$176,400
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs	**$568,300**
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$636,500**
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500
Engineering (20%), Legal (5%), and Construction (20%) Contingencies (assumed self performed)	$0
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs	**$98,500**
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$110,300**
Harness Rail Upgrade	$4,400
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$2,000
Harness Rail Upgrade Opinion of Probable Project Capital Costs	**$6,400**
Harness Rail Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$7,200**
*Current Bid Premium = 12%	

1.0 INTRODUCTION

1.1 City of Mobridge

The City of Mobridge (City) in Walworth County, South Dakota is a community along the scenic Missouri River, aptly named after the original railroad bridge spanning the river. The City and surrounding area are home to a strong rural population. The surrounding area includes Lake Oahe and attracts hunters, fishermen, and various others seeking outdoor activities. These industries, along with local businesses including a casino, and farming, help to provide the community and region with a solid economic base. The City's population has shown slight decline over the last couple decades but has steadied over the past ten years. Large future growth is not expected, but due to the deterioration of aging infrastructure within their current wastewater treatment plant and the possibility for more stringent permitting requirements in the future, the City is proactively planning for future needs of the wastewater treatment plant (WWTP).

1.2 Purpose and Scope of Study Document

The City selected Advanced Engineering and Environmental Services (AE2S) to collect data, evaluate, assess, and study the existing WWTP. This document is intended to meet the requirements of a Facility Plan and is intended to guide the City through the process of improving or replacing components of the existing WWTP. The analysis will cover only the liquid processes at the WWTP. Per the City, the solids processes have been more than adequate and the alternatives presented in this document have no effect on the quantity or quality of the solids streams.

Future treatment requirements have been identified and are based on capacity needs and treatment discharge levels. Capacity needs have been based on anticipated population growth patterns. The discharge levels are controlled by regulatory agencies and are based on the body of water receiving the effluent (Lake Oahe – Missouri River). This study incorporates the expected discharge limits into the alternative evaluation process.

Treatment alternatives have been developed based on the project treatment needs. Each alternative addresses capacity, land needs, costs, and treatment capabilities.

1.3 Summary of Activities

During the preparation of the Facility Plan, AE2S conducted several activities, including data collection, load projections, flow projections, facility assessment, alternate development, cost opinion development, permitting requirements, and funding considerations review. The study involved collection of data to establish existing WWTP conditions, including influent flows, effluent quality records, and review of existing facility record drawings to achieve a reasonable and economical solution. The existing plant has been evaluated and current deficiencies are identified.

After review of the proposed alternatives presented in this report, AE2S has concluded that Alternative I B is the recommended alternative for the City to pursue. Alternative I B calls for

the construction of a new primary clarifier, the rehabilitation of the old primary clarifier, the replacement of the existing disinfection system with an ultraviolet disinection system, and the installation of a tank drain in the disinfection basin. This alternative meets the needs of the City and permitting agencies while remaining competitive on capital costs and resulting in the lowest net present worth alternative. Alternative I B and the installation of the ultraviolet disinfection system may also provide for a reduction in O&M costs based on the analysis. AE2S recommends the City also pursue both optional upgrades – Instrumentation and Controls, Existing Biofilter Lift Station Rehabilitation (if a new biofilter pump station is not required), and Harness Rail Upgrade – outlined by Alternative I B to provide for easier, more efficient plant operation if budget is available. These optional alternatives can also be pursued in future years. The City of Mobridge may elect to pursue any and all options presented to them.

2.0 BASIS OF PLANNING

2.1 Background

Wastewater treatment plants are typically planned based on 20-year population projections. Population data from several sources for the past several decades was used to provide a full picture for current population trends and future population estimates.

2.2 Population Projections

The population of Mobridge and Walworth County has been in decline in recent decades. Flat or declining population models should not be taken lightly and care should be taken to make certain they do not underestimate potential population growth. Should the City or County experience increased industrial or commercial infrastructure development during the planning period, the models could become inaccurate. The population projection takes into account a historical Walworth County and Mobridge population declination rate of -0.79 percent from 1970 to 2000 per a study by South Dakota State University and the United States Census Bureau. The South Dakota Department of Labor and Regulation also projects a continued decline in population of -0.6 percent for Walworth County. The projection does take into consideration data from the United States Census Bureau indicating more stagnant population conditions for Mobridge in the past decade after experiencing a similar population decline as the rest of Walworth County. Based on the various data sources and projections, it is expected that Walworth County will continue its decline in rural population while Mobridge is projected to achieve minimal growth.

A population growth rate of 0.25 percent was assumed for the planning period to 2034. This growth rate was assumed as it is conservative for an area not expected to increase significantly in population. Based on a growth rate of 0.25 percent per year, a planning population of 3,640 was determined as appropriate for the WWTP. Documents obtained from the City indicate the WWTP is currently designed and permitted for a population of 4,640 (with corresponding flow rates). Therefore, based on the projected population growth the existing WWTF should have adequate existing capacity to serve the population for the next 20 years. Improvements will still need to be considered to provide for future process rehabilitation, unit process redundancy, and changed regulatory requirements. The historical census population and various projections for the City and Walworth County are graphically represented in Figure 2-1.

Figure 2-1 – Population Projection

Table 2-1 shows the time horizons relative to various annual growth and decline rates starting from the 2012 Census estimated population of 3,476. Based on the annual growth rates, population numbers are highlighted in bold where the population would increase above populations of 3,640 (projected population) and 4,640 (current plant design population). Multiple rates have been provided to show the timeframe in which the design populations would be achieved. As demonstrated in Table 2-1, variations in growth rate can have significant impacts on the timeframe in which a design population might be reached or exceeded; however, for the City even with an annual growth rate not observed since the 1940s, the WWTP will be within its design population. For example, at an assumed annual growth rate of 1.5 percent, the projected population in Table 2-1 would not eclipse the design population of the existing WWTF until year 2032. For these reasons, additional plant capacity (beyond redundancies and changed regulatory requirements) shall not be required during this planning period, barring unforeseen population growth or the introduction of a significant commercial/industrial user.

Table 2-1 – Population Projections Based on Annual Growth Rates

Year	-1.50%	-0.75%	0.25%	1.50%	2.00%
2012	3,476	3,476	3,476	3,476	3,476
2013	3,424	3,450	3,485	3,528	3,546
2014	3,373	3,424	3,493	3,581	3,616
2015	3,322	3,398	3,502	3,635	**3,689**
2016	3,272	3,373	3,511	**3,689**	3,763
2017	3,223	3,348	3,520	3,745	3,838
2018	3,175	3,322	3,528	3,801	3,915
2019	3,127	3,298	3,537	3,858	3,993
2020	3,080	3,273	3,546	3,916	4,073
2021	3,034	3,248	3,555	3,974	4,154
2022	2,988	3,224	3,564	4,034	4,237
2023	2,944	3,200	3,573	4,095	4,322
2024	2,899	3,176	3,582	4,156	4,408
2025	2,856	3,152	3,591	4,218	4,497
2026	2,813	3,128	3,600	4,282	4,587
2027	2,771	3,105	3,609	4,346	**4,678**
2028	2,729	3,082	3,618	4,411	4,772
2029	2,688	3,058	3,627	4,477	4,867
2030	2,648	3,035	3,636	4,544	4,965
2031	2,608	3,013	**3,645**	4,612	5,064
2032	2,569	2,990	3,654	**4,682**	5,165
2033	2,531	2,968	3,663	4,752	5,268
2034	2,493	2,945	3,672	4,823	5,374
2035	2,455	2,923	3,681	4,896	5,481

2.3 Flows and Loadings

The determination of flowrates and mass loading variations is an important factor in the planning and design of wastewater treatment plants. The analysis involves determining constituent concentrations, flowrate variations, and the resulting mass loadings. The mass loading is defined as the constituent concentration multiplied by the flowrate and is given in units of mass per unit time (i.e., pounds per day, lbs/d). The mass loadings are determined by analyzing historical flowrate data as well as constituent concentrations. Constituents of concern include 5-Day Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS). These constituents are defined as follows:

- **BOD_5:** The amount of oxygen required to stabilize biodegradable organic matter under aerobic conditions within a five day period.
- **TSS:** A portion of the total solids retained on a filter (1.58 um), measured after being dried at 105° C.

Various flowrates were examined and are defined as follows:

- **Annual Average Flow:** The average flowrate occurring over a 24 hour period based on annual flowrate data.
- **Minimum Flow:** The minimum flow to the plant based on 50 percent of the annual average.
- **Maximum Week:** The average of the maximum daily flows sustained for a period of 7 consecutive days.
- **Maximum/Peak Day:** The average of the peak flows sustained for a period of 24 hours.
- **Maximum/Peak Hour:** The average of the peak flows sustained for a period of one hour.

2.3.1 Historic Flows and Loadings

Table 2-2 is a summary of influent flow data from 2010 to April 2014 obtained from Environmental Protection Agency (EPA) documents detailing reported values from permittees. City-provided data for the WWTP is also provided in Table 2-2. Flow is shown in million gallons per day (MGD). The referenced EPA documents were obtained through their Integrated Compliance Information System (ICIS) databases that can found at the following URL: http://www.epa.gov/enviro/facts/pcs-icis/index.html.

Table 2-2 – Average Annual WWTP Flow Data

Year	Total Flow (MGD)		Flow Per Capita* Flow (gpd/person)	
	EPA Reporting Data	City Data	EPA Reporting Data	City Data
2010	0.359	0.329	102.6	94
2011	0.337	0.305	96.3	87.14
2012	0.335	0.315	95.7	90
2013	0.343	--	98	--
2014	0.4015	--	114.7	--
*Population assumed equal to 3,500 per City of Mobridge.				

The City provided overall flows for the entire year. This was divided by the number of days in a year to achieve the average daily flow. EPA documents provided two flows that were labeled as instantaneous indicating that two separate instantaneous measurements were taken and submitted to satisfy monthly permit requirements. Variation in EPA and City data could likely be the result

of the EPA data points being instantaneous. Depending on the plant conditions at the time of reporting the average flow for that month may be slightly different. The elevation of the present year (2014) values is likely due to limited data points (monthly values) with one EPA data point from one month indicating a much higher than previously observed conditions (0.597 MGD).

Typical flows to a wastewater treatment plant can be estimated based on the population served. A typical per capita estimate of wastewater produced is 100 gallons per person per day for WWTP serving larger cities and as low as 75 gallons per person per day in smaller communities (less than 1.0 MGD). Mobridge City data falls in the middle of these values while the EPA values match the larger community estimates.

Historical load information was not provided by the City. Average Annual Load information from the EPA was obtained for 2010 to 2014 and placed into Table 2-3. Projected WWTP flows and loads based on the data available and a projected design population of 3,645 is included in Table 2-4. Design load information as provided by the City is provided in Table 2-5. Missing values in Table 2-5 were not provided in any documents or permits. Peak daily BOD and TSS loading rate peak factors were determined using the following formulas and multiplied by the average daily loading. Peak hour factors are not determined for these parameters as the values are not used as design conditions for WWTPs.

$$BOD_{PFd} = \frac{4.08}{BOD^{0.0732}}$$

$$TSS_{PFd} = \frac{4.08}{TSS^{0.0716}}$$

$$BOD = average\ annual\ BOD_5\ load\ \left(\frac{lb}{day}\right)$$

$$TSS = average\ annual\ TSS\ load\ \left(\frac{lb}{day}\right)$$

$$BOD_{PFd}, TSS_{PFd} = peaking\ factor\ average\ value\ during\ peak\ day$$

As was the case with the plant flows, 2014 data is again elevated. Normal loading concentrations have been reported for 2014, indicating the estimated loading is a direct result of the limited flow datapoints. The calculated design loads will be used in the analysis of the WWTP, with the exception of 2014 data due to the limited number of data points available.

Based on the projected flow and load calculations, the design flow rate for the facility is greater than the projected flows for this planning period as all projected flows fall below the peak hour capacity for the facility per provided City documents. The design BOD (facility and biofilter) at average annual flows is exceeded by the projected BOD_5 loading for this planning period when not taking into account the treatment capability of the aeration system. Despite projected BOD loadings higher than the existing BOD loading capacity, the projected BOD loadings per capita per day is equal to 0.17, the same value outlined as the design basis by Ten States Standards. The

projected TSS loading is just below the design basis of 0.20 pounds per capita per day by Ten States Standards.

Table 2-3 – Average Annual BOD_5 and TSS Loading Data (EPA)

Year	BOD_5 Influent (lb/day)	BOD_5 Effluent (lb/day)	TSS Influent (lb/day)	TSS Effluent (lb/day)	Influent BOD_5/Capita* (lb/person)	Influent TSS/Capita* (lb/person)
2010	613	23.6	610	30.4	0.18	0.17
2011	598	19.7	640	29.3	0.17	0.18
2012	574	17.5	594	32.2	0.16	0.17
2013	606	22.3	662	34.6	0.17	0.19
2014	701	29.5	728	36.4	0.20	0.21
Average (Excluding 2014)	598	20.8	627	31.6	0.17	0.18

*Existing population equal to 3,500 per City of Mobridge.

Table 2-4 – Projected WWTP Flows and Loads

Design Parameter	Annual Average	Minimum	Maximum Day	Maximum Hour
Flow (MGD)	0.358	0.179	0.894	1.206
BOD_5 (lb/day)	622	311	1,586	--
TSS (lb/day)	652	326	1,674	--

Projections based on population of 3,645 from Table 2-1 above.

Table 2-5 – WWTP Permitted Design Flow and Current Design Loading

Design Parameter	Maximum Permitted Design Daily Average	Annual Average	Maximum Day	Maximum Hour
Average Annual Flow Per Permit (MGD)	0.60	0.36	0.64	1.61
BOD_5 (lb/day)	--	555 (736)	1,040 (1,221)	--

Values in parentheses indicate design capacity of combined BOD treatment capacity of biofilter and activated sludge process. Assumption is additional treatment capacity of 15 pounds per 1,000 cubic feet of aeration.

As demonstrated in Table 2-5, the design BOD capacity is greater than the projected BOD loading when accounting for removal in the short term aeration basin. Preliminary and primary treatment processes upstream of the biofilter can also provide a reduction of BOD up to 30 percent, but the current primary clarifier offers no redundancy. Therefore, a 30 percent reduction

by preliminary and primary processes cannot be assumed as during bypass the entire loading will enter the biofilter. As a result, the analyses in this plan will use the provided existing plant design capacity and projected values for evaluations.

Peak hour flow is typically dependent upon population, with larger populations experiencing a smaller peaking factor due to a more distributed peak. A peaking factor of 3.36 was determined through the use of the following equation per the SD DENR and Ten States Standards. Per SD DENR recommendations, the maximum day flow was projected using a ratio of 2.5:1 for maximum daily flow to average annual flow.

$$PF = \frac{18 + \sqrt{\frac{P}{1000}}}{4 + \sqrt{\frac{P}{1000}}}$$

PF = peak hour factor
P = contributing population

2.4 Flood Planning

Wastewater treatment plants are commonly located on land subject to flood conditions to facilitate gravity flow sewers. Plants must remain accessible during 25-year flood elevations and operable at 100-year flood elevations. To address these criteria the top of wall elevations for structures should be at least one foot above the 100-year flood elevation. The Mobridge WWTP is located next to the Lake Oahe Reservoir on the Missouri River. A review of the 2010 Final Oahe/Lake Oahe Master Plan from the U.S. Army Corps of Engineers details a maximum flood control elevation of 1620 m.s.l. Per record drawings, the lowest elevation on site is approximately 1628 m.s.l. Based on these elevations, it is concluded that the Mobridge WWTP at its current location is not in danger of flooding even in worst case conditions.

3.0 WASTEWATER TREATMENT PLANT LIQUIDS PROCESSES ASSESSMENT

3.1 Introduction

The purpose of this section is to summarize the condition and adequacy of the existing Mobridge WWTP liquids processes and equipment based on the flow and load data presented in Section 2 and interactions with the South Dakota Department of Environment and Natural Resources (SD DENR). The assessment will also include additional information regarding the current condition of the plant based on site visits and discussions with the City and plant employees. A description and evaluation of each liquid unit process is included. Record drawings from the facility have been reviewed to determine capacities of the existing treatment unit processes. Exhibit 1 of this report details the existing location of the WWTP and relevant items of interest such as airports, floodplains and elevations, wetlands, etc. Exhibit 2 of Appendix B details the existing WWTP and liquids processes.

The treatment capacity of the plant is dictated by the current equipment and process installations. It should be noted that based on Section 2, population, flow, and load projections for the 20-year planning period are below the design capacity of the existing WWTP. The projected WWTP flows and loads are presented in Table 3-1 (identical to Table 2-4 and included in this section for clarity). The capacity needs of the plant will be analyzed based on the values in Table 3-2 versus the projected flows and loads provided in Table 3-1. Plant design capacities were provided in documents by City staff and are used for analysis throughout this report and are located in Table 3-2 (identical to Table 2-5 and included in this section for clarity).

The values fall within reasonably expected values based on the population served and are considered accurate for use in this report. Additionally, information regarding individual unit process sizes, capacities, and loading rates were provided by City staff and have been included in Table 3-3 for analysis with regard to projections and design flows and loads.

Table 3-1 – Projected WWTP Flows and Loads

Design Parameter	Annual Average	Minimum	Maximum Day	Maximum Hour
Flow (MGD)	0.358	0.179	0.894	1.206
BOD_5 (lb/day)	622	311	1,586	--
TSS (lb/day)	652	326	1,674	--
Projections based on population of 3,645 from Table 2-1.				

Table 3-2 – WWTP Permit Design Flow and Current Design Loading

Design Parameter	Maximum Permitted Design Daily Average	Annual Average	Maximum Day	Maximum Hour
Average Annual Flow Per Permit (MGD)	0.60	0.36	0.64	1.61
BOD_5 (lb/day)	--	555 (736)	1,040 (1,221)	--

Values in parentheses indicate design capacity of combined BOD treatment capacity of biofilter and activated sludge process. Assumption is additional treatment capacity of 15 pounds per 1,000 cubic feet of aeration.

