

**303(d) WATERSHED PLANNING AND ASSISTANCE PROJECT
SEGMENT 3 FINAL REPORT**

SECTION 319 NONPOINT SOURCE PROGRAM



SPONSOR:

SOUTH DAKOTA ASSOCIATION OF CONSERVATION DISTRICTS

June, 2017

**This project was conducted in cooperation with the South Dakota Department of Environment and Natural Resources and the United States Environmental Protection Agency, Region VIII
Grants C998185-11, C998185-13, and C998185-15**

EXECUTIVE SUMMARY

Project Title: 303(d) Watershed Planning and Assistance Project – (Segment 3)

Grants: C998185-11, C998185-13, and C998185-15

Project Start Date: July 9, 2013 Project Completion Date: June 30, 2017 Funding:

Total Project Cost \$ 2,162,794.64

Section 319 Grants	FFY 2011	\$ 175,680.63
	FFY 2013	\$ 495,000.00
	<u>FFY 2015</u>	<u>\$ 72,319.37</u>
Total Section 319 Grants		\$ 743,000.00

Section 319 Expenditures	\$ 734,313.84
Match Accrued	\$ 967,794.75
Federal Funds	\$ 460,686.05
Total Expenditures	\$2,162,794.64

SUMMARY OF ACCOMPLISHMENTS

The project goal was:

“Continue to provide planning, design, and implementation of best management practices in selected 303(d) listed waterbodies in South Dakota.”

The goal was attained by reaching objectives designed to provide information, and technical assistance to landowners and local organizations to implement BMPs using a local-state-federal partnership.

The assistance provided resulted in the design of BMPs that are expected to reduce nonpoint source pollution from animal feeding operations; and restored, protected or stabilized riparian areas and streambank. The 303(d) project is a planning project with little or no implementation. Therefore, no load reductions were calculated for the project.

OTHER ISSUES

Project outcomes in addition to NPS pollution control include development of a:

- seamless mechanism to move from TMDL development to implementation.
- pool of trained resource planners to implement 319 projects in South Dakota.
- a “stronger” local-state-federal water quality partnership in the state.

ACKNOWLEDGEMENTS

The 303(d) Watershed Planning and Assistance Project was developed and completed by a partnership between local, state and federal agencies and organizations. While the South Dakota Association of Conservation Districts (SDACD) was the most visible organization because of its role as the project sponsor, the Association could not have successfully completed the tasks included in the workplan and attained the project goals without the participation and support of the partners listed below.

South Dakota's Conservation Districts
USDA Natural Resources Conservation Service
South Dakota Department of Agriculture
South Dakota Department of Environment and Natural Resources
South Dakota Department of Game, Fish and Parks
USDA Farm Service Agency
US Environmental Protection Agency
US Department of the Interior, Fish and Wildlife Service
US Geological Survey City of Sioux Falls
Big Sioux Watershed Project
Lewis and Clark Watershed Implementation Project
James River Watershed Implementation Project
Vermillion River Basin Implementation Project
South Dakota Discovery Center and Aquarium
East Dakota Water Development District
James River Water Development District
South Dakota Grasslands Coalition
Ducks Unlimited
South Dakota Pheasants Forever
South Dakota State University

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- B. Key to Conservation Practices

INTRODUCTION

The completion of projects in Total Maximum Daily Load (TMDL) watersheds would be expected to progress seamlessly from the watershed assessment to development of the TMDL through the implementation of the TMDL. However, this is the exception rather than the norm. Often, a lag occurs between completion and implementation of the TMDL. The result is a loss of momentum and interest at the local level when nothing seems to be happening to improve an impaired lake or stream. It was hypothesized that making the process more seamless would address the challenge.

Many of the sites that will require implementation of best management practices (BMPs) to reduce nonpoint source (NPS) pollution are known before the watershed assessment is completed and subsequent TMDL drafted. The 303(d) Watershed Planning and Assistance Project was initiated to provide a mechanism that renders the progression more seamlessly and “accelerates” implementation of BMPs for 303(d) listed waterbodies. The project, initiated in July 2003, provided the technical assistance needed to plan, obtain funding for, and construct BMPs in priority areas in waterbodies listed in the South Dakota 303(d) Impaired Waterbodies list.

During the years of the 303(d) project, the number of waterbodies assisted was expanded in response to requests from DENR to provide technical assistance for additional TMDL waterbodies which were added and funded in future project segment work plans.

Additional workplan changes were made to:

- accommodate changes in assistance identified as the project progressed.
- extend the period for which assistance would be provided by the project.
- hire consultants to help administer the day-to-day operations of the project.
- develop five-year strategic plans for priority implementation projects.
- hire consultants to complete whole farm plans and riparian area plans.
- provide funding for the assistance included in the future project workplans.

The priority watersheds and other areas served by the project are listed by South Dakota Association of Conservation Districts (SDACD) areas and other areas in Table 2. The SDACD watershed areas are shown in Figure 2. Table 2 also:

- provides a comparison of the priority watersheds and special concern operations identified in the PIP(s) or added at the request of DENR to those served.
- provides the result/status of TMDL implementation in the watershed and areas served.
- identifies a list of conservation districts that partnered in the project.

Technical assistance was provided by project coordinators, private organizations, other state and federal agencies and private engineering firms. Engineering firms designed animal waste management systems in some of the project areas. Nine resource management specialist FTEs were authorized by the first grant award. In segment 2, total FTEs were reduced to 2.25 partial positions for three project coordinators, three assistant project coordinators and one administrative assistant. This number changed to 2.75 FTEs

for segment 3 and later changed again to 1.5 FTEs by the end of the project (0.5-part time assistant coordinator and 1 full time clerical assistant). Some reduction in FTEs was due to existing staff moving to other organizations in full-time positions. Three consultants were also obtained, one to administer the day-to-day activities of the project as well as proposal and grant writing; a second to develop five year Strategic Plans for the implementation projects and complete whole farm plans; and a third to complete and implement riparian area and conservation plans for the Prairie Pothole Region in eastern South Dakota.

The service areas and specific duties of the specialists varied with the number employed and assistance needs as outlined in the Segment 3 continuation project implementation plans (PIPs) and as assistance needs changed during the project period.

The project coordinators worked closely with the conservation districts and other resource management agencies and organizations. The consultants worked state-wide with all active projects but their main effort focused on the implementation projects east of the Missouri River with priority going to those projects associated with SDACD. The coordinators and assistant coordinators:

- provided technical assistance for the development of NPS strategies and TMDL implementation projects
- contacted operators who managed properties identified a priority for NPS pollution control to aid with planning and installing BMPs
- implementation of BMPs at sites identified as priority areas for NPS control and
- applied for cost share funds.