Table 3-3 – Existing Plant Unit Process Summary

Unit Process	Quantity	Design Parameter	Existing Capacity (Per Unit)
Screw Pumps	2	Flow	1,720 gpm
Grit Chamber	2	Detention Time	15.3 min (ADF)
Primary Clarifier	1	Surface Overflow Rate	374 gpd/ft^2 (ADF)
Activated Biofilter	1	Organic Load	103 lb / 1,000 ft^3 (ADF) 193 lb / 1,000 ft^3 (PDF)
Short Term Aeration Basin	1	Hydraulic Detention Time	6.2 hours (ADF) 3.5 hours (PDF) 1.4 hours (PHF)
		Organic Load	181 lb / 1,000 ft^3 (ADF)
Final Clarifier	1	Surface Overflow Rate	226 gpd/ft^2 (ADF) 402 gpd/ft^2 (PDF) 1,012 gpd/ ft^2 (PHF)
Disinfection	1	Hydraulic Detention Time	32.9 minutes (ADF) 18.5 minutes (PDF) 7.4 minutes (PHF)

ADF = Average Daily Flow
PDF = Peak Daily Flow
PHF = Peak Hourly Flow

3.2 WWTP Liquids Processes Assessment

Information from City staff, record drawings, and pump data were used to assess the treatment capacity and condition of the Mobridge WWTP liquid processes. The WWTP assessment is presented based on the process flow sequence as follows:

- Pretreatment Building
- Primary Clarifier
- Biofilter Pump Station and Biofilter
- Short Term Aeration Basin
- Final Clarifier
- Disinfection
- Instrumentation and Controls

3.2.1 Pretreatment Building

Per record drawings, immediately prior to the Pretreatment Building flow enters a manhole where it is routed to the Pretreatment Building or to an emergency bypass leading to the Biofilter Pump Station. Concrete walls have been inserted in the manhole to a level 6'-3" greater than the gravity pipe invert elevation to the Pretreatment Building. This allows for an automatic emergency bypass should capacity problems occur in the Pretreatment Building for any reason.

The existing Pretreatment Building and equipment were installed approximately 20 years ago and are in reasonably good condition. Flow enters the Pretreatment Building and is routed to screw pumps. The 10-HP screw pumps have individual capacities of 1,720 gpm which exceeds the existing plant design peak hour flow of 1,120 gpm (1.61 MGD) and the projected peak hour flow of 838 gpm (1.206 MGD) by a comfortable amount. As a result, the screw pumps have full redundancy and are suitably sized for the current WWTP and projected populations. The screw pumps send the flow to a 1.5-HP automatically cleaned mechanical bar screen. Information regarding the capacity and screen spacing for the mechanical bar screen was not provided on copies of the original equipment proposal sheet; however, the equipment was installed along with the sufficiently sized screw pumps and is assumed to have sufficient capacity based on this knowledge. A manual bypass screen and channel are installed per SD DENR and Ten States Standards recommendations for when the mechanical bar screen is out of service or capacity is exceeded.

Grit removal systems provide for the removal or large and/or abrasive material that could interfere with or damage downstream processes and equipment and are recommended for installation after screening equipment. Grit removal systems are required for all mechanical wastewater plants in the state of South Dakota. An aerated grit removal system follows the bar screen area at the Mobridge WWTP. The system employs two 8'x8'x8' parallel aerated grit chambers aerated by a 3-HP blower which provides the system with redundancy. City personnel are currently replacing portions of the aerated grit equipment. These repairs should extend the useful life of the aerated grit equipment for several years. The detention time of a single unit is 3.43 minutes at peak hourly design flow which falls within typical detention times of two to five

minutes. Aeration for a single unit is 6.875 cubic feet per feet of length which falls between recommended ranges of three to eight. The aeration basins do not entirely follow minimum sizing recommendations per literature and the SD DENR requirements for depth to width and length to width. The current aerated grit chamber is 1:1 for each of the units while recommendations call for minimum 1.5:1 and 3:1 ratios for depth to width and length to width, respectively. However, the system has been functional for many years and no improvements are necessary.

Before leaving the Preliminary Treatment Building, the flow passes through a Parshall flume where flow is measured and recorded.

3.2.2 Primary Clarifier

Treatment is continued through the use of a single primary clarifier. The primary clarifier in the Mobridge WWTP is used to reduce organic loadings to acceptable levels for downstream treatment processes and also to reduce floatables. The lack of an additional clarifier translates to a lack of redundancy in this unit process. SD DENR and Ten States Standards recommendations state that full redundancy of clarifiers shall be required for plants with an average design capacity of greater than 0.1 MGD unless the system being removed from service will not have major adverse effects on treatment and effluent quality. The primary clarifier can be bypassed for the short-term without significant detrimental impacts to the effluent quality; however, extended bypass of the primary clarifier would have negative impacts on the downstream treatment process efficiency and overall effluent quality. The SD DENR has stated explicitly if major construction is performed on the primary clarifier, full redundancy must be added to the system.

Based on site visits, photographs, and interactions with the City, it has been determined that the current primary clarifier is in poor condition and requires significant rehabilitation. The WWTP may have issues with effluent quality during a long-term primary clarifier rehabilitation project. Potential rehabilitation items may include the demolition of piping, equipment, and the collection trough, upgrading sludge transfer piping, removal/reinstallation of the dome cover, concrete rehabilitation, and high performance coating. The existing primary clarifier is 35 feet in diameter and has an eight (8) foot side wall depth. The clarifier provides for a surface overflow rate of 374 gpd/ft^2 at average daily design flow conditions. The diameter of the clarifier provides for the minimum ten feet distance between influent inlet and effluent weirs outlined by the SD DENR and Ten States Standards to avoid short circuiting (when flows enter the clarifier but the detention time is insufficient due to the same flow exiting quickly). Additionally, the eight foot sidewater depth exceeds the SD DENR requirement of seven feet for primary clarifiers at the time of clarifier construction; however, the primary clarifier sidewater depth is two feet less than the minimum sidewater depth of ten feet required by Ten States Standards. Insufficient sidewater depths may lead to solids overflow due to an insufficient separation zone between the sludge blanket and the overflow weirs. The surface overflow rate at average flows is well below the maximum of 1,000 gpd/ft^2 required by the SD DENR and Ten States Standards. The surface overflow rate at design peak hourly flows (1.61 MGD) falls at the lower end of the 1,500-2,000 gpd/ft^2 maximum range requirement specified by Ten States Standards (~1,675 gpd/ft^2) while the overflow rate for the projected peak hourly flow falls well below the range. Falling below the range is preferred as significant reductions in BOD removal efficiency are observed above 1,500

gpd/ft^2. Given that population growth in the area is not expected and the current low value for average daily conditions, it is concluded that the clarifier is currently well-suited hydraulically for the system. However, due to the deteriorated condition of the existing clarifier structure and equipment, extensive rehabilitation of the existing clarifier or construction of a new primary clarifier must be included in the City's WWTP improvements plan.

3.2.3 Biofilter Lift Station and Biofilter

The biofilter lift station and wetwell are centrally located on WWTP site. The wetwell is set-up to receive flows that include primary clarifier effluent, digester supernatant, sludge drying bed underdrain, and the pretreatment building emergency bypass. The existing lift station design uses two 20-HP dry pit pumps pulling from the nearby manhole/wetwell. No pump curve information was supplied by the City, but it is assumed these pumps are appropriately sized to pump all required flows to the biofilter due to that being their primary function. The lift station itself is in satisfactory shape, though depending on the alternative selected may require limited rehabilitation including ventilation and painting/coating.

The biofilter is the first unit process in a combined biofilter/activated sludge process. By EPA definition, the biofilter set-up in Mobridge is a "roughing filter" designed for removal of 40 to 70 percent of the organic loading. Information provided by the City indicates the activated biofilter unit is 384 square feet and 14 feet in depth. The capacity of the system is rated for 103 pounds per 1,000 cubic feet at average daily flow and 193 pounds per 1,000 cubic feet at peak daily flow (554 and 1,038 pounds per day for average and peak daily loadings, respectively). As discussed in Section 2, current monitoring data indicates the current average daily organic loading to the plant is 606 pounds per day with projections of 622 pounds per day for the end of this planning period. At the current loading rate the biofilter is not able to meet the loading rates of a primary treatment bypass flow.

Per the SD DENR and Ten States Standards, it can be assumed that up to 30 percent of the organic loading may be removed through the primary clarifier – providing for a reduced loading to the biofilter (or balancing out loadings based on possible return flows). Because there is no primary clarifier redundancy at the Mobridge WWTP, a 30 percent reduction of organic loading cannot be assumed as the bypass would require treatment of the entire influent load. If the WWTP were to install primary clarifier/treatment redundancy, a 30 percent load reduction to the biofilter can be reasonably assumed. Table 3-4 details the biofilter design capacity as well as the projected loadings with and without primary treatment. Biofilter design loading recommendations are 75 to 300 pounds per 1,000 cubic feet. As demonstrated by the loading values in Table 3-1, without primary treatment the biofilter will exceed the average day design capacity of the biofilter. However, with primary treatment redundancy all flows (minimum excluded) fall within recommended loading rates and are within or close to annual average and maximum day biofilter capacities.

Table 3-4 – Biofilter Capacity and Projected Organic Loading

Organic Loading Condition	Annual Average Day Loading	Minimum	Maximum Day
Biofilter Design Capacity	103	--	193
No Primary Treatment (lb/1,000 ft^3)	116	58	289
Primary Treatment - 30% Load Reduction (lb/1,000 ft^3)	81	41	203

Based on the presented information and population projections, the current biofilter installation is sufficient for all population and flow projections with the addition of primary treatment redundancy at the WWTP. Regardless, the existing primary clarifier is in need of major reconstruction.

3.2.4 Short Term Aeration Basin

The short term aeration basin is the second major unit process involved in a typical combined biofilter/activated sludge process. Aeration systems installed as at the Mobridge WWTP are necessary to create an environment for microbiological constituents which consume organics and, depending on plant operation, various nutrients. These microbiological constituents consume items targeted for removal from the system and then are settled out in the Final Clarifier. Aeration systems are typically required to achieve dissolved oxygen concentrations of 2 mg/L for optimal microbiological growth without wasting energy. Multiple blowers are provided at the Mobridge WWTP for redundancy; however, no information was given regarding blower outputs or aeration system makeup to determine sufficiency of this part of the system.

The basin is circular, 40 feet in diameter and has a 9.6 foot side wall depth. The hydraulic retention times of the basin based on effluent flows is 6.2 hours, 3.5 hours, and 1.4 hours based on average daily, peak daily, and peak hourly flow conditions, respectively. Information regarding the Short term aeration basins with an upstream activated biofilter typically have hydraulic retention times from 2-4 hours or greater. In all analyses it has been assumed that the short term aeration basin has an organic capacity of 15 pounds per 1,000 cubic feet. Based on this and other available information presented, the equipment and aeration basin are sufficiently sized for use in all projected design populations and do not require any additional capacity.

3.2.5 Final Clarifier

A new final clarifier was installed as part of the WWTP improvements in the past 20 years. Based on site visits, conversations with plant personnel, and photographs, the final clarifier appears to be in good condition. Like the aforementioned primary clarifier, final or secondary clarifiers are used to settle out remaining solids and to reduce organic loadings to acceptable levels for discharge into the receiving stream. Mobridge WWTP has a single final clarifier. During preparation of this report, conflicting information on the depth of the final clarifier was discovered. For the purpose of this report and based on information received from the City, it was assumed the clarifier has 8-foot sidewater depth. The final clarifier is 45 feet in diameter.

The diameter and clarifier layout allows for the minimum distance of ten feet between influent inlet and effluent weirs to be achieved; however, the eight foot sidewater depth does not meet the current SD DENR and typical recommendations for sidewater depths – ten feet for final clarifiers, and twelve feet for final clarifiers following activated sludge processes. This deficiency is not as big of an issue due to the final clarifier being relatively small in size, but a deeper tank would allow for greater flexibility and a larger margin of safety in operation, particularly when system upsets occur. However, the existing final clarifier has provided satisfactory results and if future improvements are necessary the exact sidewater depth of the clarifier can be determined at that time. The Mobridge WWTP is subject to relatively strict pH discharge limits (6.6 – 8.3). Lime can be added to the final clarifier for pH control.

Per documents provided by City staff, the surface overflow rates for the final clarifier are 226, 402, and 1,012 gpd/ft2 for average daily, peak daily, and maximum hour flow design flow rates, respectively (Table 3-2). The SD DENR and Ten States Standards recommend that surface loading rates not exceed 1,200 gpd/ft^2 at design peak hourly flow for final clarifiers following activated sludge processes. The existing final clarifier falls well within the overflow rate requirements for all flows and because the existing design maximum hour flow rate exceeds the projected maximum hourly flow rate, the existing final clarifier is sufficient for all flows in this planning period. The weir loading rate at the design peak hourly flow of 1.61 MGD is approximately 11,400 gallons per linear foot and exceeds the SD DENR recommendation of 10,000 gallons per linear foot for final clarifiers in plants with average design flows of 1.0 MGD or less. This may result in solids overflow at peak hourly conditions if a good settling floc is not promoted in the WWTP. The weir loading rate at the projected peak hourly flow of 1.206 MGD is approximately 8,530 gallons per linear foot and is well within the SD DENR recommendation. The solids loading rate of the final clarifier should fall within recommended values such that the clarifier can perform proper settling while returning a concentrated activated sludge flow. The final clarifier solids loading rate was not provided but was calculated to range between 13.6 and 36.3 pounds per day per square foot, respectively, under maximum return activated sludge conditions (150 percent of peak monthly flow). Calculations used a mixed liquor suspended solids range of 1,500 to 4,000 mg/L (typical values for similar systems). The worst case condition (36.3) slightly exceeds Ten States Standards recommendations for this system of 35 pounds per day per square foot.

Based on the data provided, the existing final clarifier is deemed as sufficient for use under existing permits and the requirements of the next permitting cycle. The City should consider adding redundant clarifier capacity when major modifications or improvements are deemed necessary to the final clarifier.

3.2.6 Disinfection

Disinfection processes are employed to provide for the inactivation of harmful microbiological contaminants prior to discharging the wastewater effluent into a receiving stream. The Mobridge WWTP currently disinfects through chlorination/dechlorination. The 8,220 gallon contact basin currently provides for hydraulic detention times of 32.9, 18.5, and 7.4 minutes at current design average daily, peak daily, and peak hourly flows, respectively, according to documents provided by the City. Hydraulic detention times at projected average daily, peak daily, and peak hour

flows are 19.7, 13.3, and 9.8 minutes, respectively. Ten States Standards calls for the contact time at peak hour flow rates to be a 15 minutes at a minimum. The current Mobridge WWTP contact basin fails to meet this requirement, and also does not meet this specified contact time based on peak daily flows. Hydraulic retention time is difficult to increase without infrastructure changes, though the dosing rate is much more flexible to meet acceptable concentrations for particular flow rates. Even with these deficiencies the WWTP has achieved acceptable fecal coliform test results with the existing system. However, risking insufficient disinfection is not acceptable for WWTPs and therefore the current chlorine contact basin is undersized based on required contact times and must be doubled in size to cover all design conditions. The WWTP averaged 12.1 pounds, 10.6 pounds, and 10.6 pounds of chlorine use per day in 2010, 2011, and 2012, respectively. The WWTP averaged 12.1 pounds, 14.8 pounds, and 10.3 pounds of sulfur dioxide use (dechlorination) per day in 2010, 2011, and 2012, respectively. These dose concentrations are within the standard range required for activated sludge effluents as well as nitrified effluents.

The Mobridge WWTP currently employs a chlorination/dechlorination disinfection system that is fed to a chlorine contact basin through flow proportioning chlorinators and injected as a solution. The system includes dosing equipment and a chlorine contact basin. Based on site visits and discussions with City staff it has been determined that the disinfection system, specifically the feed equipment and related appurtenances, are in need of replacement to provide adequate, reliable disinfection and avoid any violations and risks to public health. Reliable and functional disinfection systems are needed to provide proper disinfection prior to discharge and avoid potential fines and adverse effects on the environment. Additionally, the contact basin does not currently have a drain pipe installed which can lead to issues when the basin needs to be drained for construction or service.

3.2.7 Instrumentation and Controls

The instrumentation and controls at the current WWTP are rudimentary in nature and provide feedback currently for influent flows, effluent flows, return activated sludge flows, and waste activated sludge flows, along with a few other isolated feedback points. Controls can be included in numerous areas of plants with some being deemed as more critical than others. The Mobridge WWTP could greatly benefit from the installation of new controls and control panels. The installation would allow for more efficient, precise, and easier operation of the plant by the City than is available through their current controls infrastructure or through manual operator operation. The controls could allow for remote operation of selected equipment and allow the staff to make quick and necessary changes to the plant's operation.

3.2.8 Biosolids

The City of Mobridge WWTP handles sludge from their treatment processes through an aerobic digestion system. The first part of the system is a primary digester with coarse bubble diffuser aeration and a hydraulic detention time of 27 days. The digester is 35 feet in diameter and 21 feet in depth. An unmixed, unaerated secondary sludge tank serves as a sludge holding basin. This holding basin is 35 feet in diameter and 19.5 feet in depth. Digested sludge is land applied to airport and privately owned property in accordance with the WWTP's permit (SDL020028). The

WWTP also has a sludge drying be installation allowing for an additional storage and drying location during winter months when land application may not be feasible. Sludge applied to the drying beds is disposed of in the Walworth County landfill. The WWTP also has a sludge storage lagoon with a volume of 530,000 gallons located on site. The City has stated the existing systems are more than sufficient for their needs and, therefore, the biosolids processes were not evaluated in this facility plan.