Assistance provided by the consultants included:

- providing day to day administration of the projects and development of proposals
- developing five-year strategic plans and whole farm plans for identified implementation project areas
- developing riparian and conservation plans for project areas within the Prairie Pothole Region in eastern South Dakota.

The Lewis and Clark Watershed, Lower Big Sioux River, Vermillion River, and Big Sioux River implementation projects were awarded Section 319 funding through DENR and SDACD to provide NPS development assistance provided at the local and area level. The four watersheds listed above were given priority through the 303(d) project. However, the 303(d) project is a statewide project and does work with all the implementation projects in South Dakota. Figure 1, shows a map of South Dakota with the four priority watersheds identified.

Assistance by the coordinators provided the data needed for the nutrient management plans developed for the AFOs “assistance void” that occurred after the completion of the 319 funded Animal Waste Management Team Project. The coordinators also provided Nutrient Management Plan implementation assistance to operators of existing systems. The assistance included services such as review/revision of existing plans, promotion of

soil and manure testing, application equipment calibration and rate calculations, and record keeping.

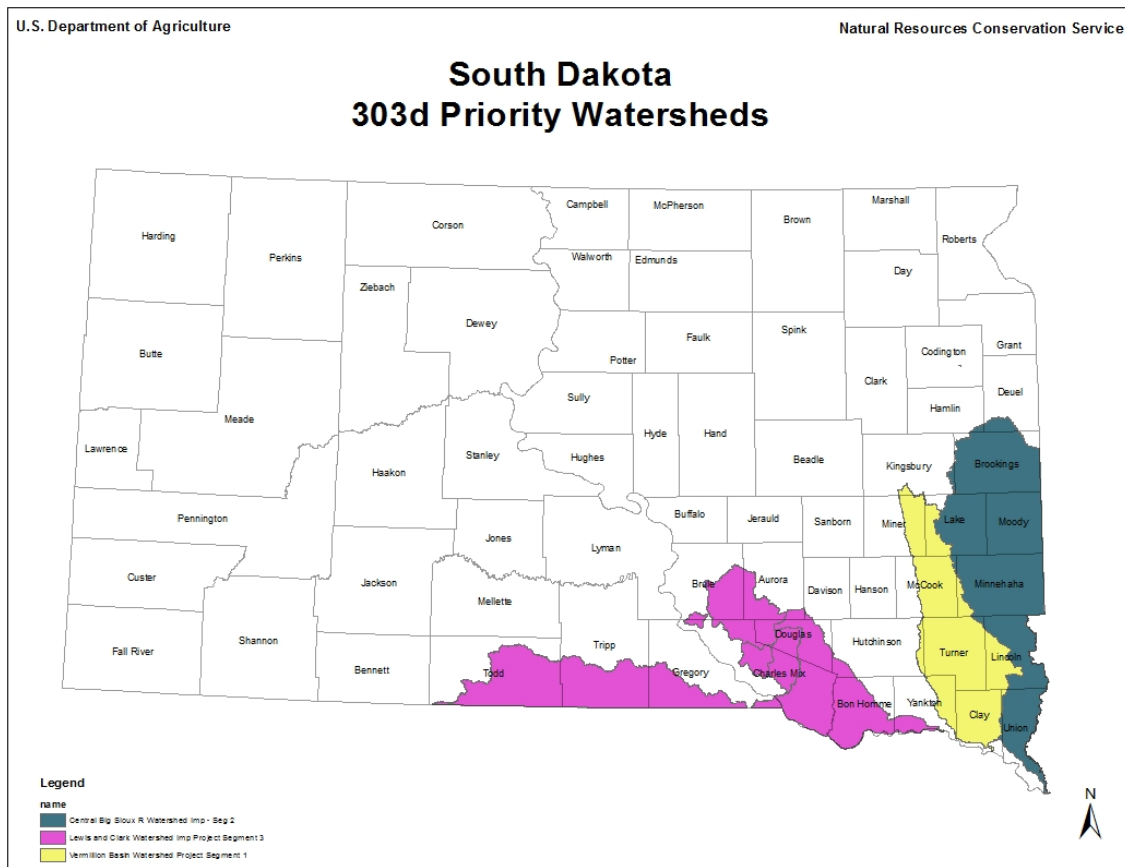


Figure 1 Map of 303(d) Priority Watersheds

Cost share funds for BMP installation were accessed through the United States Department of Agriculture (USDA) programs, including Farm Services Agency (FSA) Conservation Reserve Program (CRP); and Natural Resources Conservation Services (NRCS) Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), Conservation Stewardship Program (CSP), and Wetlands Reserve Program (WRP). See Table 5 located in the Coordination and Public Participation section for other sources of cost share funds.

Press releases, direct mailings, a project web site, presentations, displays and personal contacts were used to notify producers and the project residents of the project and assistance available. The project web site is located at: <http://www.sdconservation.org>

The total Section 319 Grant increased by \$72,319.37 to \$743,000 with funding of the 2015 Segment 3 project work plan. Required match also increased proportionately with the award of FFY 2015 funds.

During the period included in this report:

- \$731, 813.84 of the \$743,000 allocated by the segment 3 grant award was expended,
- local project partners and landowners/operators contributed \$872,238 toward the cost of BMP design and construction, and development and implementation of conservation plans.

The segment 3 319 Grant Award included funds from FFY (federal fiscal year) 2011, 2013, and 2015 Section 319 Grants awarded to DENR by EPA. All funds from 2011, and 2013 grants were expended with \$11,186.16 of FFY 2015 funds transferred back to DENR for use in other projects. These funds were not used prior to the Segment 3 project ending in June of 2017.

Local project partners and landowners/operators expended \$872,238 as local match to pay construction costs and engineering fees associated with the construction of animal waste management systems outside of implementation project boundaries and for the development and implementation of conservation and whole farm plans.

A comparison of planned versus actual expenditures appears in Table 6 in the Project Budget and Expenditures section of this report.

PROJECT GOAL and OBJECTIVES

Project Goal

The project goals were:

- Continue to provide the planning, design, and implementation of agricultural best management practices of selected 303(d) listed waterbodies in South Dakota.
- Develop five-year watershed based Strategic Plans for the four active 303(d) watershed projects. and
- Develop conservation plans with willing producers in selected 12 digit Hydrologic Units within the 303(d) project areas.

Goals were attained by reaching objectives designed to provide the information and technical assistance landowners and local organizations needed to implement the BMPs through a local-state-federal partnership. A description of the tasks completed to reach the objectives follows. The description includes a summary of the activities completed to accomplish the task and a comparison of milestones accomplished to planned.

Accomplishments by Task

The South Dakota Association of Conservation Districts (SDACD) was awarded one Section 319 grant during the project period. The awards and project implementation plans (PIPs) are hereinafter referred to as Segment 3 Project.

The tasks outlined in the Segment 3 Project PIP were essentially the same as those for the first two segments awarded with some adjustments and changes. This action was taken

because of changes needed for state law adjustments, changing attitudes, changing staff positions and the economic conditions that existed during the project. The task revisions are summarized in Table 1.

Table 1. PIP Changes – Segment Three Continuation Project.

Segment 3 Project PIP FFY 2013		Segment 2 Project FFY 2010	
Objective	Task	Objective	Task
1	1 & 2	1	1 & 2
2	3, 4, 5, & 6	2	3 & 4
3	7 & 8	3	5
4	9	4	6, 7 & 8
5	10 & 11	5	9
		6	10 & 11

Objective 1. Employ Resource Management Specialists to assist landowners with planning and installation of agricultural BMPs that reduce nonpoint source pollutants in selected 303(d) watershed areas.

Task 1. Hire project consultants

Milestones: 2013 Grant Award – Two consultants were hired to manage day-to-day operation of the project including training project personnel, assigning temporary work activities, project finances, reports, accomplishments, watershed planning, GIS, and setting up and maintaining the project in the DENR Tracker Database. Work with project sponsors to concentrate efforts in priority watersheds.

Accomplished: Two consultants were hired to complete the assigned work load. A consultant was obtained to manage day-to-day operation of the project including work assignments, reports, accomplishments, working with project sponsors on proposals and grant requests. This consultant assisted with the development of the Central Big Sioux PIP when no project coordinator was available and the development of eight project proposals: one for the Mississippi River Basin Initiative (funded at \$12 million regionally), one for the East Dakota Water Development District Wetlands Reserve Enhancement Program, and two for the Turner/Lincoln/Clay (TLC) Water District. They also assisted with the development of four Regional Conservation Partnership Program (RCPP) proposals of which two were nationally funded – Lewis & Clark/Lower James River WQ Project (\$2.7 million) and Central Big Sioux River WQ Project (\$2 million). In total, six of the eight proposals were funded which provided an additional 12 plus million dollars in water quality funding for eastern South Dakota.

During this time, a second consultant was obtained through joint funding provided by NRCS to provide Conservation Technical Assistance (CTA) to watershed sponsors and producers. This consultant developed five year strategic plans for the eight priority Section 319 Watershed Implementation Projects in eastern South Dakota. In addition, the City of Sioux Falls developed a five-year Master Plan for the Central Big Sioux River Watershed during this same period for a total of nine five-year Watershed Strategic Plans.

Task 2. Employ and train project coordinators and assistant coordinators to assist landowners with conservation planning and installing agricultural BMPs that reduce nonpoint source loading reaching selected 303(d) water bodies.

Milestones: 2013 Grant award – Three project coordinators, three assistant project coordinators and one Clerical Assistant.

Accomplished: Project completed within the authorized number of FTEs of 2.5 with adjustment to 1.5 FTEs by the end of the project. All staff members were trained and have attended 319 project training.

The number of FTEs employed varied within the number of 319 funded FTEs authorized for each grant award. Nine were authorized by the first grant award and four for the second grant. This was decreased to 2.5 for the Segment 2 and 2.25 for Segment 3. This number had reduced to 1.5 FTEs by the end of the project. Staff reduction was due to some of the projects ending and staff personnel transferring to other conservation organizations who continued the work of the existing implementation projects. The service area (Figure 2) and specific duties of the FTEs varied with the number employed and assistance needs as outlined in the project PIPs that evolved during the project period.

Staff reduction to stay within the authorized number of FTEs was often possible through attrition. The most common reason an employee left was employment with other watershed projects or conservation agencies. For example, the Natural Resource Conservation Service (NRCS) found project staff excellent candidates for full time employment because of the training and field experience received during their tenure with the project.

NRCS provided SDACD project employees with access to the agency's training programs, computer support and access to the USDA computer network which includes conservation planning tools. NRCS training included conservation planning, TOOLKIT, cultural resource assessment, nutrient management planning and refresher courses as needed.

Watershed project coordinators were provided by contractual agreement between the watershed project sponsor and SDACD. In most instances, the staff member had a split appointment with:

- One-fourth to one-half of the FTE being funded by staffing agreements with a watershed project sponsor and
- the remainder through a combination of this project and NRCS Contribution Agreement funds to provide assistance over a wider area and access to funding and practices not readily available through a watershed project.

The Lewis and Clark, Lower Big Sioux River, Vermillion River, and Central Big Sioux River Watershed projects entered staffing agreements with SDACD. By the end of the project, most of the staff from these projects had transferred to other organizations or retired. Those individuals who transferred to other organizations continue to work on the 319 projects through agreements with DENR and the hiring organizations.

Project staff members also attended 319 project coordinator training sponsored by the Department of Environment and Natural Resources (DENR). The training included the agency's 319 program strategies, grant management, load reduction determination, and data entry into the DENR Tracker Database.

Objective 2. Plan/design and assist with arranging for the installation of BMPs in 303(d) Watershed areas.

Task 3. Develop BMP installation plans/designs in target areas identified by assessment projects and /or models.

Milestone: Landowner Contacts – 1,200

Accomplished: 2,582 producer contacts were completed during Segment 3 of the project. If additional follow-up was needed, producers met with staff and discussion was held on the alternatives that were available to the producers if they were interested.

Milestones: BMP designs/plans – 75 funding ready and 25 installed.

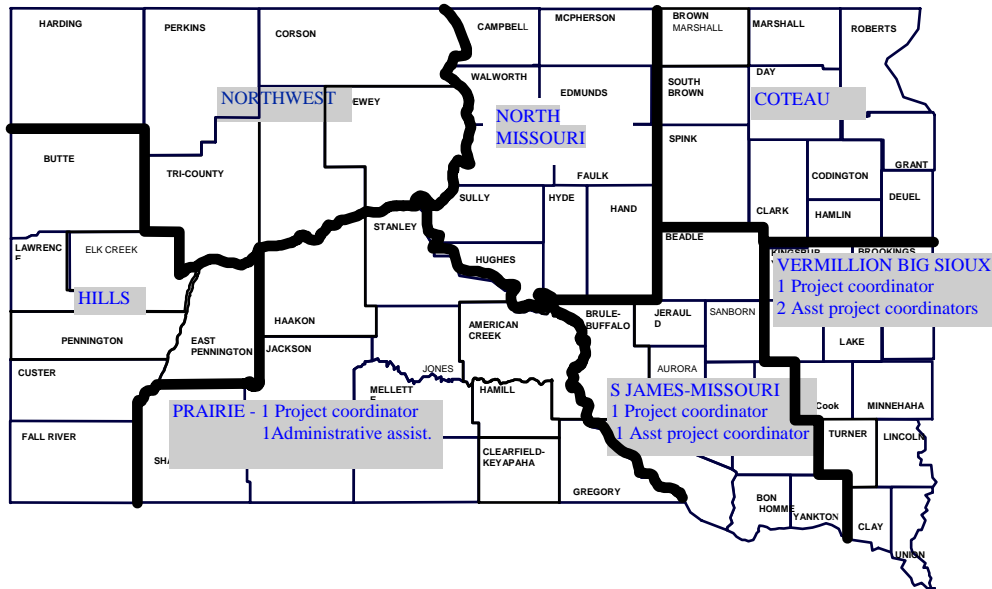
Accomplished: 268 designs/plans were completed with implementation being completed for 263 of the plans.