3.3 Summary of WWTP Assessment

The treatment units for the Mobridge WWTP are all currently sized sufficiently to meet the effluent requirements under their current permit and for their expected limits under the next permitting cycle. They are also sufficiently sized for all expected projected and design populations for the WWTP. Future analyses will have to be completed at that time to determine possible deficiencies based on new limits.

Despite being appropriately sized, there are deficiencies with the current system. At present, the current primary clarifier is in dire need of repair and no redundancy is currently provided for this unit process per SD DENR recommendations. Failure of the process could potentially lead to overloading downstream processes, permit violations, and subsequent fines. Major rehabilitation of the existing primary clarifier is needed, but will not be permitted to proceed by the SD DENR unless redundancy is added to the system for primary treatment.

The disinfection system is deficient for hydraulic detention times (contact times) at projected peak daily and peak hour flows. Additionally, the system requires an overall update and the addition of a new valve and drain piping to the chlorine contact chamber in addition to new gaseous chlorine and sulfur dioxide feed equipment.

As aforementioned, the instruments and controls at the WWTP are basic and currently include a handful of items. Upgraded controls could dramatically improve performance of the system leading to better, easier, and more efficient operation and potential cost savings. The addition of these instruments and controls is not completely necessary, but it is recommended. Further discussion is included in Section 5.

4.0 REGULATORY REQUIREMENTS

4.1 Existing Permit Characteristics

The City of Mobridge WWTP has a current NPDES Permit #SD0020028 issued on June 23, 2011. The Permit authorizes the City of Mobridge WWTP to continuously discharge to Lake Oahe – a reservoir on the Missouri River. Lake Oahe is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Section 74:51:03:01 and 74:51:03:05 as a river with the following beneficial uses: domestic water supply water; coldwater permanent fish life propagation waters; limited contact recreation waters; fish and wildlife propagation, recreation, and stocker watering waters; irrigation waters; and commerce and industry waters. Permit renewal will be required after June 30, 2016, with the permit renewal application due 180 days before the permit expiration date. Table 4-1 outlines the various limits and monitoring requirements for the Mobridge WWTP based on their existing permit. A copy of the NPDES permit has been included in Appendix C.

Table 4-1 – NPDES Effluent Limits

Parameter	Limit			Units	
	30-Day Average	7-Day Average	Daily Minimum	Daily Maximum	
Five-Day Biochemical Oxygen Demand (BOD_5)[1]	30	45	--	--	mg/L
Total Suspended Solids (TSS)[1]	60	45	--	--	mg/L
Escherichia coli (*e. coli*)[2]	126	--	--	235	No./100mL
Total Coliform	5,000	--	--	20,000	No./100mL
Oil and Grease[3]	--	--	--	10	mg/L
Total Residual Chlorine	--	--	--	0.019	mg/L
pH	--	--	6.6	8.3	SU
Flow Rate	Monitored, but no limit.				MGD
Water Temperature	Monitored, but no limit.				°C
Ammonia-Nitrogen (as N)	Monitored, but no limit due to high flows in Missouri River.				mg/L
Total Hardness (as $CaCO_3$)	Monitored quarterly, but no limit.				mg/L
Molybdenum	Monitored quarterly, but no limit.				µg/L
Acute Whole Effluent Toxicity (WET)	Monitored quarterly, but no limit.				Pass/Fail

[1]85% removal is also required based on the monthly arithmetic means of the influent and effluent concentrations.
[2]Fecal coliform limits are being phased out and replaced with *E. coli* limits.
[3]Visual presence is also monitored.

Sampling is required prior to discharges as specified to demonstrate that the effluent will meet the discharge limits. The Acute Whole Effluent Toxicity (WET) is required to be tested. Acute Toxicity is defined as based on mortality rate of 50 percent or more of *Ceriodaphnia dubia* or fathead minnow larvae occurring when exposed to the effluent. Such events can occur if high ammonia-nitrogen levels or other toxics are present.

The Mobridge WWTP is subject to more stringent than typical pH discharge limits. Typical pH limits range from 6.0 to 9.0 s.u. while Table 4-1 demonstrates Mobridge as having a limit range of 6.6 to 8.3 s.u. Per discussions with the SD DENR, the more stringent pH limits are based on the state's prior water quality standards for permanent coldwater fish life propagation waters. Current South Dakota pH standards are 6.5 to 9.0 s.u., but to prevent backsliding the permitted discharge pH has remained the same for the WWTP. Backsliding is only permitted for limited cases by the Clean Water Act and because the plant has been able to consistently meet its permit requirements (only one pH violation of has been recorded since July 2000), the discharge limits have been deemed as acceptable at this time despite the stringency.

4.2 Future Permit Characteristics

The South Dakota Department of Environment and Natural Resources (SD DENR) was contacted to determine if any future changes in effluent parameters are on the horizon. The SD DENR response detailing expectations for the plant is located in Appendix A. The Environmental Protection Agency (EPA) has been developing guidelines for implementation of nutrient controls, primarily phosphorous. Implementation of nutrient controls is continuing to become a larger topic of conversation in the state of South Dakota; however, implementation of nutrient controls for the Mobridge WWTP is not expected for the next permitting cycle. Total Phosphorus and Total Nitrogen monitoring will be added to the new permit, but no effluent limits will be attached. It is anticipated that ammonia-nitrogen and phosphorus limits will be added in the future, though they are again parameters that will not be present in the next permitting cycle. Acute Whole Effluent Toxicity is currently measured on a Pass/Fail basis. SD DENR is moving toward reporting in Acute Toxic Units (TUa) and will require Mobridge to report both on the next permit cycle. Chronic WET limits may also be added if needed. All other limits outlined by Table 4-1 will not be subject to change in the next permitting cycle.

The existing facility would require additional modifications if nutrient standards were applied. Future effluent limits can be difficult to predict and combined with knowledge that no such limits will exist under the next permit, it is not a prudent use of resources to design a system around those standards.

5.0 DISCUSSION OF TREATMENT ALTERNATIVES

5.1 Treatment Alternative Development and Objectives

The primary objectives of the treatment alternatives are to provide a treatment system to accommodate current/projected design populations, rehabilitate equipment and/or facilities as necessary, and reuse as much existing infrastructure as possible. Four major alternatives were developed and are presented below.

- Alternative I A – Addition of a new primary clarifier, new biofilter pump station, rehabilitation of existing primary clarifier, and chlorine disinfection rehabilitation, expansion, and improvements.
- Alternative I B – Addition of a new primary clarifier, new biofilter pump station, and ultraviolet (UV) disinfection installation.
- Alternative II A – New microscreens, new microscreens building, and new biofilter pump station, and chlorine disinfection rehabilitation, expansion, and improvements.
- Alternative II B – New microscreens, new microscreens building, new biofilter pump station, and upgrade ultraviolet (UV) disinfection installation.
- Alternative III – No action.
- Additional Alternative Options
    - An Instrumentation and Controls Upgrade option can be added to each of the presented alternatives.
    - Rehabilitation of the existing biofilter lift station if a new biofilter pump station is not constructed. This option would be pursued to keep the existing biofilter lift station in acceptable condition if it will continue to see use as the primary biofilter lift station.
    - New harness rails to two wet/drywell lift stations.
    - Rehabilitation of the existing primary clarifier may be completed in each of the presented alternatives. Alternative I options include rehabilitation and continuing to use as a primary clarifier. Alternative II options would be dependent on City needs. If an alternative II option is selected, the existing primary clarifier could be repurposed into additional sludge storage, and the existing sludge pond could be repurposed into an equalization basin.

Exhibits 3 through 6 detail these proposed alternatives by including approximate locations for new structures, piping, etc. for base and optional improvements.

5.2 Alternative I A - New Primary Clarifier, New Biofilter Pump Station, Upgrade and Expand Chlorine Disinfection

Alternative I A is intended to be an alternative suggesting the construction and installation of a new primary clarifier to the north of the existing primary clarifier structure. Per communications with and documents detailing their recommendations, the SD DENR will not allow for major construction or rehabilitation on the existing primary clarifier to occur without the addition of full redundancy for the process. As a result of this requirement, an entirely new primary clarifier is

proposed. By building a new clarifier and keeping the existing clarifier, the redundancy requirement for the system is met while upgrading the overall infrastructure for the unit process.

The existing primary clarifier is hydraulically sufficient for projected flows and loads. As a result and in an attempt to keep the system symmetrical in nature, the new primary clarifier would be the same footprint – a clarifier with 35 foot diameter – but will have an increased sidewater depth of ten feet to meet SD DENR and Ten States Standards recommendations and provide sufficient distance between the sludge blanket and overflow weir. The structure would be approximately 20 feet in overall height (including walls and cover). The new primary clarifier would be covered to reduce odor and keep the system contained. New equipment, electrical, and controls would need to be provided for the clarifier. Sitework including grading and finishing would need to occur to bury the clarifier to the required depth. The primary clarifier would be designed to reduce organic loading by roughly 30 percent.

To provide full primary clarifier redundancy, the existing primary clarifier would be rehabilitated after construction of the new primary clarifier. The existing primary clarifier rehabilitation would include demolition of the existing equipment and collection trough, rehabilitation and repair of existing concrete, equipment and collection trough replacement, and painting. This work can be scheduled by the City at a time that meets their treatment and redundancy needs. For example, this work could be conducted immediately after construction of the new clarifier, or at a later date when the useful life of the existing primary clarifier is completely exhausted. Although this existing clarifier is shallower than the design recommendations provided in Ten States Standards, this clarifier has successfully served the City for decades. Based on this operational knowledge, we believe the existing clarifier depth is not deficient and this clarifier can serve as full redundancy to a new, deeper primary clarifier.

The installation of a new primary clarifier may also require the installation of a new pump station due to different head and elevation conditions. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the City can allocate the dollars to the additional alternative options if so desired. If a new pump station is not constructed, the City should allocate funds toward upgrading the existing biofilter pump station. If seeing continued use as the primary lift station for the WWTP biofilter, it is important that this structure and all components be kept in acceptable working condition.

The pumps will be sized to handle peak hourly influent flow to the WWTP as well as a possible recycle flow from the biofilter effluent. A maximum future recycle rate of 200 percent of average daily flow is assumed based on various sources. This recirculation rate can vary greatly depending on the intended results (preventing drying out of media, attempting nutrient removal, etc.) and the selected percent return is based on the most extreme scenario. The pumps will be designed for an overall capacity of 2,100 gpm at 20 feet of head based on this design, relevant assumptions regarding new piping layout, and the requirement for full redundancy. The pumps will be approximately 20 HP and will be variable speed to provide consistent flow through the plant processes.

Alternative I A also calls for an upgrade of the existing chlorine disinfection system. The system upgrade would be the complete replacement of the disinfection dosing equipment including both the chlorine and sulfur dioxide dosing systems. The chlorine contact basin would be doubled in size to meet Ten States Standards recommendations for required contact times. Additionally, piping modifications, valving, and sitework to add a drain line to the existing chlorine contact basin may also be considered.

This alternative could also include the options outlined in Section 5.6. The following is a summary of the major features of Alternative I A.

New Primary Clarifier
A new primary clarifier would be installed to provide for full system redundancy. The new clarifier would match the footprint of the existing primary clarifier as it has been concluded to be hydraulically sufficient at all flows and loads.

New Biofilter Pump Station and Pumps
A new biofilter pump station may be required due to head and elevation conditions not allowing for flow by gravity to the existing wetwell (assumed at this point) and biofilter pump station. Two pumps (one duty, one standby) with 2,100 gpm capacity each would be installed in the structure to provide for full system redundancy at peak hourly flows with a high trickling filter recycle rate. If a new biofilter lift station is not necessary, the optional improvement outlined in Section 5.6 regarding existing biofilter rehabilitation is recommended as necessary.

Existing Primary Clarifier Rehabilitation
The existing primary clarifier would be rehabilitated based on the City's treatment and redundancy needs.

Rehabilitation and Expansion of Existing Chlorine Disinfection and New Chlorine Contact Chamber Drain Line
The primary chlorine and sulfur dioxide feed and dosing equipment would be replaced under this alternative. The existing contact basin would be doubled in volume. Valves and piping would be added and/or modified to install a drain line on the existing chlorine contact basin.

5.3 Alternative I B – New Primary Clarifier, New Biofilter Pump Station, New Ultraviolet Disinfection System

Alternative I B is intended to be an alternative suggesting the construction and installation of a new primary clarifier to the north of the existing primary clarifier structure. Per communications with and documents detailing their recommendations, the SD DENR will not allow for major construction or rehabilitation on the existing primary clarifier to occur without the addition of full redundancy for the process. As a result of this requirement, an entirely new primary clarifier is proposed. By building a new clarifier and keeping the existing clarifier, the redundancy requirement for the system is met while upgrading the overall infrastructure for the unit process.

The existing primary clarifier is hydraulically sufficient for projected flows and loads. As a result of this fact and to attempt to keep the system symmetrical in nature, the new primary clarifier would be the same footprint – a clarifier with 35 foot diameter – but will have an increased sidewater depth of ten feet to meet SD DENR and Ten States Standards recommendations and provide sufficient distance between the sludge blanket and overflow weir. The structure would be approximately 20 feet in overall height. The new primary clarifier would be covered to reduce odor and keep the system contained. New equipment, electrical, and controls would need to be provided for the clarifier. Sitework including grading and finishing would need to occur to bury the clarifier to the required depth. The primary clarifier would be designed to reduce organic loading by roughly 30 percent.

To provide full primary clarifier redundancy, the existing primary clarifier would be rehabilitated after construction of the new primary clarifier. The existing primary clarifier rehabilitation would include demolition of the existing equipment and collection trough, rehabilitation and repair of existing concrete, equipment and collection trough replacement, and painting. This work can be scheduled by the City at a time that meets their treatment and redundancy needs. For example, this work could be conducted immediately after construction of the new clarifier, or at a later date when the useful life of the existing primary clarifier is completely exhausted. Although this existing clarifier is shallower than the design recommendations provided in Ten States Standards, this clarifier has successfully served the City for decades. Based on this operational knowledge, we believe the existing clarifier depth is not deficient and this clarifier can serve as full redundancy to a new, deeper primary clarifier.

The installation of a new primary clarifier may also require the installation of a new pump station due to different head and elevation conditions. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the City can allocate the dollars to the additional alternative options if so desired. If a new pump station is not constructed, the City should allocate funds toward upgrading the existing biofilter pump station.

The pumps will be sized to handle peak hourly influent flow to the WWTP as well as a possible recycle flow from the biofilter effluent. A maximum future recycle rate of 200 percent of average daily flow is assumed based on various sources. This recirculation rate can vary greatly depending on the intended results (preventing drying out of media, attempting nutrient removal, etc.) and the selected percent return is based on the most extreme scenario. The pumps will be designed for an overall capacity of 2,100 gpm at 20 feet of head based on this design, relevant assumptions regarding new piping layout, and the requirement for full redundancy. The pumps will be approximately 20 HP and will be variable speed to provide consistent flow through the plant processes. One possible alternative for the City to allocate funds toward would be upgrading the existing biofilter pump station. If seeing continued use as the primary lift station for the WWTP biofilter, it is important that this structure and all components be kept in acceptable working condition.

Alternative I B also calls for the conversion of the existing chlorine contact basin into an ultraviolet (UV) disinfection system. UV disinfection systems work through the inactivation of microbiological contaminants using UV light prior to discharge into the receiving stream. UV disinfection is a more capital and maintenance intensive alternative than chlorine disinfection; however, the use of UV disinfection is preferred as it does not require the removal of residual chlorine or the use of hazardous chemicals. For a complete installation of a new UV system, the existing channel would need to be retrofitted to accommodate the proposed UV disinfection system. The channel width is currently 3'-0" per record drawings while the UV system modules require 12" with four modules per bank. Channel width would need to be reduced, either by filling with grout or with a fiberglass insert, to accommodate the UV equipment. The proposed UV system requires a minimum length of 26 feet – the current disinfection contact basin measures 30'-0" in length providing ample room for installation. The retrofitted channel would ideally include one channel for bypass and another channel to house the UV disinfection banks. Two banks would be installed with a total of 48 lamps between the two banks and provide for complete disinfection of peak hourly flows. Complete electrical and controls would also be provided for the new UV disinfection system.

This alternative could also include the options outlined in Section 5.6. The following is a summary of the major features of Alternative I B:

New Primary Clarifier
A new primary clarifier would be installed to provide for full system redundancy. The new clarifier would match the footprint of the existing primary clarifier as it has been concluded to be hydraulically sufficient at all flows and loads.

New Biofilter Pump Station and Pumps
A new biofilter pump station may be required due to head and elevation conditions not allowing for flow by gravity to the existing wetwell (assumed at this point) and biofilter pump station. Two pumps (one duty, one standby) with 2,100 gpm capacity each would be installed in the structure to provide for full system redundancy at peak hourly flows with a high trickling filter recycle rate. If a new biofilter lift station is not necessary, the optional improvement outlined in Section 5.6 regarding existing biofilter rehabilitation is recommended as necessary.

Existing Primary Clarifier Rehabilitation
The existing primary clarifier would be rehabilitated based on the City's treatment and redundancy needs.

New UV Disinfection System
A new UV disinfection system would be installed. The system would be composed of two UV banks to be installed in a retrofitted disinfection contact basin.

5.4 Alternative II A – New Microscreens, New Microscreens Building, Upgrade and Expand Chlorine Disinfection

Alternative II A is intended to be an alternative to rehabilitating the existing primary clarifier and/or constructing a new primary clarifier. Per communications with and documents detailing

their recommendations, the SD DENR will not allow for major construction on the existing primary clarifier to occur without the addition of full redundancy for the process. Microscreens are a proposed alternative to completely remove the need for a primary clarifier. Flow would be routed from the Preliminary Treatment Building to a new building housing two new microscreens to help in reducing BOD and TSS. Microscreens would be sized for full redundancy to fulfill SD DENR's requirement for process system redundancy. The microscreens are estimated to reduce BOD by roughly 30 percent, equivalent to existing primary clarifier performance.