Table 2. Priority Watersheds and Other Areas Served.

TMDL Watershed/Other Areas by SDACD Area		Included in Project by			Assistance Provided	
Watershed/Other Area	Conservation District	1st st Award PIP	2 nd Award PIP	DENR Request.	Y/N	Status/Result
Coteau Area						
NE Glacial Lakes Watersheds	Marshall, Roberts			X	Y	NE Glacial Lakes Watershed Improvement Project
AFOs Rosebud Cattlemen’s Assoc.	Clearfield-Keyapaha, Gregory, Hamill			X	Y	Added to Lewis and Clark Watershed Imp. Project.
South James Area						
Academy Lake	Charles Mix	X			Y	Lewis & Clark Watershed Implementation Project developed
Lake Andes	Charles Mix	X				
Lewis & Clark Assessment Project	Charles Mix,		X	X		
Corsica Lake	Douglas	X				
Dante Lake	Charles Mix	X				
Geddes Lake	Charles Mix	X				
Lake Platte	Charles Mix	X				
Lower James River Watershed Project	Aurora, Hutchinson, Yankton		X	X		
Vermillion/Big Sioux						
Lake Preston	Kingsbury	X			Y	Turkey Ridge Creek/Vermillion River Basin Implementation Project developed.
Lake Thompson	Kingsbury	X				
Turkey Ridge Creek Watershed	Turner			X		
Vermillion River Watershed	Clay, McCook, Union			X		
Whitewood Lake	Kingsbury	X				Delisted
Central Big Sioux River Corridor						
AFOs – Watertown to Brandon	Brookings, Clark Codington, Deuel, Hamlin, Lincoln, Moody, Minnehaha	X			Y	Provided assistance to Central Big Sioux Watershed project.
Lower Big Sioux River	Union, Lincoln			X	X	Lower Big Sioux Watershed Implementation Project developed.
Statewide						

* Referred by DENR for determination of complaint validity and to offer options for voluntary compliance.

Figure 2: TMDL Watershed Service Areas



Task 4. Develop animal waste system designs and installation plans in target areas identified by assessment projects and/or models.

Milestones: 8 AFO systems designed with funding applications and 6 AFOs installed

Accomplished: 9 Animal Feeding Operations (AFO) were designed for projects that were outside existing implementation project boundaries. Part way through the extension period, 319 funding for AFOs was restricted for the project so only 4 AFOs were implemented during the project thus total implementation of AFOs was not accomplished.

The project coordinators identified sites for AFO design and installation using information provided by DENR and assessment Project coordinators. The information provided the location of priority areas (cells) in TMDL watersheds and other service areas. The information was usually in the form of maps generated from the Annualized Agricultural Nonpoint Source (AnnAGNPS) modeling of the watershed. With this information, project coordinators could focus BMP development assistance on sites where maximum load reduction benefits would be realized.

Priority maps and identified priority areas were provided by DENR for the following TMDL watersheds:

- Lewis and Clark Watershed East & West,
- Lower Big Sioux Watershed
- Big Sioux Watershed
- Vermillion River Watershed

Priority areas were also identified by other sources which included:

- the Grasslands Management and Planning Project,

- local conservation districts,
- the DENR Surface Water Quality Program, and
- NRCS district conservationists and specialists.

The project coordinators and other specialists worked closely with the conservation districts and other resource management agencies and organizations to ensure priority projects were undertaken.

Practices used to develop the BMPs are listed in Table 3. Descriptions of the practices are found in the USDA FSA standards for the conservation practices and NRCS electronic Field Office Technical Guide (fotg). The guides are available by accessing fsa.usda.gov and nrcs.usda.gov respectively.

Table 3. Practices Used to Develop BMPs.

BMP	Conservation Practices
Ag Waste System	313 ⁽²⁾ , 342, 350, 362, 380, 382, 500, 590
Critical Area Planting	342, 380, 393, 412, 515, 595, 612
Grazing Management	314, 328, 380, 382, 472, 512, 516, 528, 595, 612, 614, 642
Wetland Restoration	327, 342, 382, 393, 472, 644, 657, 659
Wetlands Constructed	CP8 ⁽¹⁾
Clean Water Diversion	342, 362
Nutrient Management	328, 595, 590
Sediment Trap	350
Riparian Restoration/Protection Includes Bank Stabilization	CP5A,CP8A,CP16,CP18B, CP21, CP23, CP23A,CP25, CP27, CP28,CP30, CP33, CP36, CP37,CP38E

1 See Appendix B for Key to Practices. All Conservation Practices funded by Conservation Reserve Program. = CP + 1 or 2 digits ⁽¹⁾. Conservation practices funded through NRCS = 3 digits ⁽²⁾.

Task 5. Develop Conservation Whole Farm Plans for selected 12-digit watershed(s) within the 303(d)-project area.

Milestones: Hire a planning consultant to develop 8 Conservation Whole Farm Plans.

Accomplished: One of the existing consultants was assigned to develop the plans and 17 Whole Farm Plans were completed.

There were 17 Whole Farm Plans developed with most of them funded through NRCS programs such as EQIP so that the conservation practices could be implemented. The plans were associated with the Skunk Creek watershed which was identified as a National Water Quality Initiative (NWQI) by the NRCS. Most of the applications for funding through NRCS were funded with several AFOs being constructed as well as other BMPs being implemented.

Task 6. Develop Conservation Easement Plans, Riparian Buffer Plans or other Conservation Plans.

Milestones: Hire a third consultant to do riparian area planning by making 30 producer contacts and develop 10 Riparian Area Plans annually.

Accomplished: 109 producer contacts were made and 35 Riparian Plans were developed during the three-year period. In addition to the riparian area contacts several hundred producer contacts for regular BMPs were made by this individual. Those numbers are included in the total producer contacts shown above.

Examples of cost share fund sources for all BMPs in Tasks 5 and 6 include:

- USDA Farm Services Agency's (FSA) Conservation Reserve Program (CRP)
- USDA Natural Resources Conservation Service's (NRCS) Environmental Quality Incentive Program(EQIP), Wetlands Reserve Program(WRP), Wildlife Habitat Incentive Program (WHIP), and Grasslands Reserve Program (GRP)
- South Dakota Natural Resources Conservation Grants
- Section 319 Implementation Project Grants
- SD Pheasants Forever
- US Department of Interior (USDI) Fish & Wildlife Service Wildlife Programs (North American Wetland Conservation Act and Partners for Fish & Wildlife)
- SD Dept. of Game, Fish & Parks (GFP) wildlife programs
- Ducks Unlimited
- East Dakota Water Development District
- City of Sioux Falls

Objective 3: Develop five-year strategic plans for (4) 319 watershed implementation project areas (Lower Big Sioux, NE Glacial Lakes, Lake Poinsett/Central Big Sioux River, and the Vermillion River Basin)

Task 7. Develop 4 five-year Watershed Strategic Plans

Milestones: Watershed Strategic Plans - 4
Steering committee/planning group meetings – 12
Future Segment Workplans - 4

Accomplished: Four five-year Watershed Strategic Plans were developed, with 44 workshop and committee meetings conducted. Four future segment workplans which were a part of the five-year Strategic Plans were developed for future use.

Four Strategic Plans following EPA's nine steps of planning were developed for the Lower Big Sioux River, Vermillion River Watershed, NE Glacial Lakes and the Lake Poinsett/Central Big Sioux River. Each plan contains a list of BMPs that can be used to improve water quality in the watershed and to provide needs for future segment workplans. Steering committee/planning group meetings were conducted as needed while the plans were being developed. A total of 44 meetings were conducted to get input from watershed producers and to provide information and education to the public about what was happening with the watershed implementation projects. Approximately 20 of these meetings were to

provide input for the development of project proposals for the Upper Minnesota River Project and the four RCPP proposals.

Task 8. Develop Riparian Buffer Zone overlays from stream beneficial uses defined in South Dakota Administrative Rule 74:51:03:02.

Milestones: Develop 28 map overlays

Accomplished: There were 28 maps developed during Segment 2 and distributed at the beginning of Segment 3 of this project. This item was removed from the project PIP when the project was extended in 2015. The task was accomplished as identified.

The maps show three priority areas: Zones A, B and C. Zone A includes domestic water supply, warm water semi-permanent fish life propagation, and limited-contact recreation waters. Zone B includes warm water marginal fish life propagation and limited-contact recreation waters. Zone C includes fish and wildlife propagation, recreation, and stock watering waters, and irrigation waters. The buffer widths are related to Water Quality Standards defined Chapter 74:51:01 of the South Dakota Administrative rules.

Depending on pollutants of concern such as sediment, nitrates, and bacteria waters with higher standards for these pollutants should be assigned wider riparian buffers. The Zone A buffer is 120-feet, Zone B buffer is 60-feet, and Zone C buffer is 30 feet

Objective 4. Implement a Public Outreach Program

Task 9. Create an awareness of project goals and objectives through media presentations using local news sources, mailings, and web based information.

Milestones: Workgroup and committee meetings and workshops - 6
News articles - 7

Accomplished: Workgroup and committee meetings and workshops – 44
News articles - 5

While the workgroup meetings milestone was accomplished, the use of news articles was not. An outreach program was used to inform producers and residents of the state about the project and the assistance available. Outreach activities included: a project web site, presentations, displays, workgroups meetings, proposal development meetings and personal contacts. The activities are described below:

Two articles were the result of interviews initiated by the Sioux Falls Argus Leader newspaper. The Argus has the largest circulation of papers in SD, reaching readers across the state. The articles were written regarding water quality and health of the Big Sioux River Watershed.

Three articles were developed with respect to the whole farm planning activities. One article referenced aspects of what whole farm planning is and what it can do for a

producer. The second was an interview with a producer and what the planning had accomplished for him. The third was a combination of the first two articles that was sent out to local farm media sources for publication. It was published in the Tri State Neighbor News.

Displays or presentations were set-up or presented at several events sponsored by resource management agencies, conservation districts, resource conservation and development councils, and commodity groups, universities, technical institutes, range clinics and farm shows.

Un-announced calls were found to be more effective than direct mailings in creating awareness that resulted in BMP installation. Direct producer contacts made using a referral from a Conservation District, producer group or USDA agency increased the likelihood the contact would result in a BMP being planned and installed.

During the project period, staff attended meetings sponsored by workgroups, and organizations to assist with planning activities and provide information about how to access assistance available through the project. Workgroup planning sessions were most often held to assist Conservation Districts and watershed project steering/advisory committees with project development and implementation. Project staff provided presentations or displays at the SDACD Area meetings, producer group meetings, USDA State Technical Committee and subcommittees meetings, SD NPS Task Force meetings, and range clinics.

A project web site was developed and periodically updated during the project period. Site design and maintenance was completed by SDACD's web master. The web site is located at: <http://www.sdconservation.org>. Persons accessing the site could learn about the project, technical and financial assistance available, how to request assistance, and other sources of resource management information. The site was activated September 9, 2001.

While data is not available to assess how effective a tool the web site was relative to project success, project staff reported that producers learned about the project and requested assistance with BMP planning and installation after accessing the web site.

Objective 5: Document and report project progress and success in attaining the project goals.

Task 10: Monitor project progress and evaluate the project.

Milestones: BMP Location Maps, Load Reductions and annual GRTS Reports

Accomplished: BMP location maps were not developed for the project; however, the other 319 implementation projects developed location maps for the practices they implemented but were planned under this project. No load reductions were identified since load reductions were removed from the PIP early in the Segment 2. All required reports were submitted. Information was collected to monitor progress toward meeting

workplan milestones, prepare reports and build partnerships; and evaluate success in attaining the project goal. Information collected is included with the related task or report section indicated below unless otherwise indicated elsewhere in this report.

Project activities monitored included:

- On-farm visits and landowner/operator contacts (Task 3),
- News releases and other media contacts (Task 6),
- Project expenditures (Budget Section),
- Local cash match and in-kind contributions (Budget Section),

Reports prepared using the information included annual GRTS reports, progress reports for SDACD's project partners and a project final report. The annual reports were prepared using a format provided by DENR.

Task 11: Prepare a final report using guidance provided by DENR.