The installation of the microscreens would require numerous other additions to be made at the WWTP. The microscreens are large and would not fit into the existing Preliminary Treatment Building. A new 40'x30' building would be required to provide sufficient room for the microscreens and all maintenance space requirements. The building would be required to be sixteen feet in height to provide sufficient clearances for removal of the microscreens and associated parts.

The installation of microscreens may also require the installation of a new pump station due to different head and elevation conditions caused by the insertion of an additional treatment process. Microscreens can create up to two feet of headloss. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the City can allocate the dollars to the additional alternative options if desired. If a new pump station is not constructed, the City should allocate funds toward upgrading the existing biofilter pump station. If seeing continued use as the primary lift station for the WWTP biofilter, it is important that this structure and all components be kept in acceptable working condition.

The pumps will be sized to handle peak hourly influent flow to the WWTP as well as a possible recycle flow from the biofilter effluent. A maximum future recycle rate of 200 percent of average daily flow is assumed based on various sources. This recirculation rate can vary greatly depending on the intended results (preventing drying out of media, attempting nutrient removal, etc.) and the selected percent return is based on the most extreme scenario. The pumps will be designed for an overall capacity of 2,100 gpm at 20 feet of head based on this design, relevant assumptions regarding new piping layout, and the requirement for full redundancy. The pumps will be approximately 20 HP and will be variable speed to provide consistent flow through the plant processes.

Because primary treatment equipment redundancy would be met with the microscreens, the City would not be obligated to rehabilitate the existing primary clarifier. The City could elect to use the primary clarifier structure for optional upgrades, such as converting the structure into a biosolids storage tank. This would allow the City to also convert the existing sludge storage ponds into flow equalization basins if so desired.

Alternative II A also calls for an upgrade of the existing chlorine disinfection system. The system upgrade would be the complete replacement of the disinfection dosing equipment including both the chlorine and sulfur dioxide dosing systems. The chlorine contact basin would be doubled in size to meet Ten States Standards recommendations for required contact times. Additionally,

piping modifications, valving, and sitework to add a drain line to the existing chlorine contact basin may also be considered.

This alternative could also include the options outlined in Section 5.6. The following is a summary of the major features of Alternative II A:

New Microscreens and Microscreens Building
Two new microscreens sized for peak hourly capacity will be installed. Microscreen manufacturers include Salsnes and Blue Water Technologies. The filters will provide full system redundancy and act as a primary clarifier replacement by removing up to 30 percent of organic loading. The new microscreens will require housing in a new 40'x30'x16' structure sized to accommodate all units, appurtenances, and maintenance space requirements.

New Biofilter Pump Station and Pumps
A new biofilter pump station may be required due to head and elevation conditions not allowing for flow by gravity to the existing wetwell (assumed at this point) and biofilter pump station. Two pumps (one duty, one standby) with 2,100 gpm capacity each would be installed in the structure to provide for full system redundancy at peak hourly flows with a high trickling filter recycle rate. If a new biofilter lift station is not necessary, the optional improvement outlined in Section 5.6 regarding existing biofilter rehabilitation is recommended as necessary.

Rehabilitation and Expansion of Existing Chlorine Disinfection and New Chlorine Contact Chamber Drain Line
The primary chlorine and sulfur dioxide feed and dosing equipment would be replaced under this alternative. The existing contact basin would be doubled in volume. Valves and piping would be added and/or modified to install a drain line on the existing chlorine contact basin.

5.5 Alternative II B – New Microscreens, New Microscreens Building, New Ultraviolet Disinfection System

Alternative II B is intended to be an alternative to rehabilitating the existing primary clarifier and/or constructing a new primary clarifier. Per communications with and documents detailing their recommendations, the SD DENR will not allow for major construction on the existing primary clarifier to occur without the addition of full redundancy for the process. Microscreens are a proposed alternative to completely remove the need for a primary clarifier. Flow would be routed from the Preliminary Treatment Building to a new building housing two new microscreens to help in reducing BOD and TSS. Microscreens would be sized for full redundancy to fulfill SD DENR's requirement for process system redundancy. The microscreens are estimated to reduce BOD by roughly 30 percent, equivalent to existing primary clarifier performance.

The installation of the microscreens would require numerous other additions to be made at the WWTP. The microscreens are large and would not fit into the existing Preliminary Treatment Building. A new 40'x30' building would be required to provide sufficient room for the microscreens and all maintenance space requirements. The building would be required to be sixteen feet in height to provide sufficient clearances for removal of the microscreens and associated parts.

The installation of microscreens may also require the installation of a new pump station due to different head and elevation conditions caused by the insertion of an additional treatment process. Microscreens can create up to two feet of headloss. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the City can allocate the dollars to the additional alternative options if desired. If a new pump station is not constructed, the City should allocate funds toward upgrading the existing biofilter pump station. If seeing continued use as the primary lift station for the WWTP biofilter, it is important that this structure and all components be kept in acceptable working condition.

The pumps will be sized to handle peak hourly influent flow to the WWTP as well as a possible recycle flow from the biofilter effluent. A maximum future recycle rate of 200 percent of average daily flow is assumed based on various sources. This recirculation rate can vary greatly depending on the intended results (preventing drying out of media, attempting nutrient removal, etc.) and the selected percent return is based on the most extreme scenario. The pumps will be designed for an overall capacity of 2,100 gpm at 20 feet of head based on this design, relevant assumptions regarding new piping layout, and the requirement for full redundancy. The pumps will be approximately 20 HP and will be variable speed to provide consistent flow through the plant processes.

Because primary treatment equipment redundancy would be met with the microscreens, the City would not be obligated to rehabilitate the existing primary clarifier. The City could elect to use the primary clarifier structure for optional upgrades, such as converting the structure into a biosolids storage tank. This would allow the City to also convert the existing sludge storage ponds into flow equalization basins if so desired.

Alternative II B also calls for the conversion of the existing chlorine contact basin into an ultraviolet (UV) disinfection system. UV disinfection systems work through the inactivation of microbiological contaminants using UV light prior to discharge into the receiving stream. UV disinfection is a more capital and maintenance intensive alternative than chlorine disinfection; however, the use of UV disinfection is preferred as it does not require the removal of residual chlorine or the use of hazardous chemicals. For a complete installation of a new UV system, the existing channel would need to be retrofitted to accommodate the proposed UV disinfection system. The channel width is currently 3'-0" per record drawings while the UV system modules require 12" with four modules per bank. Channel width would need to be reduced, either by filling with grout or with a fiberglass insert, to accommodate the UV equipment. The proposed UV system requires a minimum length of 26 feet – the current disinfection contact basin measures 30'-0" in length providing ample room for installation. The retrofitted channel would ideally include one channel for bypass and another channel to house the UV disinfection banks. Two banks would be installed with a total of 48 lamps between the two banks and provide for complete disinfection of peak hourly flows. Complete electrical and controls would also be provided for the new UV disinfection system.

This alternative could also include the options outlined in Section 5.6. The following is a summary of the major features of Alternative II B:

New Microscreens and Microscreens Building
Two new microscreens sized for peak hourly capacity will be installed. Microscreen manufacturers include Salsnes and Blue Water Technologies. The filters will provide full system redundancy and act as a primary clarifier replacement by removing up to 30 percent of organic loading. The new microscreens will require housing in a new 40'x30'x16' structure sized to accommodate all units, appurtenances, and maintenance space requirements.

New Biofilter Pump Station and Pumps
A new biofilter pump station may be required due to head and elevation conditions not allowing for flow by gravity to the existing wetwell (assumed at this point) and biofilter pump station. Two pumps (one duty, one standby) with 2,100 gpm capacity each would be installed in the structure to provide for full system redundancy at peak hourly flows with a high trickling filter recycle rate. If a new biofilter lift station is not necessary, the optional improvement outlined in Section 5.6 regarding existing biofilter rehabilitation is recommended as necessary.

New UV Disinfection System
A new UV disinfection system would be installed. The system would be composed of two UV banks to be installed in a retrofitted disinfection contact basin.

5.6 Alternative III – No Action

The City may also choose to pursue the "No Action" alternative in which they make no changes and continue operations. The current WWTP is not well suited to this alternative due to the deterioration of critical infrastructure. Should the City decide to pursue Alternative III and not take any action, the deterioration of the primary clarifier infrastructure could very well lead to the failure of the unit process. Failure of the primary clarifier would lead to an overloading of the biofilter system and possible NPDES permit violations that could last until design and construction of a new primary clarifier or an emergency rehabilitation of the existing primary clarifier could be completed. The City could potentially be facing an overly expensive project as a result. Based on these findings, Alternative III – No Action is not a feasible alternative.

5.7 Other Options

Instrumentation and Controls Upgrade
An instrumentation and controls upgrade option may be added to each of the alternative options presented in this section. The upgrade would provide control panels for major process equipment at the WWTP, a redundant fiber optic loop, SCADA computers, remote access, miscellaneous upgrades, and programming services. These upgrades would create an easier to run, more efficient plant by allowing for better control and tracking of the process equipment. The increase in efficiency has the potential to reduce operational costs and decrease the likelihood of permit violations by providing the operators with additional monitoring and control abilities.

Existing Biofilter Lift Station Rehabilitation

The rehabilitation would include work done by City staff (painting, coating, etc.) to bring the structure and components into acceptable condition for their continued use as the primary lift station for the biofilter. This option would be considered necessary if the installation of a new pump station for the biofilters is not necessary.

Harness Rails for Lift Station

For all alternatives presented a rehabilitation of two existing lift stations can be considered including the outfitting of the station with new harness rails.

Existing Primary Clarifier Rehabilitation

For Alternative II options, the primary clarifier could be retrofitted into a biosolids storage tank. The retrofit of the existing clarifier would include demolition of the piping, equipment, and collection trough. Existing concrete would be rehabilitated and a high performance coating would be applied. An aeration system and air piping would be installed, along with sludge transfer piping.

Convert Existing Sludge Storage Lagoon to Equalization Basin

If the City elects to retrofit the existing primary clarifier as part of the Alternative II option, they could then also repurpose the existing sludge storage lagoon into a flow equalization basin. The existing lagoon would be excavated and graded. Piping modifications and a new control structure would be installed, along with new mixing equipment. New pumping and electrical/controls equipment would also be installed. The equalization basin would level out peak flows and allow the facility to operate at near steady-state conditions, which are optimum for wastewater treatment.

6.0 OPINIONS OF PROBABLE COST

6.1 General

The construction cost and operation and maintenance cost estimates presented are based on 2014 dollars. Detailed financial analysis should provide an inflation factor, which is checked and adjusted annually through the life of the facility. The conceptual opinion of probable cost was developed based on previous project data and RS Means cost estimating manuals. Conceptual costs are as of May 2014. This cost opinion represents a Class 4 Estimate based on the definitions of the Association for Advancement of Cost Engineering (AACE) International. This level of cost opinion is appropriate for planning level evaluations made with incomplete information. The cost opinion at this level of engineering is considered to have an accuracy range of +50/-30 percent.

6.2 Capital Costs

The alternatives presented do not require the procurement of any additional land. Engineering (report, design, bidding, and construction) and legal/administrative were assumed to be 25 percent of construction costs. Construction contingency was assumed to be 20 percent. A summary of probable construction and capital costs for the various alternatives is presented below in Table 6-1. The Opinion of Probable Project Capital Cost for the alternatives presents the most basic financial and process requirements to complete each alternative. Optional improvements identify additional needs for the WWTP that may or may not be selected by the City in addition to base alternatives. AE2S recommends if a new biofilter lift station is not necessary that the Optional Improvement to rehabilitate the existing biofilter lift station become required. These optional improvements are not critical to system operation, but can provide for improvements should the City have the capital and desire to do so. More detailed breakdowns of the costs of each alternative are presented in Tables 6-2 through 6-5.

The requirement for full redundancy has led to increase in costs versus previous cost estimates. For example, instead of simply rehabilitating the primary clarifier or installing a brand new primary clarifier, both items are now required to be completed to meet the standards and recommendations of permitting agencies. Additionally, the requirement of a new biofilter lift station was not previously foreseen, again due to the redundancy requirement. This new biofilter lift station has been included in the estimate, though it may not be required. A current bid premium factor of 12 percent has also been included in the cost estimate due to knowledge regarding the current construction climate in the region.

Table 6-1 – WWTP Summary of Probable Project Capital Costs

Description	Opinion of Probable Project Capital Cost	Opinion of Probable Project Capital Cost w/ Current Bid Premium
Alternatives		
Alternative I A – New Primary Clarifier, Rehabilitate Existing Primary Clarifier, New Biofilter Pump Station, Rehabilitate and Expand Chlorine Disinfection System, New Disinfection Basin Drain	$1,801,200	$2,017,400
Alternative I B – New Primary Clarifier, Rehabilitate Existing Primary Clarifier, New Biofilter Pump Station, New UV Disinfection System, New Disinfection Basin Drain	$1,823,300	$2,042,100
Alternative II A – New Microscreens and Microscreens Building, New Biofilter Pump Station, Rehabilitate and Expand Chlorine Disinfection System, New Disinfection Basin Drain	$1,809,600	$2,026,800
Alternative II B – New Microscreens and Microscreens Building, New Biofilter Pump Station, New UV Disinfection System, New Disinfection Basin Drain	$1,831,700	$2,051,600
Optional Improvements		
Instrumentation and Controls Upgrade	$568,300	$636,500
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500	$110,400
Harness Rails Upgrade	$6,400	$7,200
Rehabilitate Existing Primary Clarifier for Sludge Storage (Alt II Only)	$217,500	$435,500
Convert Sludge Pond to Equalization Basin (Alt II Only)	$226,000	$253,200

Table 6-2 – Alternative I A – Opinion of Probable Project Capital Costs

Opinion of Probable Construction Costs	
Alternative I A Base Costs	
Description	**Cost**
Primary Treatment	**$1,107,900**
New Primary Clarifier	$597,600
Rehabilitate Existing Primary Clarifier for Redundancy	$306,800
New Biofilter Lift Station	$203,500
Disinfection	**$134,300**
Chlorine Disinfection Rehabilitation	$122,800
Disinfection Basin Drain	$11,500
Opinion of Probable Construction Costs	**$1,242,200**
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$559,000
Alt I A Opinion of Probable Project Capital Base Costs	**$1,801,200**
Alt I A Opinion of Probable Project Capital Base Costs w/ Current Bid Premium*	**$2,017,400**
Alternative I A Optional Improvements	
Description	**Cost**
Instrumentation and Controls Upgrade	$391,900
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$176,400
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs	**$568,300**
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$636,500**
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500
Engineering (20%), Legal (5%), and Construction (20%) Contingencies (assumed self performed)	$0
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs	**$98,500**
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$110,400**
Harness Rail Upgrade	$4,400
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$2,000
Harness Rail Upgrade Opinion of Probable Project Capital Costs	**$6,400**
Harness Rail Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$7,200**
*Current Bid Premium = 12%	

Table 6-3 – Alternative I B – Opinion of Probable Project Capital Costs

Opinion of Probable Construction Costs	
Alternative I B Base Costs	
Description	**Cost**
Primary Treatment	**$1,107,900**
New Primary Clarifier	$597,600
Rehabilitate Existing Primary Clarifier for Redundancy	$306,800
New Biofilter Lift Station	$203,500
Disinfection	**$149,500**
New Ultraviolet Disinfection System	$138,000
Disinfection Basin Drain	$11,500
Opinion of Probable Construction Costs	**$1,257,400**
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$565,900
Alt I B Opinion of Probable Project Capital Base Costs	**$1,823,300**
Alt I B Opinion of Probable Project Capital Base Costs w/ Current Bid Premium*	**$2,042,100**
Alternative I B Optional Improvements	
Description	**Cost**
Instrumentation and Controls Upgrade	$391,900
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$176,400
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs	**$568,300**
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$636,500**
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$0
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs	**$98,500**
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$110,400**
Harness Rail Upgrade	$4,400
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$2,000
Harness Rail Upgrade Opinion of Probable Project Capital Costs	**$6,400**
Harness Rail Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$7,200**
*Current Bid Premium = 12%	

Table 6-4 – Alternative II A – Opinion of Probable Project Capital Costs

Opinion of Probable Construction Costs	
Alternative II A Base Costs	
Description	**Cost**
Primary Treatment	**$1,113,700**
New Microscreens and Microscreens Building	$910,200
New Biofilter Lift Station	$203,500
Disinfection	**$134,300**
Chlorine Disinfection Rehabilitation	$122,800
Disinfection Basin Drain	$11,500
Opinion of Probable Construction Costs	**$1,248,000**
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$561,600
Alt II A Opinion of Probable Project Capital Base Costs	**$1,809,600**
Alt II A Opinion of Probable Project Capital Base Costs w/ Current Bid Premium*	**$2,026,800**
Alternative II A Optional Improvements	
Description	**Cost**
Instrumentation and Controls Upgrade	$391,900
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$176,400
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs	**$568,300**
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$636,500**
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$0
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs	**$98,500**
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$110,400**
Harness Rail Upgrade	$4,400
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$2,000
Harness Rail Upgrade Opinion of Probable Project Capital Costs	**$6,400**
Harness Rail Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$7,200**
Rehabilitate Existing Primary Clarifier for Sludge Storage (Alternative II Only)	$268,100
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$120,700
Rehabilitate Existing Primary Clarifier for Sludge Storage Opinion of Probable Project Capital Costs	**$388,800**
Rehabilitate Existing Primary Clarifier for Sludge Storage Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$435,500**
Convert Sludge Pond to Equalization Basin (Alternative II Only)	$155,800
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$70,200
Convert Sludge Pond to Equalization Basin Opinion of Probable Project Capital Costs	**$226,000**
Convert Sludge Pond to Equalization Basin Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$253,200**
*Current Bid Premium = 12%	