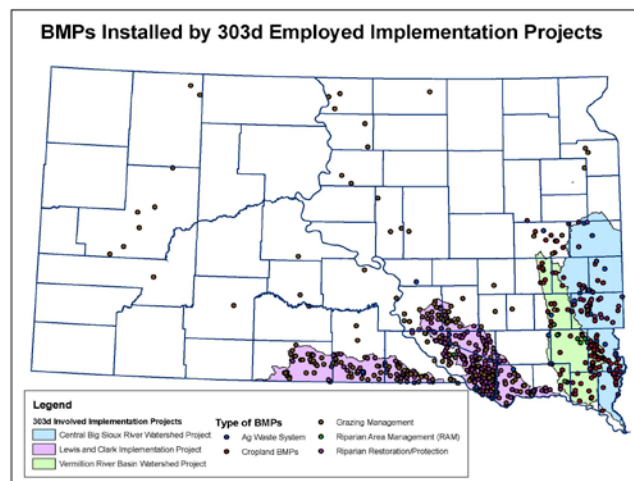
Milestone: Final Report submitted by September 30, 2017

Accomplished: Final report for the Segment 3 Project period as amended submitted.

The report was completed and submitted on schedule using guidance provided by DENR. The submission included both a print and an electronic copy.

The Association used its communications network to notify project partners that the report is available by accessing the DENR web site. The network includes electronic messages to the conservation districts and organization and agency partners.

Figure 3: Non-federally Funded BMPs installed in 303(d) Priority Watersheds



EVALUATION AND RELATIONSHIP TO NPS MANAGEMENT PLAN

Evaluation

As shown in Table 4, milestones established to evaluate project progress and success were met or exceeded for all tasks with exception of construction of AWMS and number of news articles written. See written text for the reasons for not meeting these goals.

Table 4. Planned Versus Accomplished Milestone.

Milestones by Task	Segment 3	Accomplished
Objective 1, Task 1		
Hire Project Consultants		
319 funded	1	1
Funded by Other Sources	1	1
Objective 1, Task 2		
Employ trained Staff		
Funded by 319 FTEs	2.25	2.25
Number of FTEs	7	7
Objective 2, Task 3		
Develop BMP installation plans/designs		
Producer contacts	1200	2582
BMP designs/plans	75	263
Objective 2, Task 4		
Develop AFO Designs & Plans Installed		
Designs/Plans	8	9
AWMS Constructed	6	4
Objective 2, Task 5		
Develop Whole Farm Plans		
Conservation Whole Farm Plans	8	17
Objective 2, Task 6		
Develop easements & Buffers Plans		
Riparian Producer Contacts	30	109
Riparian/Easement Plans	10	35
Objective 3, Task 7		
Develop 5 yr. Strategic Plans		
Watershed Strategic Plans	4	4
Future segment workplans	4	4
Objective 3, Task 8		
Develop Buffer Zone Overlay Maps		
Priority Zone Overlay Maps	22	22
Objective 4, Task 9		
Implement Public Outreach		
Work group meetings	6	44
News Articles	7	5
Objective 5, Task 10		
Document & Report Project Progress		
BMP Location Maps	1	1
Annual GRTS Reports	4	4
Objective 5, Task 11		
Prepare Final Report	1	1

Relationship to the SD NPS Management Plan

Activities completed during the project period supported attaining the goal of the SD NPS Program as outlined in the SD NPS Management Plan. Examples of support provided by the 303(d) Watershed Planning and Assistance Project include but are not limited to the following SD NPS Management Tasks:

- Tasks 2 - Use monitoring data gathered to complete a TMDL for a 303(d) listed waterbody.
- Task 3 & 4 – Implement TMDLs within two years of completion. Providing the assistance to install BMPs at identified locations prior to funding of implementation projects facilitated the seamless transition from TMDL development to implementation. Doing so supported DENR reaching this management plan milestone.
- Tasks 10. –Annual GRTS reports with BMP location maps. GRTS reports were provided to DENR for use in meeting 319 Program reporting requirements.
- Task 8 – Implement clusters of TMDLs on a 12 or 8-digit Hydrologic Unit Codes (HUCs). Assistance provided to local project partners encouraged the development and implementation of TMDLs in clusters using approved BMPs. Several implementation projects for clusters of TMDLs were awarded Section 319 funding during the project period. These included: the Lewis & Clark, Lower Big Sioux River, Central Big Sioux River and Vermillion River projects.
- Task 10 & 11 – Implement multiple TMDLs for several waterbodies across County and conservation district boundaries using financial and technical assistance from federal, state and local project partners’ sources to expand the TMDL implementation capabilities of the SD NPS Program.

BEST MANAGEMENT PRACTICES DEVELOPED OR REVISED

The project was designed to facilitate the implementation of BMPs in TMDL watersheds. Therefore, development of BMPs was not a planned product or an outcome of the project. However, an effective method of using a state/local/federal project partnership to implement BMPs more efficiently was developed and field tested.

The mechanism provides a template for how a local/state/federal water quality improvement partnership can be moved to a “higher level”. While DENR, SD Conservation Commission, SDACD and NRCS have a record of cooperation that maximizes BMP installation, training, certification, access to TOOLKIT and PROTRACTS, and computer support. NRCS and Section 319 Water Projects provided accelerated installation of the BMPs in priority watersheds. Accelerated installation of

the BMPs supports progress toward attaining water quality and other environmental goals for the partnership's respective programs. Among these are the:

- SD NPS Management Plan and TMDL implementation,
- USDA Clean Water Action Plan, and
- Vision for conservation outlined in *Today and Tomorrow: A Vision to Conserve South Dakota*” Natural Resources developed by SDACD and the SD Conservation Commission.

MONITORING RESULTS

Monitoring Activities

Monitoring activities outlined in the project PIPs centered on documentation of activities completed and calculation of load reductions from the BMPs installed. The monitoring activities completed are described in Objective 5, Task 10 and 11, in the Project Goal and Objectives section of this report.

Load Reductions

Load reduction reports were not submitted for this project. Factors associated with this non-submittal included:

- staff turnover during the early portion of the project period
- changes in responsibility for calculating the reductions
- challenges related to transferring BMP location information
- absence of implementation funding in the PIP

Water Quality

While water quality monitoring was not a component of the PIP, it is assumed that the 303(d) Project will help to improve BMP implementation in the active watershed projects. This assumption is based on two factors: the BMPs installed

- were at locations identified as sources of NPS pollution and
- are practices known to reduce NPS loading

The locations of the BMPs installed were reported to 319 project sponsors and DENR for use in determining water quality improvements in TMDL watersheds and other areas served by the project.

Landowners/operators receiving cost share funds to install BMPs are required to maintain the practice for the life of the practice as defined in the contract by the program providing the funds. To assist with maintaining the BMP, project staff continued regular contact with the cooperators after the BMP was installed. Post BMP installation assistance was found to be essential to ensuring the proper functioning of AWMS and grazing management systems. Both systems require the operator to learn and implement management practices to which they often have had little prior exposure. It has been

determined from previous experience that acquiring and putting the skills into action occurs most frequently when onsite assistance is readily available.