Table 6-5 – Alternative II B – Opinion of Probable Project Capital Costs

Opinion of Probable Construction Costs	
Alternative II B Base Costs	
Description	**Cost**
Primary Treatment	**$1,113,700**
New Microscreens and Microscreens Building	$910,200
New Biofilter Lift Station	$203,500
Disinfection	**$149,500**
New Ultraviolet Disinfection System	$138,000
Disinfection Basin Drain	$11,500
Opinion of Probable Construction Costs	**$1,263,200**
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$568,500
Alt II B Opinion of Probable Project Capital Base Costs	**$1,831,700**
Alt II B Opinion of Probable Project Capital Base Costs w/ Current Bid Premium*	**$2,051,600**
Alternative II B Optional Improvements	
Description	**Cost**
Instrumentation and Controls Upgrade	$391,900
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$176,400
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs	**$568,300**
Instrumentation and Controls Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$636,500**
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	$98,500
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$0
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs	**$98,500**
Biofilter Lift Station Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$110,400**
Harness Rail Upgrade	$4,400
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$2,000
Harness Rail Upgrade Opinion of Probable Project Capital Costs	**$6,400**
Harness Rail Upgrade Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$7,200**
Rehabilitate Existing Primary Clarifier for Sludge Storage (Alternative II Only)	$268,100
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$120,700
Rehabilitate Existing Primary Clarifier for Sludge Storage Opinion of Probable Project Capital Costs	**$388,800**
Rehabilitate Existing Primary Clarifier for Sludge Storage Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$435,500**
Convert Sludge Pond to Equalization Basin (Alternative II Only)	$155,800
Engineering (20%), Legal (5%), and Construction (20%) Contingencies	$70,200
Convert Sludge Pond to Equalization Basin Opinion of Probable Project Capital Costs	**$226,000**
Convert Sludge Pond to Equalization Basin Opinion of Probable Project Capital Costs w/ Current Bid Premium*	**$253,200**
*Current Bid Premium = 12%	

6.3 Alternative Operations and Maintenance (O&M)

O&M costs are a significant portion of the total annual cost of wastewater treatment. The City of Mobridge had an annual budget of $251,000 for wastewater O&M (2010 budget). The proposed Alternative improvements for the Mobridge WWTP result in minimal or no new O&M costs to the system due to the rehabilitation of existing equipment with identical or substantially similar equipment. For example, Alternative I A provides for a new primary clarifier. The new primary clarifier will not incur new, additional O&M costs as the existing clarifier will be providing redundancy and will no longer incur all previous O&M costs due to reduced use. The addition of a new 1/2 horsepower clarifier drive will add minimal energy costs. Other equipment, such as the new biofilter pump station pumps and in-kind replacement of the chlorination equipment, is significantly similar to the existing systems they will be replacing so that the City will not incur additional O&M cost. O&M costs for the installation of a UV system may drop due to UV disinfection systems having a reduced O&M cost as compared to chlorination. With all proposed alternatives the City will not require the addition of new staff at the plant, thus, incurring no new labor costs.

There are five items that will impact the current WWTP O&M budget if they are selected. The cost impacts of these items on each alternative is detailed in Table 6-6. These items are listed below:

- Microscreens: The microscreens would represent additional mechanical equipment at the WWTP. Although the microscreens would replace the existing primary clarifier, they are more equipment intensive and will require more equipment maintenance. That cost is detailed in Table 6-6.
- Microscreen building: New microscreens would be housed in a new building north of the existing primary clarifier. This new building would require some upkeep, as well as new heating costs in the winter.
- Sludge ponds to EQ basins: Converting the sludge ponds to equalization basins would require additional pumping and mixing. This equipment would require periodic maintenance, as well as power costs to operate the equipment.
- Existing primary clarifier to sludge storage: Converting the existing primary clarifier to sludge storage may require the addition of new aeration blower equipment. The blowers represent additional mechanical equipment at the plant requiring equipment maintenance and power costs.
- UV disinfection: Conversion of the existing chlorination system to UV disinfection will lower maintenance and operations costs, though O&M costs will still be incurred.

New O&M costs for the alternatives are presented in the Table 6-6. The new O&M costs are only for items that would be in addition to the existing O&M cost. The City currently has a budget of $251,000 (2010 report) for O&M. The "Item" column details the specific reason for the new O&M costs. The O&M costs presented are for the end of each appropriate design life; however, they are based on today's dollars. The O&M costs presented are indexed for the end of each appropriate design life; however, they are based on 2014 dollars. Annual equipment maintenance costs were assumed to be 0.5 percent of the estimated equipment cost.

Table 6-6 – WWTP Opinion of Probable New O&M Costs

Description	Item	Opinion of Probable New O&M Cost
Base Alternatives		
Alternative I A – New Primary Clarifier, Rehabilitate Existing Primary Clarifier, New Biofilter Pump Station, Rehabilitate and Expand Chlorine Disinfection System, New Disinfection Basin Drain	--	$0
Alternative I B – New Primary Clarifier, Rehabilitate Existing Primary Clarifier, New Biofilter Pump Station, New UV Disinfection System, New Disinfection Basin Drain	UV Disinfection	$-3,800
Alternative II A – New Microscreens and Microscreens Building, New Biofilter Pump Station, Rehabilitate and Expand Chlorine Disinfection System, New Disinfection Basin Drain	Microscreens, Microscreen Building	$26,000
Alternative II B – New Microscreens and Microscreens Building, New Biofilter Pump Station, New UV Disinfection System, New Disinfection Basin Drain	Microscreens, Microscreen Building, UV Disinfection	$22,200
Optional Improvements		
Instrumentation and Controls Upgrade	--	$0
Biofilter Lift Station Rehabilitation (No New Biofilter Lift Station)	--	$0
Harness Rails Upgrade	--	$0
Rehabilitate Existing Primary Clarifier for Sludge Storage (Alt II Only)	Aeration Equipment	$5,500
Convert Sludge Pond to Equalization Basin (Alt II Only)	Pump/Mixing Equipment	$5,800

6.4 Net Present Worth Cost Comparison of Chlorine Versus UV Disinfection

One alternative process that warrants further consideration is evaluating the existing chlorine disinfection system versus ultraviolet disinfection. As previously discussed, the City is considering replacing its existing gas chlorination/dechlorination system with an ultraviolet light disinfection system. To enable the City to make a true "life cycle" cost based decision, a net present worth analysis of the two alternatives is presented in Table 6-7. The capital costs in Table 6-7 include engineering and contingency costs. The net present worth analysis considers the up-front capital cost, periodic equipment replacement costs, such as new UV bulbs or replacement of chlorine feed equipment, and the long-term operational costs, such as electricity and chemical purchase costs. The WWTP's NPDES permit currently contains a limit for *E. coli* from May 1 to

September 30. However, the permit also contains a year-round limit for Total Coliform due to the fact that effluent is discharged into a receiving water that is used as a drinking water source. It is understood through conversations with plant personnel that disinfection is continued year-round to meet the conditions of their permit. The analysis therefore assumes that year-round disinfection, and all associated costs, will continue at the WWTP to meet permit requirements for any disinfection alternative selection.

Table 6-7 – Capital and O&M Cost Comparison of Disinfection Alternatives

Disinfection Option	Capital Costs	O&M Costs[1,2]	Present Value of O&M	Net Present Worth[3]
Ultraviolet (UV)	$200,100	$11,500	$155,100	$355,200
Gaseous Chlorine	$178,000	$15,300	$206,800	$384,800

[1] For UV, O&M costs include annual lamp replacement, annual power, and ballast replacement on a 10 year cycle.
[2] For gaseous chlorine, O&M costs include annual chemical costs for chlorine and sulfur dioxide, and equipment replacement costs on a 10 year cycle.
[3] Net present worth calculated assuming 4% annual interest.

As demonstrated by the results of the cost analysis, the UV disinfection system has a slightly higher capital cost investment due to more expensive equipment and the need to retrofit the existing basin to install the equipment. The cost of the chlorine disinfection option approaches the cost of the ultraviolet system largely in part to the required expansion of the existing contact basin (approximately 50 percent of the capital cost) but cost is kept low overall due to much of the required infrastructure already existing at the plant. The O&M costs for UV are relatively low and roughly two-thirds the cost of chlorine O&M. The two systems were compared over a 20-year life cycle period with an assumed 4 percent interest rate and a net present worth was calculated for each. The UV disinfection system was shown to have a lower net present worth despite the higher initial capital cost. Based on the level of accuracy of a preliminary engineering report, the net present worth of these two alternatives can be considered relatively equal. In addition to a lower net present worth, UV disinfection systems are considered more operator friendly and less dangerous due to the lack of chemicals. Both systems should satisfy the disinfection needs of the City.

Should the City decide to pursue the use of UV disinfection, it will be necessary to perform multiple tests to conclude that the assumed characteristics of the effluent flow at the WWTP will be suitable for the disinfection process. Tests would include collimated-beam bioassay and UV transmittance (UVT) tests and be used to determine the necessary UV dose required for disinfection and the ability of UV light to pass through the water and reach all inactivation targets. The results of these tests will confirm UV as a practical source of disinfection for the specified stream.

7.0 EVALUATION OF TREATMENT ALTERNATIVES

7.1 General

The existing WWTP has sufficient capacity to treat the anticipated flow and BOD loadings for the planning period of this report. Changes in permit conditions or unanticipated growth, either residential or industrial/commercial, could alter the assumptions made in this report. However, at this time, regulatory changes are not anticipated by the SD DENR nor is significant growth by the City. The existing site has sufficient area for the alternatives discussed in this report. An evaluation of the cost of the alternatives and a recommended alternative is presented below. Certain processes are more critical and need to be completed sooner than others. A phasing plan for implementing the capital improvements is presented in this section.

7.2 Present Worth Analysis / Cost Considerations

A present worth analysis was completed to compare the capital costs with long term O&M cost changes discussed in the preceding chapter. For example, UV disinfection will reduce the annual facility O&M cost, but addition of the microscreens will add building heat and equipment costs. A 4.0 percent inflation rate over 20 years was assumed for the analysis. The net present worth analysis allows the costs, both capital and O&M, to be compared in today's dollars. The present worth costs below were derived assuming projects were not phased. New O&M costs were determined and added to the existing (2010) annual O&M budget of $251,000 to provide for a new annual budget expectation based on the alternatives. The baseline for current conditions (equal to Alternative III – No Action option presented in Section 5) is included so that changes from baseline can be visualized for comparison despite the alternative itself being previously discarded as not feasible. The table reflects the analysis done including a 12 percent current bid premium to account for the current construction climate in the region. The results are summarized in Table 7-1 below.

Table 7-1 – Alternative Present Worth Analysis

	Capital Present Worth*	New O&M Annual Cost	O&M Present Worth	Net Present Worth
Alternative I A	$2,017,400	$251,000	$3,411,200	$5,428,600
Alternative I B	$2,042,100	$247,200	$3,358,200	$5,400,300
Alternative II A	$2,026,800	$277,000	$3,764,500	$5,791,300
Alternative II B	$2,051,600	$273,200	$3,712,900	$5,764.500
Baseline	$0	$251,000	$3,411,200	$3,411,200

*Based on 12% current bid premium.

The majority of the improvements outlined in this report could be constructed in one construction season. However, the City could consider spreading construction over several seasons to aid cash

flow needs. This would bring the advantage of not having to pay for all of the improvements at one time, but would add to the overall project cost due to the need for contractors to mobilize multiple times.

7.3 Alternative I A – New Primary Clarifier and Upgrade Chlorine Disinfection

The principal features of Alternative I A are construction of a new primary clarifier and rehabilitation/upgrade and expansion of the existing chlorination/dechlorination system. The new primary clarifier would be constructed north of the existing primary clarifier. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the funds can be allocated to an alternative improvement project.

Construction sequencing of Alternative I A would be straightforward. The new primary clarifier would be constructed first, along with the biofilter lift station (if deemed necessary). After completion of the new primary clarifier, the existing primary clarifier could be drained and repaired. Improvements to the disinfection system could occur simultaneously to the primary clarifier construction, or the improvements could be scheduled to occur outside of the critical disinfection season. Operation of the facility outlined in Alternative I A would most likely be the easiest since the system does not add new mechanical processes and is very similar to the existing system.

Alternative I A has the lowest estimated capital cost of the alternatives and second lowest net present worth. This alternative would not have a quantifiable impact on current facility O&M costs.

7.4 Alternative I B – New Primary Clarifier and Ultraviolet Disinfection

The principal features of Alternative I B are construction of a new primary clarifier and replacement of the existing chlorination/dechlorination system with an ultraviolet disinfection system. The new primary clarifier would be constructed north of the existing primary clarifier. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new primary clarifier to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the funds can be allocated to an alternative improvement project.

Construction sequencing of Alternative I B would be straightforward. The new primary clarifier would be constructed first, along with the biofilter lift station (if deemed necessary). After completion of the new primary clarifier, the existing primary clarifier could be drained and repaired. Improvements to the disinfection system could occur simultaneously to the primary

clarifier construction, or the improvements could be scheduled to occur outside of the critical disinfection season.

Operation of the facility would be slightly more complex at the on-set with the introduction of the new disinfection system. However, in the long-run, operation and maintenance of the UV system would not be any more complex than operating the current gas disinfection system. Therefore, the overall operational requirements would remain similar to the existing system.

Alternative I B is competitive on estimated capital costs with the other alternatives and has the lowest net present worth. Based on the net present worth analysis conducted in Section 6, it appears that switching to an ultraviolet disinfection system may reduce the annual O&M cost of the facility.

7.5 Alternative II A – New Microscreens and Upgrade Chlorine Disinfection

The principal features of Alternative II A are construction of a new microscreens, building, and associated pumping, and rehabilitation/upgrade and expansion of the existing chlorination/dechlorination system. The new microscreens and building would be constructed north of the existing primary clarifier. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new microscreens to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the funds can be allocated to an alternative improvement project. However, due to a higher degree of headloss through the microscreens, it is more likely that additional pumping would be required to convey flow to the existing biofilter lift station.

Construction sequencing of Alternative II A would be straightforward. The new microscreens and building would be constructed first, along with the biofilter lift station (if deemed necessary). After completion of the new microscreens, the existing primary clarifier could be drained. After draining and inspecting the clarifier, the City can determine if they wish to re-purpose the clarifier into an aerated sludge holding tank. If the City elects to re-purpose the existing primary clarifier, they can then proceed with renovating the existing sludge storage lagoon into a flow equalization basin. Improvements to the disinfection system could occur simultaneously to the primary clarifier construction, or the improvements could be scheduled to occur outside of the critical disinfection season.

Operation of the facility would be slightly more complex due to the introduction of the mechanical microscreens and potentially flow equalization. Operator training would be provided, along with O&M manuals for these processes which would allow the operators to become familiar with the operation and maintenance of the systems before they are turned over to the City. Operational procedures would need to be put into place to ensure smooth transfer as personnel transition through the facility.

Alternative II A has the second lowest estimated capital cost of the alternatives and but highest net present worth. Due to the high net present worth associated with this option and the increase operational and maintenance burdens, this alternative is not recommended.

7.6 Alternative II B – New Microscreens and Ultraviolet Disinfection

The principal features of Alternative II B are construction of a new microscreens, building, and associated pumping, and replacement of the existing chlorination/dechlorination system with an ultraviolet disinfection system. The new microscreens and building would be constructed north of the existing primary clarifier. For the preliminary engineering report it was assumed a new biofilter pump station would be necessary to transfer wastewater from the new microscreens to the biofilter towers as a worst case scenario. During the design phase of the project a field survey will be conducted to determine if this pump station will be necessary. If it is determined the pump station is not required, the cost for the pump station can be removed from the project, or the funds can be allocated to an alternative improvement project. However, due to a higher degree of headloss through the microscreens, it is more likely that additional pumping would be required to convey flow to the biofilter tower.

Construction sequencing of Alternative II B would be straightforward. The new microscreens and building would be constructed first, along with the biofilter lift station (if deemed necessary). After completion of the new microscreen, the existing primary clarifier could be drained. After draining and inspecting the clarifier, the City can determine if they wish to re-purpose the clarifier into an aerated sludge holding tank. If the City elects to re-purpose the existing primary clarifier, they can then proceed with renovating the existing sludge storage lagoon into a flow equalization basin. Improvements to the disinfection system could occur simultaneously to the primary clarifier construction, or the improvements could be scheduled to occur outside of the critical disinfection season.

Operation of the facility would be slightly more complex due to the introduction of the mechanical microscreens, ultraviolet disinfection and potentially flow equalization. Operator training would be provided, along with O&M manuals for these processes which would allow the operators to become familiar with the operation and maintenance of the systems before they are turned over to the City. Operational procedures would need to be put into place to ensure smooth transfer as personnel transition through the facility.

Alternative II B has the highest capital cost of all the alternatives that have been considered and the second highest net present worth. Based on the net present worth analysis conducted in Section 6, it appears that switching to an ultraviolet disinfection system may reduce the annual O&M cost of the facility. However, these cost savings do not overcome the higher capital costs and O&M costs associated with constructing the microscreens and building. Therefore, this alternative is not recommended.

7.7 Advantages and Disadvantages

Table 7-2 is presented below, which outlines the advantages and disadvantages of the Alternatives discussed above.

Table 7-2 – Alternative Advantages and Disadvantages

	Advantages	Disadvantages
Alternative I A	• Ease of operation • Similarity of existing system • Low O&M annual costs • Low capital cost	• Potential safety issues with gas disinfection • No re-purposing of existing primary clarifier
Alternative I B	• Ease of operation • Similarity of existing system • Low O&M annual costs • UV is generally considered safer than gas disinfection	• Operators need to become familiar with new equipment • No re-purposing of existing primary clarifier
Alternative II A	• Can re-purpose existing primary clarifier	• Higher O&M costs • Operators need to become familiar with new equipment
Alternative II B	• Can re-purpose existing primary clarifier	• Higher O&M costs • Operators need to become familiar with new equipment

7.8 Recommended Alternative

All alternatives are competitive when comparing capital costs; however Alternatives I A and I B both result in lower annual O&M costs that lead to much lower net present worth values. Alternative I A and Alternative I B would both provide an excellent solution for maintaining the capacity of the WWTP and providing equipment redundancy. The recommended alternative is Alternative I B pending feedback from the City. Alternative I B is comparable to the lowest capital cost alternative and is the alternative with the lowest net present worth, and provides a solution to adequately meet the needs of the City. Additionally, a greater portion of the net present worth is associated with capital costs, which provides increased opportunity for funding mechanisms. O&M is rarely funded by programs other than user fees.

8.0 FUNDING CONSIDERATIONS

8.1 General

This section addresses the current funding sources that may be considered for realization of the projects previously discussed. Funding for these improvements may be available through a variety of grant funds, low interest loan programs, revenue bonds, general obligation bonds (special assessments). A local match, through utility revenues or sales tax, may be required for some funding options. Lists of programs that may be useful for the recommended projects include, but are not limited to:

Grant funds:

- United States Department of Agriculture Rural Development
- Community Development Block Grants (CDBG)

Low interest loans:

- Clean Water State Revolving Fund (CWSRF) program.
- Revenue Bonds
- General Obligation Bonds
- United States Department of Agriculture Loans

8.2 Combination of Funding Sources

As the projects are developed, environmental constraints are determined, and associated costs are refined. The financial and funding requirements will also be further identified. If applicable, the City should give consideration to combination of the above referenced funding sources which may best suit the project and the City's financial needs.

8.3 Existing Funding

It is our understanding the City has secured a CDBG in the amount of $515,000 for the WWTP improvements. We also understand that the City has budgeted for approximately $1,000,000 for self-funding improvements at the WWTP. Depending on the alternative selected and the additional options that are included, gap financing for the remaining cost of the project may be required. A small gap financing loan could be paid for by adjusting user sewer rates if necessary. For example, a $250,000 loan at an interest rate of 2.5% with a 20 year payback would require an annual payment of approximately $16,000. Based on the projected annual average flow rate, a user rate increase of approximately $0.12/1,000 gallons would cover the annual costs of a gap loan.

9.0 RECOMMENDATIONS AND IMPLEMENTATION PLAN

9.1 Conclusions

During preparation of this facility plan study, several key points stand out which will help define the recommendations that will follow.

- The population of Mobridge has historically been in decline and more recently stagnant. Increased development, industrial and residential, is not anticipated for the area based on several sources and population projections. The rate of growth and subsequent calculations and analyses assumed a population growth rate of 0.25-percent to remain conservative in design.
- Based on the above population growth projections, the WWTP service population for this planning study is 3,640. The existing WWTP was designed to service a population of 4,640.
- Design calculations and analyses suggest that most existing components and equipment in the WWTP are sufficient for all projected hydraulic and organic loadings with the current biofilter unit as the lone exception. On paper, the biofilter is overloaded with regards to the recommended biofilter loadings for projected organic loadings. This deficiency exists on paper because organic loading reduction through primary treatment cannot be assumed due to lack of redundancy. However, with the one primary clarifier in service the WWTP has routinely met its effluent permit requirements.
- New primary treatment equipment is needed. The infrastructure of the existing clarifier is in poor shape and permitting agencies will require the addition of redundancy if major construction on the unit is performed. Primary treatment redundancy will relieve conditions at which the biofilter becomes overloaded.
- The infrastructure of the existing disinfection system has deteriorated and must be replaced. A drain should be added to the existing contact basin to allow for easier draining and maintenance.
- Additional optional improvements can be pursued to improve the WWTP assuming the budget and desire exist.

9.2 Recommendations

- **The City should proceed with Alternative I B (New Primary Clarifier, Rehabilitate Existing Primary Clarifier, New Biofilter Pump Station, New Ultraviolet Disinfection, New Disinfection Basin Drain) as it represents a cost effective alternative on a net present worth basis while providing an upgraded system. Although the capital cost of Alternative I B is slightly higher than 1 A, inclusion of UV disinfection will lower the plant's annual O&M costs and provide an alternative**

with the lowest net present worth. In addition, UV disinfection has proven to be cost-effective, reliable, and a safer alternative to gas disinfection.

- If the City elects to continue with gas disinfection, Alternative I A is a viable option. Alternative I A has the advantage of lower capital costs, along with the advantage of not introducing new technology to the facility.
- The City should proceed with the Optional Improvement Biofilter Lift Station Rehabilitation should a new biofilter lift station not be required to provide for a reliable system with solid infrastructure.
- The City should also proceed with the Optional Improvement Instrumentation and Controls upgrade should the budget allow as it can provide for substantial improvements in plant operations.
- Optional Improvements dealing with rehabilitating the primary clarifier for sludge storage and conversion of the sludge pond to an equalization basin will not be necessary under Alternative I selections. Should an Alternative II option be selected, the City should pursue these additional Optional Improvements after the completion of the base alternative and the optional recommendations outlined in this report, as budget allows, and as the City deems necessary.
- Selected alternative base improvements must all be completed to satisfy the outcome requirements of the project. The City must ultimately determine which Optional Improvements to pursue.

9.3 Implementation Plan

A proposed implementation schedule for Alternative I B detailing the progression of the project going forward has been included in Table 9-1 below.

Table 9-1 – Proposed Implementation Schedule

Activity	Date
City review draft facility plan and provide comments	June 16, 2014
City conduct public hearing for facility plan	June 23, 2014
City approves facility plan	June 26, 2014
Submit facility plan to reviewing agencies	June 30, 2014
Submit environmental documentation to agencies (if necessary)	July 7, 2014
Council session to approve preliminary and final design contract	July 7, 2014
Complete field survey and data gathering	July 28, 2014
Complete preliminary design	September 8, 2014
City comments on preliminary design	September 15, 2014
Complete final design	December 9, 2014
City comments on final design	December 16, 2014
Submit plans and specifications to SD DENR and CDBG	December 22, 2014
Receive SD DENR approval for plans and specifications	January 26, 2015
Bidding of construction contract	February 16, 2015
Award of construction contract	March 16, 2015
Start construction	April 6, 2015
Commissioning of new primary clarifier and disinfection	November 30, 2015
Rehabilitation of existing primary clarifier complete	June 20, 2016
Substantial completion of construction	July 11, 2016
Final completion of project	July 25, 2016

1/1 LOCATION MAP
SCALE: NONE

EXISTING LEGEND

MAXIMUM WATER LEVEL = 1620 M.S.L. (LINE SHOWN IS APPROXIMATE)

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
LOCATION MAP

DRAWING TYPE	EXHIBIT
PREPARED BY	TRK
CHECKED / APPROVED	JJK / KJW
DATE	JUNE 2014
PROJECT NUMBER	P00551-2014-000
SHEET	1 of 6
DRAWING	1

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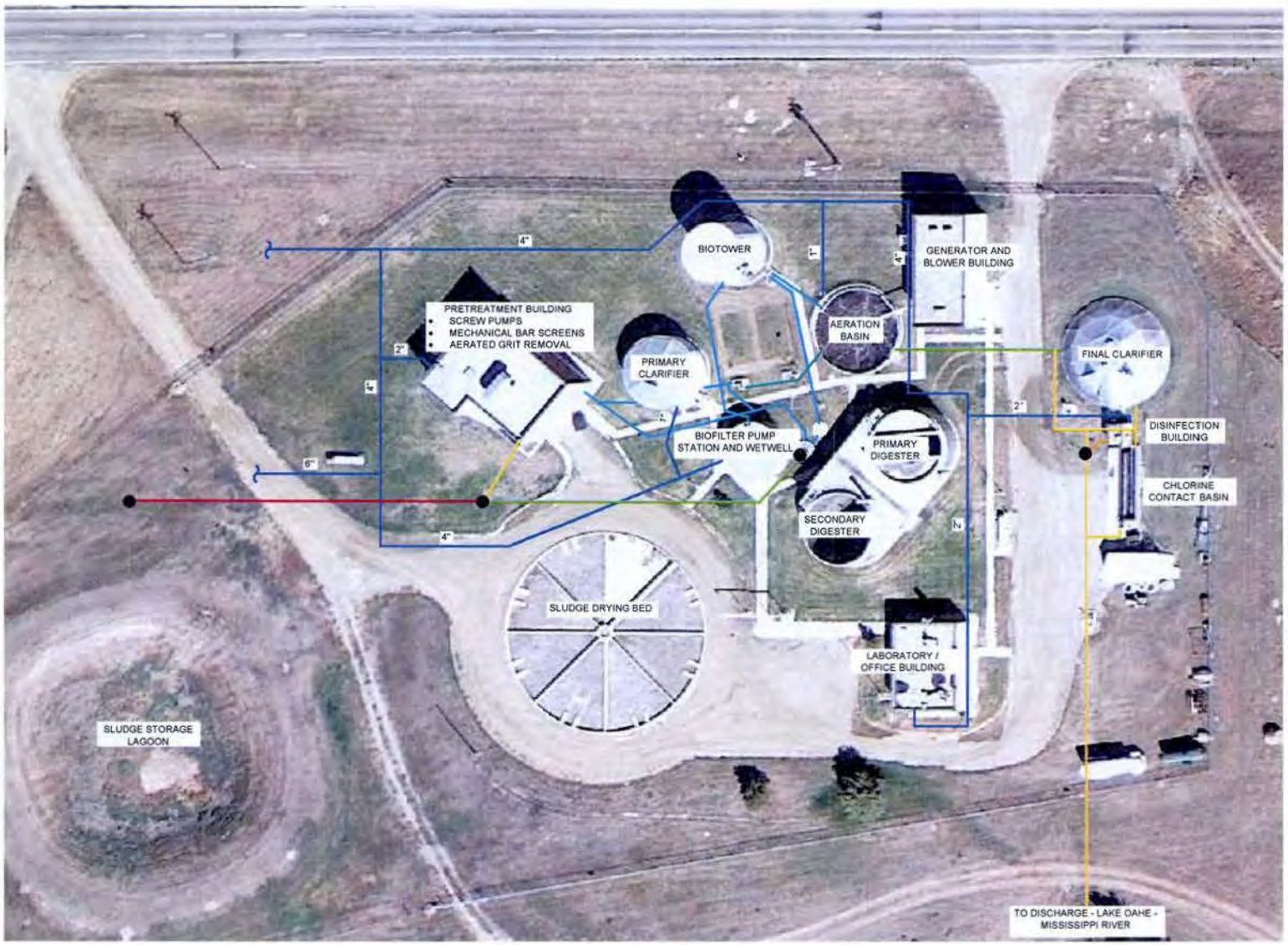
PRELIMINARY



1/2 LIQUIDS PROCESSES EXISTING CONDITIONS
SCALE (APPROXIMATE) 1" = 25'

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PRELIMINARY

SYM	DATE	DESCRIPTION	APPR

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
LIQUIDS PROCESSES EXISTING CONDITIONS

DRAWING TYPE	EXHIBIT
PREPARED BY	TRK
CHECKED / APPROVED	JJK / KJW
DATE	JUNE 2014
PROJECT NUMBER	P00551-2014-000
SHEET	2 of 6
DRAWING	2

1/3 ALTERNATIVE I A
SCALE (APPROXIMATE) 1" = 25'

NORTH

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
ALTERNATIVE I A

DRAWING TYPE	EXHIBIT
PREPARED BY	TRK
CHECKED / APPROVED	JJK / KJW
DATE	JUNE 2014
PROJECT NUMBER	P00551-2014-000
SHEET	3 of 5
DRAWING	3

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PRELIMINARY

1/4 ALTERNATIVE I B
SCALE (APPROXIMATE) 1" = 25'

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
ALTERNATIVE I B

DRAWING TYPE: EXHIBIT
PREPARED BY: TRK
CHECKED / APPROVED: JJK / KJW
DATE: JUNE 2014
PROJECT NUMBER: P00551-2014-000
SHEET: 4 of 6
DRAWING: 4

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PRELIMINARY

1/5 ALTERNATIVE II A
SCALE (APPROXIMATE) 1" = 25'

NORTH

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
ALTERNATIVE II A

DRAWING TYPE	EXHIBIT
PREPARED BY	TRK
CHECKED / APPROVED	JJK / KJW
DATE	JUNE 2014
PROJECT NUMBER	P00551-2014-000
SHEET	5 of 6
DRAWING	5

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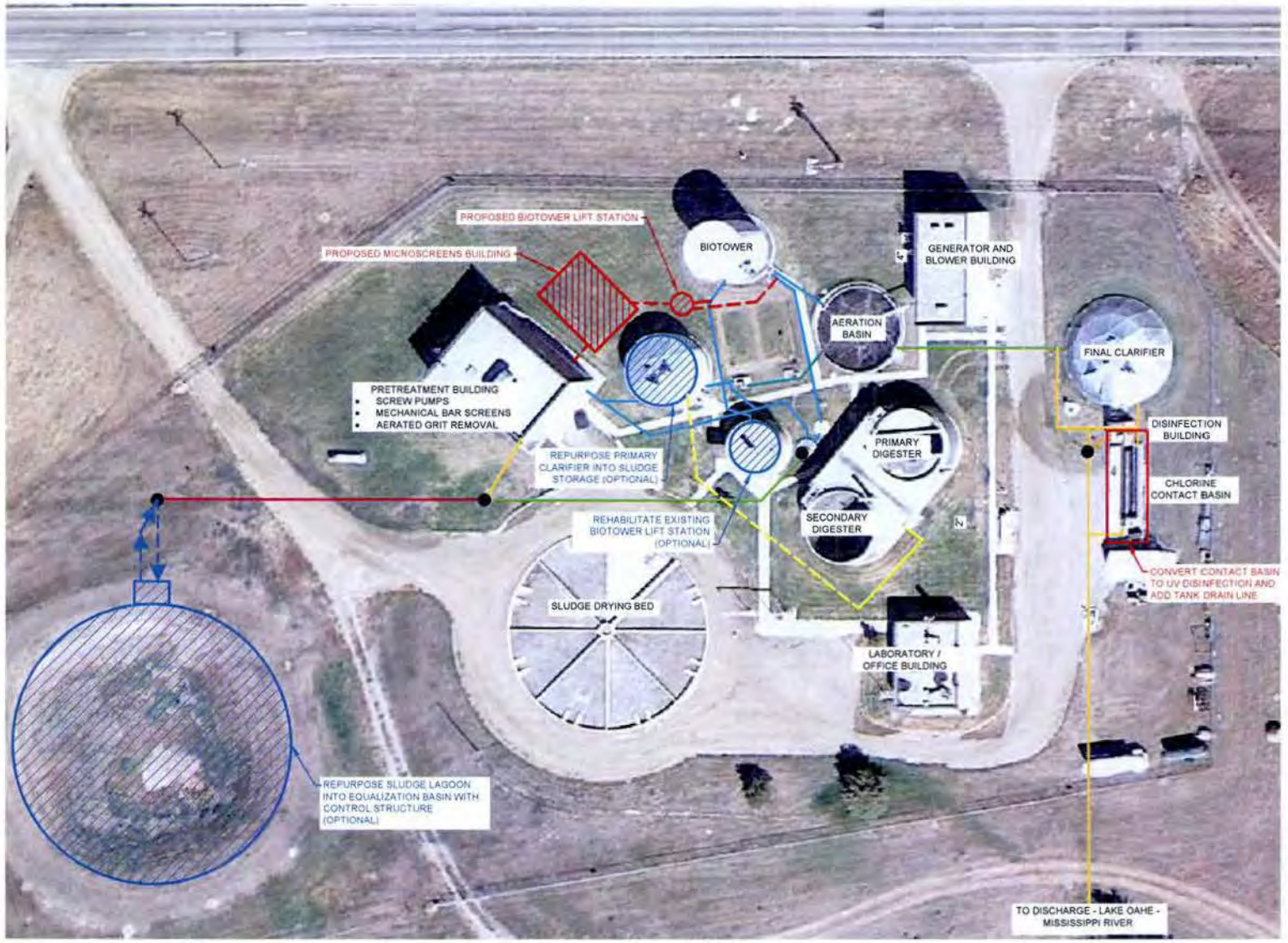
PRELIMINARY



1/6 ALTERNATIVE II B
SCALE (APPROXIMATE) 1" = 25'

NORTH

MOBRIDGE WASTEWATER FACILITY PLAN REPORT
CITY OF MOBRIDGE
MOBRIDGE, SOUTH DAKOTA
ALTERNATIVE II B

NUM	DATE	DESCRIPTION	ANN

DRAWING TYPE: EXHIBIT
PREPARED BY: TRK
CHECKED / APPROVED: JJK / KJW
DATE: JUNE 2014
PROJECT NUMBER: P00551-2014-000
SHEET: 6 of 6
DRAWING: 6

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PRELIMINARY

Appendix A: SD DENR Consultation

DEPARTMENT OF ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

May 6, 2014

Jayme Klecker
Project Manager, AE2S
Water Tower Place Business Center
6901 East Fish Lake Road Suite 184
Maple Grove, MN 55369

Dear Mr. Klecker:

The following is in response to your request for information about the city of Mobridge's Wastewater Treatment Plant (WWTP) Surface Water Discharge Permit (SD0020028) for a Facility Plan over the next 20 years. I have reviewed the current permit, effluent monitoring data, compliance inspection reports, and correspondence. No major changes are anticipated.