COORDINATION AND PUBLIC PARTICIPATION

Coordination

SDACD was the project sponsor. The Association's executive director, with oversight from the SDACD board of directors and SD DENR:

- hired and supervised project staff and contracted with consultants
- directed implementation of the project workplan
- coordinated participation with local, state and federal project partners.

The Association coordinated activities with its project using one-on-one contacts, reports and presentations at meetings sponsored or hosted by:

- Local workgroups
- Agricultural commodity groups
- Conservation Districts
- SD Association of Conservation Districts
- Water Development Districts
- South Dakota State University Cooperative Extension Service
- SD Vocational/Technical Institutes
- SD Nonpoint Source Task Force
- SD Conservation Commission
- SD Board of Water and Natural Resources
- Resource Conservation and Development Councils
- USDA Farm Service Agency
- USDA NRCS and the NRCS State Technical Committee and subcommittees

The project partners and contributions to project success are summarized in Table 5.

Public Participation

Objective 4, Task 9 outlines the activities completed to provide opportunities for the:

- residents of South Dakota to learn about the project
- informing project partners of the services offered
- notifying landowners and operators of the assistance available to install BMPs.

The activities completed to provide opportunities for participation were effective as indicated by:

- the requests for services from projects staff
- technical and financial assistance partnerships developed with other resource management agencies and organizations.

Table 5. Project Partner Contributions to Success

Agency/Organization	Contribution
Nongovernmental/Local	
SD Pheasants Forever	Financial and technical assistance for BMP installation.
Ducks Unlimited	Technical assistance for BMP installation
Local	
City of Sioux Falls	Financial and technical assistance for BMP planning and construction in the Central Big Sioux River Watershed.
Conservation Districts	Technical assistance for BMP prioritization, and installation; coordinate with local workgroups, host meetings; provide office space and clerical support; Develop SD WBM on Google Earth.
State	
SD Department of Agriculture	Financial assistance through the SD Resource Conservation Grants
SD Department of Environment and Natural Resources	Financial and technical assistance through the NPS Program, project oversight and training.
SD Department of Game, Fish and Parks	Financial and technical assistance for BMP installation and coordinate with SD Pheasants Forever.
Federal	
USDA-Farm Service Agency	Financial assistance for BMP installation through the CRP Program.
USDA-Natural Resources Conservation Service	Financial assistance for BMP installation through Environmental Quality Incentives Program (EQIP), Grasslands Reserve Program (GRP), Wildlife Habitat Incentives Program (WHIP), and Wetlands Reserve Program (WRP) Technical assistance and training for installation of USDA programs, office space and support, access to computer network and programs such as TOOLKIT and PROTRACTS.
USDI Fish and Wildlife Service	Financial and technical assistance for BMP installation through the North American Wetlands Conservation Act and Partners for Wildlife programs.
US Geologic survey	SD WBM on Google Earth Project.
US EPA	319 funding through SD DENR.

RESULTS AND RECOMMENDATIONS

Results

The results of activities completed during the project are:

- presented in previous sections of this report
- quantified in data tables that summarize the result of monitoring activities.

Anecdotal information and data indicate that:

- a cadre of specialists trained to install water quality BMPs was developed
- installation of BMPs in priority cells was accelerated
- seven to eight contacts with a producer are the norm needed to development and implement a BMP

- based on calculations, the BMPs reduced nonpoint source pollution
- seamlessly moving from TMDL development (assessment) to implementation results in maintaining momentum/local support for a TMDL project
- BMPs installed supported implementation of the project partner’s environmental and water quality management plans and policies
- the milestones used to measure accomplishment were appropriate benchmarks against which to gauge project progress and identify need workplan amendments
- tasks completed supported reaching the project objectives
- the project goal was attained.

During the project period, it was also confirmed, as suggested by results of the 319 funded Animal Waste Management Team, that intensive post construction follow-up with owners of a nutrient management system is essential to the success of the system.

Recommendations

The assistance provided by this project should be continued. The assistance delivery mechanism developed provides project sponsors and resource management agencies with:

- a seamless mechanism to move from TMDL development to implementation
- specialized assistance such as from the grasslands team and nutrient planners
- access to trained coordinators for the duration of a watershed project
- coordination of programs that cost share water quality improvement BMPs
- expertise that can be used to mentor other watershed projects.

The benefits outlined above support implementation of the SD NPS Management Plan, the USDA Water Quality Policy and the water quality goals in the South Dakota Conservation Commission’s vision for conservation outlined in *Today and Tomorrow: A Vision to Conserve South Dakota’s Natural Resources*.

PROJECT BUDGET AND EXPENDITURES

The budget comparison in Table 6 includes only those funds associated with several grant awards. Unexpended funds from prior awards were used during Segment 3 of the project. All changes to the budget were made with approval by DENR.

During the project period:

- Landowners/operators contributed \$156,298 toward the cost of BMP implementation and \$686,960 of “in-kind” work for the development and implementation of conservation plans and BMPs. This in-kind work included time and labor.
- Other federal programs provided financial support for the project. For example, an NRCS Cooperative Agreement provided nearly \$305,000 for BMP development and installation technical support.

Table 6. Project Budget Summary with Planned/Expended Comparison

Item	BUDGET		EXPENDED	
	319	Other Funds	319	Other Funds
BMP Funding	3,000.00	1,834,000.00	2,500.00	940,416.00
Asst Coordinators Salaries/Expenses	70,174.01	314,364.00	61,154.22	125,743.95
Coordinators Salaries/Expenses	111,182.79	316,485.00	112,022.12	222,032.00
Clerical	26,510.00	42,170.00	26,509.91	35,310.00
Conservation Planner Fees/Expenses	124,286.51	75,498.00	124,286.18	61,054.10
Riparian Buffer Planner Fees/Expenses	213,100.83		213,100.59	
Consultant Fees/Expenses	154,486.66	25,000.00	154,486.43	25,000.00
Administration	34,259.20		34,254.39	10,734.75
Audit	6,000.00		6,000.00	8,190.00
TOTAL	743,000.00	2,607,517.00	734,313.84	1,428,480.80

CONCLUSIONS

The data collected using monitoring activities and anecdotal information recorded support the conclusion that the workplan activities, as amended, resulted in:

“Accelerated planning, design, and implementation of best management practices in selected 303(d) listed waterbodies in South Dakota.”

The project goal was attained.

Attaining the goal facilitated moving a local/state/federal partnership to a “higher” level which:

- better coordinates and supports the implementation of local, state, and federal resource management organizations’ and agencies’ water quality management plans and policies
- provides a mechanism to seamlessly move from TMDL development to implementation
- develops a pool of trained resources specialists to:
 1. sustain the accelerated implementation of BMPs in TMDL watersheds and
 2. coordinate projects for local sponsors.