Potential stream reclassifications for the receiving waters:

Discharge from the WWTP enters Lake Oahe (Missouri River), which is classified by the South Dakota Surface Water Quality Standards (SDSWQS), Administrative Rules of South Dakota (ARSD), Section 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; and
(10) Irrigation waters.
(11) Commerce and Industry waters.

No stream reclassifications are anticipated for Lake Oahe.

Anticipated changes in effluent permit limits:

Upon permit renewal after 6/30/2016, most of the limits should stay the same. The table below lists the effluent limits of parameters currently monitored. More detail is given in the city of Mobridge's Surface Water Discharge Permit and Statement of Basis.

Total Phosphorous and Total Nitrogen monitoring will be added to the new permit, but without an effluent limit. SDDENR anticipates that phosphorous limits will be added to permits in the future.

Fecal coliform and dissolved oxygen are not monitored.

Additional parameters that may be subject to change or inclusion in future permitting cycles: None are anticipated at this time.

City of Mobridge (SD0020028)					
Effluent Characteristic	**Effluent Limit**				**Comments**
	30-Day Average	**7-Day Average**	**Daily Minimum**	**Daily Maximum**	
Five-Day Biochemical Oxygen Demand (BOD_5), mg/L	30	45	--	--	Also, 85% removal is required based on the monthly arithmetic means of the influent and effluent concentrations.
Total Suspended Solids (TSS), mg/L	60	45	--	--	Also, 85% removal is required based on the monthly arithmetic means of the influent and effluent concentrations.
Escherichia coli (*e. coli*), no./100mL	126	--	--	235	Fecal coliform limits are being phased out and replaced with *E. coli* limits.
Total Coliform, no./100mL	5,000	--	--	20,000	
Oil and Grease, mg/L	--	--	--	10	Visual presence is also monitored.
Total Residual Chlorine, mg/L	--	--	--	0.019	
pH, su	--	--	6.6	8.3	
Flow rate, MGD	--	--	--	--	Monitored, but no limit.
Water temperature, °C	--	--	--	--	Monitored, but no limit.
Ammonia-Nitrogen (as N), mg/L	--	--	--	--	Monitored, but no limit due to the high flows in the Missouri River. Depending on the implementation of more stringent water quality standards recommended by the EPA, **an ammonia limit may be added to future permits.**

City of Mobridge (SD0020028)					
Effluent Characteristic	**Effluent Limit**				**Comments**
	30-Day Average	**7-Day Average**	**Daily Minimum**	**Daily Maximum**	
Total hardness (as $CaCO_3$), mg/L	--	--	--	--	Monitored quarterly, but no limit.
Parameters listed in ARSD Section 74:52:02:42, µg/L	--	--	--	--	Monitored quarterly, but no limit.
Molybdenum, µg/L	--	--	--	--	Monitored quarterly, but no limit.
Acute Whole Effluent Toxicity (WET), pass/fail	--	--	--	--	Monitored quarterly. There shall be no Acute WET, as measured by the Whole Effluent Toxicity test. SDDENR is moving towards switching from a WET limit of Pass/Fail to Acute Toxic Units (TUa). **In the next permit cycle, the facility will be required to report in both Pass/Fail and TUa.** Also, **Chronic WET limits may be added if needed.**

Let me know if you have any questions, or need any additional information.

Sincerely,

Kathleen Grigg

Kathleen Grigg, EIT
Engineer I
Surface Water Quality Program
South Dakota Department of Environment and Natural Resources
(605) 773-3351
Kathleen.Grigg@state.sd.us

cc: Mobridge SWD File – Pierre (SD0020028)

Appendix B: Data and Sources

Appendix B includes documents provided by the City and used as sources of information in the preparation of the Facility Plan. Additional external sources included:

- Metcalf & Eddy: Wastewater Engineering Treatment and Reuse, Fourth Edition.
- Ten States Standards
- Recommended Design Criteria Manual: Wastewater Collection and Treatment Facilities (SD DENR)

Table B-1 – Plant Data

Year	Influent (MG)	Effluent (MG)	Cl_2 Use (lbs)	SO_2 Use (lbs)	Biosolids Land Applied* (lbs)
2010	121	119.5	4,430	4,432	95,807
2011	110	113	3,876	5,393	75,477
2012	115	115	3,884	3,772	76,668
Population Served = 3,500					

*Data supplied in MTON. Use of volume definition (1 freight ton - MTON - equals 40 cy) or weight definition (1 MTON = 2,205 lbs) not specified. Weight assumed.

Table B-2 – Major Water Users

	Water Used	
Major Water Users	[MGyear]*	[GPD]
Wrangler Inn	1,931,210	5,291
Fabra Tech	2,916,700	7,991
Brown Palace	2,361,020	6,469
Oahe Bait	2,333,850	6,394
West Side Meats	1,062,711	2,912
Burger King	1,008,610	2,763
Hassman Rental	1,230,000	3,370
Grand Oasis	1,366,190	3,743
Golden Living Center	4,180,220	11,453

*No units supplied. Values assumed to be yearly.

Table B-3 – Motor Information

Equipment	Motor Manufacturer	HP	Phase	Amp	Volts	RPM	Hz
SCREW PUMP 1	BALDOR	10	3	30 - 28/14	208 - 230/460	1,725	60
SCREW PUMP 2	BALDOR	10	3	30 - 28/14	208 - 230/460	1,725	60
GREASE MOTOR 1	RELIANCE	0.33	3	1.6/0.8	230/460	1,725	60
GREASE MOTOR 2	RELIANCE	0.33	3	1.6/0.8	230/460	1,725	60
BAR SCREEN	RELIANCE	1.5	3	4.4/4.4	208 - 230/460	1,725	60
GRIT PUMP 1	MARATHON	3	3	11/5.5	230/460	1,735	30
GRIT PUMP 2	MARATHON	3	3	11/5.5	230/460	1,735	30
AERATED GRIT BLOWER	BALDOR	3	3	8.2 - 8.2/4.1	230/460	1,725	60
GRIT CLASSIFIER	STERLINE	1	3	3.4/1.7	230/460	1,725	60
GRIT CLASSIFIER GREASER	SPANDONE	--	--	1.22/0.61	230/460	1,570	60
PRIMARY CLARIFIER	MAGNETEX	0.50		1.6/1.8/0.9	200/230/460	1,725	60
PRIMARY CLARIFIER SLUDGE PUMP	BALDOR	5	3	15 - 13.8	208 - 230/460	1,725	60
BIO TOWER LIFT PUMP 1	U.S. ELECTRIC	20	3	52 - 26	230/460	1,170	60
BIO TOWER LIFT PUMP 2	U.S. ELECTRIC	20	3	52 - 26	230/460	1,170	60
AERATION BLOWER 1	TECO WESTINGHOUSE	25	3	68.8 - 34.4	190 - 380	3,530	60
AERATION BLOWER 2	TECO WESTINGHOUSE	25	3	68.8 - 34.4	190 - 380	3,530	60
FINAL CLARIFIER	SEW EURODRIVE	0.50	--	2.75 - 1.08	230/460	1,700	60
DIGESTER BLOWER 1	MARATHON	50	3	136 - 88	230 - 460	--	60
DIGESTER BLOWER 2	MARATHON	50	3	136 - 88	230 - 460	--	60
SLUDGE TRANSFER PUMP 1	BALDOR	5	3	15 - 13.2/6.6	208 - 230/460	1,725	60
SLUDGE TRANSFER PUMP 2	U.S. ELECTRIC	5	3	17.6 - 8.8	230/460	1,155	60

Permit No: SD0020028

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,

the city of Mobridge

is authorized under this permit to discharge to

Lake Oahe (Missouri River)

from its wastewater treatment facility located in the southeast ¼ of Section 29, Township 124 North, Range 79 West on the southeast side of Mobridge, in Walworth County, South Dakota (Latitude: 45.525222°, Longitude: -100.413611°), 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 July 1, 2011

This permit and the authorization to discharge shall expire at midnight, June 30, 2016

Signed this 23rd day of June, 2011

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.

cfs is the measure of flow rate meaning cubic feet per second

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.

DMR means Discharge Monitoring Report. EPA Form 3320-1, which is filled out to report sampling data.

EPA or **U.S. 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.

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.

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

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 Points
001	Any discharge from the disinfection basin that enters Lake Oahe (Missouri River) (Latitude: 45.522611°, Longitude: -100.413472°).

1.2 Interim Effluent Limits – *Outfall 001*

Effective immediately and lasting through April 30, 2013, 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 (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
Total Residual Chlorine, mg/L [4] (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 nor greater than 8.3 standard units in any sample.			
The oil and grease concentration shall not impart a visible film or sheen to the surface of the water or to the adjoining shorelines.			
There shall be no Acute Whole Effluent Toxicity in the discharge, as measured by the WET test.			
No chemicals shall be used without prior written permission.			
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 calendar month. 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 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. They shall not exceed 20,000 per 100 milliliters in any one sample.

[4] 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, "<0.05" shall be used for reporting purposes.

1.3 Final Effluent Limits – *Outfall 001*

Effective May 1, 2013 and lasting through the life of the 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 (BOD_5), mg/L	30	45	N/A
Total Suspended Solids (TSS), mg/L	30	45	N/A
Escherichia coli (*E. coli*), no./100 mL [2] (May 1 – September 30)	126	N/A	235
Total Coliform, no./100 mL [3]	5,000	N/A	20,000
Oil and Grease, mg/L	N/A	N/A	10
Total Residual Chlorine, mg/L[4] (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 nor greater than 8.3 standard units in any sample.			
The oil and grease concentration shall not impart a visible film or sheen to the surface of the water or to the adjoining shorelines.			
There shall be no Acute Whole Effluent Toxicity in the discharge, as measured by the WET test.			
No chemicals shall be used without prior written permission.			
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] *E.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 calendar month. They shall not exceed 235 per 100 milliliters in any one sample from May 1 to September 30.

[3] Total Coliform organisms shall 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. They shall not exceed 20,000 per 100 milliliters in any one sample.

[4] 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, "<0.05" shall be used for reporting purposes.

1.4 Interim Self-Monitoring Requirements

Effective immediately and lasting through April 30, 2013, 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]
Flow Rate, MGD	Continuous	Daily Maximum; 30-Day Average	Instantaneous
pH, standard units	Five times per week[2]	Daily Minimum; Daily Maximum	Instantaneous [3]
Water Temperature, °C	Five times per week[2]	Daily Maximum; 30-Day Average	Instantaneous [4]
Oil and Grease, visual	Five times per week	Presence or absence of sheen	Visual [5]
Oil and Grease (hexane ext), mg/L	Contingent	Daily Maximum	Grab [5]
Ammonia-Nitrogen (as N), mg/L	Weekly [2]	Daily Maximum; 30-Day Average	Grab
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	Weekly	Daily Maximum [6]	Instantaneous
Five Day Biochemical Oxygen Demand (BOD_5), mg/L	Weekly	Max. 7-Day Average; 30-Day Average	8-hour Composite
Five Day Biochemical Oxygen Demand (BOD_5), mg/L (Influent)	Weekly	30-Day Average	8-hour Composite
Total Suspended Solids (TSS), mg/L	Weekly	Max. 7-Day Average; 30-Day Average	8-hour Composite
Total Suspended Solids (TSS), mg/L (Influent)	Weekly	30-Day Average	8-hour Composite
Fecal Coliform, no./100 mL	Five times per Month [7]	Daily Maximum; 30-Day Geometric Mean	Grab
Total Coliform, no./100 mL	Five times per Month [7]	Daily Maximum; 30-Day Geometric Mean	Grab
Escherichia coli (*E. coli*), no./100 mL	Five times per Month [7]	Daily Maximum; 30-Day Geometric Mean	Grab
Percent Removal (TSS), %	Monthly	30-Day Average	Calculated
Percent Removal (BOD_5), %	Monthly	30-Day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [8]	Pass/Fail	Grab
Copper, total recoverable, (as Cu), µg/L	Quarterly [9]	Actual Results	8-hour Composite
Cyanide, Weak Acid Dissociable (WAD), total, µg/L	Quarterly [9]	Actual Results	Grab
Silver, total recoverable (as Ag), µg/L	Quarterly [9]	Actual Results	8-hour Composite
Total Hardness (as CaCO3), mg/L	Quarterly [9]	Actual Results	Grab
Molybdenum, total recoverable (as Mb), µg/L	Annual [9]	Actual Results	8-hour Composite
Antimony, total recoverable (as Sb), µg/L	Annual [9]	Actual Results	8-hour Composite

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Arsenic, total recoverable (as As), mg/L	Annual [9]	Actual Results	8-hour Composite
Beryllium, total recoverable (as Be), µg/L	Annual [9]	Actual Results	8-hour Composite
Cadmium, total recoverable, (as Cd),µg/L	Annual [9]	Actual Results	8-hour Composite
Chromium, total recoverable (as Cr), µg/L	Annual [9]	Actual Results	8-hour Composite
Cyanide, total (as CN), µg/L	Annual [9]	Actual Results	Grab
Lead, total recoverable (as Pb), µg/L	Annual [9]	Actual Results	8-hour Composite
Mercury, total (as Hg), µg/L	Annual [9]	Actual Results	8-hour Composite
Nickel, total recoverable (as Ni) , µg/L	Annual [9]	Actual Results	8-hour Composite
Selenium, total recoverable (as Se), µg/L	Annual [9]	Actual Results	8-hour Composite
Thallium, total recoverable (as Tl), µg/L	Annual [9]	Actual Results	8-hour Composite
Zinc, total recoverable (as Zn), µg/L	Annual [9]	Actual Results	8-hour Composite
Phenols, total, mg/L	Annual [9]	Actual Results	Grab

[1] See Definitions in the proposed permit.

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

[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 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.

[5] 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.

[6] 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, then "<0.05" shall be used for reporting purposes.

[7] For fecal coliform, total coliform, and *E.coli*, 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. ***This sampling protocol for fecal coliform and* E.coli, *only applies if the discharge occurs between May 1 and September 30.***

[8] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[9] The permittee shall sample and analyze the influent and effluent for those parameters listed in ARSD 74:52:02:42 and molybdenum on an annual basis, except for effluent copper, WAD cyanide, and silver, which shall be sampled and analyzed on a quarterly basis. See Section 3.17 of the proposed permit for sampling requirements.

1.5 Final Self-Monitoring Requirements

Effective May 1, 2013 and lasting the life of the permit, 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]
Flow Rate, MGD	Continuous	Daily Maximum; 30-Day Average	Instantaneous
pH, standard units	Five times per week[2]	Daily Minimum; Daily Maximum	Instantaneous [3]
Water Temperature, °C	Five times per week[2]	Daily Maximum; 30-Day Average	Instantaneous [4]
Oil and Grease, visual	Five times per week	Presence or absence of sheen	Visual[5]
Oil and Grease (hexane ext), mg/L	Contingent	Daily Maximum	Grab [5]
Ammonia-Nitrogen (as N), mg/L	Weekly [2]	Daily Maximum; 30-Day Average	Grab
Total Residual Chlorine, mg/L (Applicable only if effluent is chlorinated)	Weekly	Daily Maximum [6]	Instantaneous
Five Day Biochemical Oxygen Demand (BOD_5), mg/L	Weekly	Max. 7-Day Average; 30-Day Average	8-hour Composite
Five Day Biochemical Oxygen Demand (BOD_5), mg/L (Influent)	Weekly	30-Day Average	8-hour Composite
Total Suspended Solids (TSS), mg/L	Weekly	Max. 7-Day Average; 30-Day Average	8-hour Composite
Total Suspended Solids (TSS), mg/L (Influent)	Weekly	30-Day Average	8-hour Composite
Total Coliform, no./100 mL	Five times per Month[7]	Daily Maximum; 30-Day Geometric Mean	Grab
Escherichia coli (*E. coli*), no./100 mL	Five times per Month [7]	Daily Maximum; 30-Day Geometric Mean	Grab
Percent Removal (TSS), %	Monthly	30-Day Average	Calculated
Percent Removal (BOD_5), %	Monthly	30-Day Average	Calculated
Acute Whole Effluent Toxicity	Quarterly [8]	Pass/Fail	Grab
Copper, total recoverable, (as Cu), µg/L	Quarterly [9]	Actual Results	8-hour Composite
Cyanide, Weak Acid Dissociable (WAD), total mg/L	Quarterly [9]	Actual Results	Grab
Silver, total recoverable (as Ag), µg/L	Quarterly [9]	Actual Results	8-hour Composite
Total Hardness (as CaCO3), mg/L	Quarterly [9]	Actual Results	Grab
Molybdenum, total recoverable (as Mb), µg/L	Annual [9]	Actual Results	8-hour Composite
Antimony, total recoverable (as Sb), µg/L	Annual [9]	Actual Results	8-hour Composite
Arsenic, total recoverable (as As), mg/L	Annual [9]	Actual Results	8-hour Composite

Effluent Characteristic	Frequency	Reporting Values[1]	Sample Type[1]
Beryllium, total recoverable (as Be), µg/L	Annual [9]	Actual Results	8-hour Composite
Cadmium, total recoverable, (as Cd),µg/L	Annual [9]	Actual Results	8-hour Composite
Chromium, total recoverable (as Cr), µg/L	Annual [9]	Actual Results	8-hour Composite
Cyanide, total (as CN), mg/L	Annual [9]	Actual Results	Grab
Lead, total recoverable (as Pb), µg/L	Annual [9]	Actual Results	8-hour Composite
Mercury, total (as Hg), µg/L	Annual [9]	Actual Results	8-hour Composite
Nickel, total recoverable (as Ni) , µg/L	Annual [9]	Actual Results	8-hour Composite
Selenium, total recoverable (as Se), µg/L	Annual [9]	Actual Results	8-hour Composite
Thallium, total recoverable (as Tl), µg/L	Annual [9]	Actual Results	8-hour Composite
Zinc, total recoverable (as Zn), µg/L	Annual [9]	Actual Results	8-hour Composite
Phenols, total, mg/L	Annual [9]	Actual Results	Grab

[1] See Definitions in the proposed permit.

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

[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 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.

[5] 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.

[6] 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, then "<0.05" shall be used for reporting purposes.

[7] For total coliform and *E.coli*, 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***This sampling protocol for* E.coli, *only applies if the discharge occurs between May 1 and September 30.***

[8] The permittee shall obtain and analyze a valid whole effluent toxicity sample at least once during each calendar quarter.

[9] The permittee shall sample and analyze the influent and effluent for those parameters listed in ARSD 74:52:02:42 and molybdenum on an annual basis, except for effluent copper, WAD cyanide, and silver, which shall be sampled and analyzed on a quarterly basis. See Section 3.17 of the proposed permit for sampling requirements.

1.6 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. 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). The permittee shall alternate test species, conducting an acute toxicity test using *Ceriodaphnia dubia* in one quarter, and an acute toxicity test using *Pimephales promelas* (fathead minnows) in the next quarter.

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. Should acute toxicity occur in the second test, testing shall occur once a month until further notified by the Secretary.

Actual test results including all chemical and physical data shall be submitted along with the Discharge Monitoring Report (DMR) that is 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).

1.7 Toxicity Identification Evaluation (TIE)/Toxicity Reduction Evaluation (TRE)

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.

1.8 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.

1.9 Inspection Requirements

1. Facility Inspections: 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. 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. 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.

2. Lift Station Inspections: The permittee shall inspect each lift station on at least **twice weekly**. The inspection 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. The permittee shall maintain a notebook recording information obtained during the inspection. 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);

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 shall be summarized and reported on the appropriate Discharge Monitoring Report Forms (EPA No. 3320-1) and submitted to SDDENR as follows: **001A** DMRs must be submitted monthly, **001Q** and **001W** DMRs must be submitted quarterly, and **001M** DMRs must be submitted annually. All DMRs 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: Department of Environment & Natural Resources
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 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 judgment 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 5.0, 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; 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:

      i. 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 influent and 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, except for effluent copper, weak acid dissociable cyanide, hardness, and silver, which shall be continue at a frequency of once per quarter.

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 influent and effluent samples collected shall be composite samples consisting of at least twelve (12) aliquots collected at approximately equal intervals over a representative 8 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 8 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.

NOTICE OF PUBLIC HEARING

Affidavit of Publication

STATE OF SOUTH DAKOTA

COUNTY OF WALWORTH

I, Franklin Gross, having first duly sworn under oath say: The Mobridge Tribune 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 Bridge City Publishing, Inc., in Mobridge, in said county and state, and has been such legal newspaper during the time hereinafter mentioned; that during all of said time as an employee or officer of said newspaper I have had personal knowledge of the facts stated in this affidavit; that the advertisement headed:

Wastewater improvement project hearing is March 17

City of Mobridge

a printed copy of which is hereto attached, was printed and published in said newspaper for one successive weeks upon the following dates, to-wit:

March 5th, 2014

that the full amount of the fees charged for publishing the same to-wit: the sum of $14.71 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.

Subscribed and sworn to before me this 28th day of March, 2014

Kelsey Majeske, Notary Public
State of South Dakota
My commission expires September, 2018

(Seal)

KELSEY MAJESKE
NOTARY PUBLIC
SOUTH DAKOTA

Wastewater improvement project hearing is March 17

NOTICE OF PUBLIC HEARING
for the Mobridge
Wastewater Improvement Project

The City of Mobridge is seeking $1,873,000 of funding from the Board of Water and Natural Resources for improvements to the wastewater treatment system. These improvements include replacing the clarifier and rehabbing an existing clarifier, put in a new UV system, replace the drain pipe and valve to the chlorine contact chamber, convert sludge pond to EQ basin and expand, update and commission a SCADA system for the plant. . 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 Mobridge City Hall on March 17 at 5:50pm.

Published once at the total approximate cost of $14.71.

-030514

NOTICE OF PUBLIC HEARING
for the
Mobridge Wastewater Improvement Project

The City of Mobridge is seeking $1,873,000 of funding from the Board of Water and Natural Resources for improvements to the wastewater treatment system. These improvements include replacing the clarifier and rehabbing an existing clarifier, put in a new UV system, replace the drain pipe and valve to the chlorine contact chamber, convert sludge pond to EQ basin and expand, update and commission a SCADA system for the plant. . 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 Mobridge City Hall on March 17 at 5:50pm.

MOBRIDGE CITY COUNCIL
REGULAR MEETING
March 17, 2014

Pursuant to due call and notice thereof, a Regular Meeting of the Common Council of the City of Mobridge, South Dakota was held in City Hall in said City on Monday, March 17, 2014 at 5:30 PM. Mayor Jamie Dietterle, Deputy Finance Officer Jackie Quaschnick, City Attorney Rick Cain, City Administrator Steve Gasser, and the following council persons were present: Cox, Cerney, Henderson, O'Connell, Yellow Boy and Carlson.

ADOPT AGENDA:
The agenda was adopted on a motion by Yellow Boy, second by O'Connell and carried. Carlson abstained.

MINUTES:
On a motion by Cox, second by Cerney and carried, to approve the minutes from the March 3, 2014 regular meeting. Carlson abstained.

DEPARTMENT HEAD REPORTS:
Mayor Dietterle recognized two city employees who have recently resigned, Memorie Carlson and Ed Schell. He thanked them for their years of service

Brad Milliken, Fire Chief/Superintendent
FIRE TRUCK – Moved by O'Connell, second by Carlson and carried, to approve the fire dept taking the new fire truck to Aberdeen to fire school on April 3-6th.

WATER TOWER PROJECT CONTRACT – Maguire Iron Inc. has requested an extension on their contract for the water tower project moving the completion date to June 30, 2015. They are offering $15,000 discount on the project and a 4 year extension on the warranty. The Council discussed their options. Moved by Carlson, second by Yellow Boy and carried, to reject the contract extension proposal from Maguire Iron Inc.

LEVEL INCREASE – Bill Pollock has passed his Class 1 certification and is eligible for a level increase. Moved by O'Connell, second by Cerney and carried to approve increasing Bill Pollock's hourly wage from $13.89 to $14.77 effective March 10, 2014.

NEW BUSINESS:
TOWN OF GLENHAM WEST NILE CONTRACT - Moved by O'Connell, second by Henderson and carried, to approve a contract with the Town of Glenham for West Nile mosquito spraying at $225 per spraying.

CITYWIDE CLEANUP – Moved by Cerney, second by Henderson and carried, to approve the City wide cleanup for May 12-17th. Roll offs will be available at the Street department.

PUBLIC HEARING FOR CDBG WASTEWATER IMPROVEMENT PROJECT – Ted Dickey, NECOG, was present. The City proposes to construct a new primary clarifier, rehab and repurpose the old primary clarifier, construct a new UV system in the retrofitted clarifier contact chamber, replace the drain pipe and valve to the chlorine contact chamber, convert the sludge to the EQ basin, add new harness rails to two wet/drywell lift stations and expand, update and commission a SCADA system for the plant. Discussion held on other projects within the City. Hearing no opinions for or against, moved by Cerney, second by Carlson and carried, to approve Resolution 14-06, Authorizing Community Development Block Grant Application to Assist in the Mobridge Wastewater Improvements Project

RESOLUTION 14-06

Authorizing Community Development Block Grant Application To Assist In The Mobridge Wastewater Improvements Project In The City Of Mobridge

WHEREAS, the City of Mobridge proposes to execute an application for $515,000 Community Development Block Grant funds to make improvements to the wastewater treatment plant in the City of Mobridge; and

WHEREAS, the City of Mobridge is eligible for Federal assistance for the proposed project; and

WHEREAS, with the submission of the Community Development Block Grant application, the City of Mobridge assures and certifies that all Community Development Block Grant program requirements will be fulfilled; and

WHEREAS, the City of Mobridge has held the required public hearing on Monday, March 17, 2014, for the Community Development Block Grant; and

WHEREAS, the City of Mobridge is required to designate a certifying officer for the purpose of signing documents pertaining to this grant; and

WHEREAS, the City of Mobridge is required to designate an environmental certifying officer for the purpose of signing required environmental documents pertaining to this grant;

NOW, THEREFORE BE IT RESOLVED, that the Mayor of the City of Mobridge, will be authorized to execute the Community Development Block Grant application for the City of Mobridge; and

AND BE IT FURTHER RESOLVED, that the Mayor of the City of Mobridge, be hereby designated as the City's certifying officer for the purpose of signing correspondence, pay requests, and other required documents;

AND BE IT FURTHER RESOLVED, that the Mayor of the City of Mobridge, be hereby designated as the City's environmental certifying officer for the purpose of signing correspondence and other required documents and forms.

PUBLIC HEARING FOR SRF LOAN FUNDING FOR WASTEWATER PROJECT – Ted Dickey reviewed the project again. This public hearing was for an SRF loan for up to $1,971,000 with a revenue source of project surcharge revenue bond with an interest rate of 3.25% for no more than 30 years. If the City needs to take out the full amount of the loan, wastewater rates would need to increase by $5.75 per month. The amount of the increase is dependent on several factors and not set. Moved by Cerney, second by Henderson and carried, to approve applying for SRF loan.

Hearing no opinion for or against, moved by O'Connell, second by Henderson and carried, to approve Resolution 14-07, a 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.

RESOLUTION NO. 14-07

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 Mobridge (the "City") has determined it is necessary to proceed with improvements to its Wastewater System, including but not limited to the construction of a new primary clarifier, rehab and repurpose the old primary clarifier, construct a new UV system in the retrofitted clarifier contact chamber, replace the drain pipe and valve to the chlorine contact chamber, convert the sludge to the EQ basin, add new harness rails to two wet/drywell lift stations and expand, update and commission a SCADA system for the plant. (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 $1,971,000 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.

TRAIL GRANT – Dickey was present to discuss a Recreational Trail Grant through Game Fish and Parks for repair of the existing trail. Grant is to fix cracks and repair low spots. Total project cost is $20,050. Local match proposed is 20%, costing the City $4,010. Dickey stated that the City can raise the local match from 20% to 46% for an extra 5 points onto our application. Moved by Carlson, second by O'Connell and carried, to approve applying for the trails grant at a 46% local match to repair the trail with a City cost of $9,223.

SETTING PUBLIC HEARING DATE – Moved by Yellow Boy, second by Cerney and carried, to approve setting a public hearing for an application received from the Mobridge Rodeo Association for a temporary liquor license April 7, 2014 at 5:40 PM.

DISCUSSION AND INFORMATION ITEMS:

- **SDML District Meeting** will be held March 26th at KT's Fireside at 6:00 PM. The City of Mobridge is host.
- **County Commissioner Duane Martin** – Martin was present to discuss with the Council the current property tax assessments.

PAYMENT OF BILLS:

Moved by Cerney, second by Carlson and carried, to approve the following bills for payment:
Aberdeen Finance Corp, garnishment-250.00 ;Aflac, insurance-850.42 ;AmeriPride, supplies-46.12 ;Automatic Building Controls, prof services-636.00 ;Avid Hawk, prof services-10.00 ;Cam Wal Electric, utilities-333.88 ;CAN Surety, insurance-1,132.00 ;Cardmember Services, other services/repairs/supplies-1,248.35 ;Central Diesel, repairs-1,449.78 ;Chamber of Commerce, prof services-6,624.25 ;Charles Dutt Electric, repairs-116.83 ;Colonial Research, supplies-84.03 ;Colonial Research, supplies-84.04 ;Credit Collections Bureau, garnishment-209.92 ;Dacotah Insurance, other services-50.00 ;Dakota Electronics, repairs-260.00 ;Dakota Pump & control, machinery & equipment-5,219.70 ;Fabra Tech, other services-34.80 ;Fabra Tech, prof services-79.90 ;Family Dollar, supplies-21.50 ;Ferguson Waterworks, supplies-18.57 ;Fisher Scientific, chemicals-371.76 ;Fleet Services, gasoline-1,310.86 ;Gas N Goodies, supplies-84.50 ;Gienger Sales, supplies-123.00 ;Great Western Bank, payroll taxes-14,450.07 ;GTC Auto Parts, supplies/repairs-449.72 ;High Point Networks, computer -1,306.00 ;Holiday Inn, travel-245.97 ;Homestead Building Supply, supplies-12.87 ;Intoximeters, supplies-140.00 ;Jensen Rock & Sand, gravel-232.37 ;John Deere Financial, supplies-178.50 ;Lamb Chevy, vehicle replacement-29,613.00 ;Linds Hardware, supplies-972.69 ;M&T Fire & Safety, uniforms/equipment-440.00 ;Marco, Inc., supplies-274.26 ;MDU, utilities-11,940.10 ;Merkels, supplies-42.40 ;Mitch Voller, supplies-456.42 ;Mobridge Tribune, publishing-172.94 ;Mobridge Youth Organization, MYO-15,000.00 ;MoRest Motel, supplies-60.00 ;Office Depot, supplies-143.20 ;Payless foods, supplies-16.00 ;Pete Lien & Sons, chemical-4,004.91 ;Runnings Supply, repairs/supplies-11.98 ;Sanitation Products, truck maintenance-75.10 ;SD Firefighters Assoc., dues-225.00 ;SD Secretary of State, prof services-30.00 ;SD State Treasurer, sales tax-1,244.30 ;SDML, conference-374.00 ;SDRS Supplement Retirement Plan, retirement-50.00 ;Sioux Corporation, supplies-98.54 ;Slater Oil, gasoline/diesel/LP gas-4,738.49 ;Steve Gasser, travel-56.98 ;TKs Plumbing, repairs-265.07 ;Total Administrative Services, flex-443.85 ;US Dept of Education, garnishment-126.90 ;USDA-Rural Development, loan payment-2,925.00 ;USDA-Rural Development, loan payment-2,373.00 ;UST Fire Apparatus, fire truck-137,064.00 ;Valley Motors, repairs-103.67 ;Valley Telecommunications, utilities-821.16 ;West River Telecommunications, phone-1,479.73.

Salaries: Administration-2204.30; City Administrator-1991.27; Police Department-27991.89; Street Department-5139.47; Airport-1224.00; Library-2782.93; Auditorium-1398.44; 24/7-169.22; Water Department-8177.32; Sewer Department-5145.19.

nps.gov

National Park Service
U.S. Department of the Interior

National Register of Historic Places

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Education & Interpretation

TITLE LIST DISPLAY

From: NPS Digital Library
Term(s) Searched: South Dakota and mobridge
Records Displayed: 1 to 10 of 10

Go back to: Revise Search

Sort By: **Title** | Relevancy | Modified

- Brown Palace Hotel *[Image]* 9%
- Brown, A. H., Public Library *[Image]* 9%
- Brown--Evans House *[Image]* 9%
- Gravel Pit Site (39WW203) *[Image]* 9%
- Johnson Barn *[Image]* 9%
- Mobridge Auditorium *[Image]* 9%
- Mobridge Masonic Temple *[Image]* 9%
- Molstad Village *[Image]* 9%
- Molstad Village *[Image]* 9%
- Sitting Bull Monument *[Image]* 9%

Prev | 1 | Next

83003022	SOUTH DAKOTA	Walworth	Mobridge	Brown Palace Hotel	301 Main St.	19830127	Text	Photo
78002573	SOUTH DAKOTA	Walworth	Mobridge	Brown, A. H., Public Library	N. Main St.	19781222	Text	Photo
90000960	SOUTH DAKOTA	Walworth	Mobridge	Brown--Evans House	405 First Ave., W.	19900621	Text	Photo
86000834	SOUTH DAKOTA	Walworth	Mobridge	Gravel Pit Site (39WW203)	Address Restricted	19860403	Text	Photo
01000640	SOUTH DAKOTA	Walworth	Java	Java Depot	NW corner of Railway A	20010606	Text	Photo
05000950	SOUTH DAKOTA	Walworth	Mobridge	Johnson Barn	Approx 4 mi. WNW of C	20050830	Text	Photo
86001189	SOUTH DAKOTA	Walworth	Mobridge	Mobridge Auditorium	212 Main St.	19860523	Text	Photo
77001259	SOUTH DAKOTA	Walworth	Mobridge	Mobridge Masonic Temple	6th and Main Sts.	19770325	Text	Photo
10000953	SOUTH DAKOTA	Walworth	Glenham	Molstad Lake Park	1 3/4 mi N of HWY 12 o	20101129	Text	Photo
84001299	SOUTH DAKOTA	Walworth	Java	Moser, Wilhelm, House-Barn	Address Restricted	19841128	Text	Photo
84003421	SOUTH DAKOTA	Walworth	Java	Ochszbner, Jacob, Sr., House	Address Restricted	19840813	Text	Photo
87001730	SOUTH DAKOTA	Walworth	Selby	Selby Opera House	3409 Main St.	19870925	Text	Photo
99000680	SOUTH DAKOTA	Walworth	Selby	Walworth County Courthouse	4304 4th Ave.	19990603	Text	Photo

6.12.3 CULTURAL RESOURCES EFFECTS ASSESSMENT SUMMARY

Applicant City of Mobridge Project Contact City Administrator, Christine Goldsmith
Address 1401 Lakefront Drive, Mobridge, SD 57601 Telephone Number 605-845-3555

Legal Location of Project Tract One in the Industrial Park Subdivision of the South Half of the Southwest ¼ of the Southwest ¼ of the Northwest ¼ of Section 29, Township 124N, Range 79W
City Mobridge County Walworth Project No. _____

Project Description The project will construct a new primary clarifier, rehabilitate the existing primary clarifier for redundancy, install a new biofilter lift station, install a new ultraviolet disinfection system and disinfection basin drain. The project will also expand, update and commission a SCADA system for the plant. All work will take place within the existing wastewater treatment plant facility.

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.
Not Applicable.

Please describe below or attach information supporting the determination of effect.

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: Ted Dickey Date 11/19/14

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