APPENDIX A

First & Second Grant Award PIP Objectives and Tasks

First Grant Award PIP Objectives and Tasks

Objective 1. Recruit, hire and train a cadre of eight Resource Management Specialists and a supervisor to assist landowners with planning and implementation of agricultural practices to reduce nonpoint source loadings to selected 303(d) listed water bodies

Task 1: Recruit, interview, hire and employ nine staff for this project.

Task 2: Train project staff in NRCS planning techniques and documentation practices so plans prepared will be certifiable by NRCS for USDA funding.

Objective 2. Implement progressive targeting to abate nonpoint sources of pollution in watersheds of selected 303(d) water bodies.

Task 3: Set initial target areas for agricultural BMPs in each watershed based on current DENR assessment information, expected practice funding and priority rankings, and local Conservation District and USDA staff knowledge of sources.

Task 4: Refine BMP targeting in project watersheds as DENR provides results of ANNAGNPS computer modeling and TMDLs.

Objective 3. Accelerate the planning, design, and implementation of agricultural BMPs in watersheds with selected 303(d) waterbodies.

Task 5: Create an awareness of project goals and objectives through media presentations in local news sources and mailings, and web based information. Staff will also attend and deliver presentations at meetings of local work groups, USDA State Technical Committee, NPS Task Force, Conservation Commission , etc.

Task 6: SDACD will contract with one or more engineering firms to provide engineering design, including comprehensive nutrient management plans for 90 animal feeding operations (AFOs).

Task 7: Contact owners and operators of lands targeted in Objective 2 to explain the project mission, services available, and funding opportunities as well as the potential of their operation to contribute pollutants to the impaired waterbody.

Task 8: Provide planning of BMPs, excluding the 60 AFO designs in the Vermillion – Big Sioux resource area, in the six regions to reduce nonpoint source pollution which will meet landowner/operator’s needs and meet USDA standards.

Assistance will include help in providing adequate documentation to apply for USDA funding.

Task 9: Funding and installation of approximately 90 percent of the plans developed in Task 8.

Task 10: In the Central Big Sioux River corridor, design through consulting engineering firms, sixty animal waste systems and comprehensive nutrient management plans for AFOs and prepare funding applications. This project will provide 85% of the cost share of design.

Task 11: Funding and installation of approximately 90% of the plans developed in Task 10.

Objective 4. Document project progress and success in meeting TMDL goals.

Task 12: Produce a map of the location of all BMPs that have been funded through the Specialists efforts and, if possible, installed through other efforts using ARC View and TOOLKIT and provide this information to DENR for load reduction analysis.

Task 13: Provide semiannual project status reports to DENR for GRTS input and to SDACD areas. The reports shall quantify the results that have been achieved by each of the seven SDACD areas as well as the overall achievements of the project.

Task 14: Produce a project final report meeting the EPA Region VIII final report guidance.

Objective 5. Assist Conservation Districts in preparing strategies to abate nonpoint source problems in other 303(d) listed water bodies.

Task 15: As requested by individual Conservation Districts, Resource Management Specialists may assist the district in formulating strategies, finding resources and drafting applications for projects to abate nonpoint source water pollution in 303(d) water bodies not addressed specifically elsewhere in this project work plan.

Second Grant Award PIP Objectives and Tasks

Objective 1. Employ project coordinators to assist landowners with planning and installing agricultural BMPs that reduce nonpoint source loading reaching selected 303(d) waterbodies.

Task 1: Maintain a trained project staff.

Task 2: Hire a project Consultant

Objective 2. Plan/design and assist with arranging for the installation of BMPs in 303(d) Watershed areas.

Task 3: Develop BMP installation plans/designs in target areas identified by assessment projects and /or models.

Task 4: Project staff will assist with development of a funding package.

Objective 3. By June 30, 2012 Develop 5-year Strategic Plans for five 319 watershed project areas (Lower Big Sioux, Upper Minnesota River, Lewis & Clark, East & West River, Central Big Sioux River, and Vermillion River Basin

Task 5: Develop 5 Strategic Watershed Plans

Objective 4. Implement a Public Outreach Program

Task 6: Create an awareness of project goals and objectives through media presentations using local news sources, mailings, and web based information.

Task 7: Develop a “Zero Phosphorous” program targeting urban property owners.

Task 8: Develop Riparian Buffer Zone overlays from stream beneficial uses defined in South Dakota Administrative Rule 74:51:03:02.

Objective 5. Develop a Standard Operation Procedure (SOP) for water quality monitoring during implementation projects.

Task 9: Establish local level baseline data (impairment parameter) before BMP installation, determine success of BMP implementation on water quality goals/reductions, determine if the overall water quality goal (TMDL) was achieved based on initial assessment, train project officers and coordinators and incorporate into workplans for all active implementation projects.

Objective 6. Document and report project progress and success in attaining project goals.

Task 10: Monitor project progress and evaluate project. Project progress will be monitored to determine the water quality impact of the project and to provided information to DENR to plan future watershed activities. The location of BMPs designed and installed will be mapped and provided to DENR.

Task 11: Prepare a final report using guidance provided by DENR.

APPENDIX B

Key to FSA Conservation Practices

CP5A	Field Windbreak
CP8	Grass Waterway
CP8A	Grass Waterways
CP16	Shelter Belt
CP18B	Establish Permanent Vegetation to Reduce Salinity
CP21	Filter Strips
CP23	Wetland Restoration
CP23A	Wetland Restoration - Nonflood plain
CP25	Rare Declining Habitat (Prairie Ecosystem – Tall Grass)
CP 27	Farmable Wetlands – Pilot Wetland
CP28	Farmable Wetland Buffer
CP30	Marginal Pastureland Wetland Buffer
CP33	Upland Bird Habitat Buffer – Bob White Quail
CP36	Prairie Pothole Duck Habitat Initiative
CP37	Duck Nesting Habitat Initiative
CP38E	Habitat for Upland Birds (CRP SAFE)

Key to NRCS Conservation Practices

313	Waste Storage Facility
314	Brush Management
327	Conservation Cover
328	Conservation Crop Cover
342	Critical Area Planting
350	Sediment Basin
362	Diversion
378	Pond
380	Windbreak or Shelterbelt Establishment or Renovation
382	Fence
393	Filter Strip
412	Grassed Waterway
472	Access Control
500	Obstruction Removal
512	Pasture and Haying
516	Pipeline
528	Prescribed Grazing
590	Nutrient Management
595	Integrated Pest Management
612	Tree/Shrub Establishment
614	Watering Facility
642	Water Well
644	Wetland Wildlife Habitat Management
657	Wetland Restoration
659	Wetland Enhancement