

SECTION 319
NONPOINT SOURCE CONTROL PROGRAM
INFORMATION & EDUCATION PROJECT FINAL REPORT

SOUTH DAKOTA NONPOINT SOURCE
INFORMATION AND EDUCATION PROJECT

SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
WATER RESOURCES ASSISTANCE PROGRAM

JANUARY 2007

This project was completed in cooperation with the South Dakota Department of Environment and Natural Resources and the United States Environmental Protection Agency, Region 8.

Grant # C9998185-98

EXECUTIVE SUMMARY

The workplan for the South Dakota Department of Environment and Natural Resources' 1998 Nonpoint Source Information and Education Project grant from the US EPA was designed to:

Heighten the nonpoint source (NPS) awareness of South Dakota's citizens to facilitate changes in life activities that contribute to NPS pollution.

The department attained the project goal by completing activities:

- included in the project implementation plan and
- amended into the implementation plan to address challenges and opportunities encountered during the project period.

As a result of the implementation plan changes, the number of individuals and groups provided NPS information and opportunities for action was increased significantly over that originally projected.

Major project accomplishments include:

- development manure management materials that provided livestock producers and resource managers with information that is leading to the development and implementation of more effective nutrient management plans,.
- materials and training being used to improve grassland management,
- revised Silviculture BMPs and installation training that have proven effective in reducing NPS pollution from timber harvests,
- management tools that have improved project management at the local level,
- erosion and sediment control materials and training urban areas and the construction industry,
- support that has continued the expansion of a sustainable volunteer water quality monitoring program in South Dakota.

These and additional activities were completed through partnerships that involved over 20 groups, organizations, agencies and business.

TABLE OF CONTENTS

Executive Summary	I
Introduction	1
Project Goals, Objectives and Activities	5
Summary of Project Accomplishments	6
Evaluation of Goal Attainment and Relationship to Management Plan	27
Best Management Practices Developed/Revised	29
Monitoring Plan	31
Monitoring Plan Results and Discussion	33
Project Budget	37
Summary and Future Recommendations	39

List of Tables:

Table 1. Materials and Supplies Purchased to Support NPS Outreach Activities.....	23
Table 2. BMP Training and Demonstration.....	30
Table 3. Planned vs. Actual Project Output and Outcome Comparison by Activity....	35
Table 4. Project Budget Summary and Comparison.....	38

INTRODUCTION

INTRODUCTION

Implementation of a statewide nonpoint source information and education (I & E) program is one of the action items included in South Dakota's Nonpoint Source Management Plan. The South Dakota Nonpoint Source Pollution Information and Education Program was initiated during 1990 with a grant from EPA with continuation projects funded by Section 319 grants during 1994, 1996, and 1998. Most of the projects completed with support provided by the first two grants focused on agricultural operations, the source of an estimated 80 percent of the nonpoint source (NPS) pollution in South Dakota. Final reports for the 1990, 1994 and 1996 grants are available from the South Dakota Department of Environment and Natural Resources (DENR).

The activities completed during the initial grant segments made progress toward reducing NPS pollution originating from agricultural, and to a lesser degree, other sources. A review of the program was conducted by the South Dakota NPS Task Force and other resource management agencies using information provided by producers and ag commodity groups and the results of surveys conducted during 1990 and 1994. Major components of the information gained were:

- NPS pollution also originates from the nonagricultural activities,
- action by producers would be more readily achievable if other land users and urban areas were also targeted for action, and
- implementation of agricultural best management practices (BMPs) by farmers and ranchers is, in large part, dependant on the availability of technical and financial assistance.

Based on information, it was determined that significant progress would probably not be achieved unless a larger segment of the state's population was involved in addressing the problem.

The 1990 and 1994 NPS surveys conducted by the SD NPS I&E Program found that:

- water quality is very important to South Dakota residents,
- the state's residents are willing to do what is right when the facts are presented in a clear, concise and unbiased manner, and
- the projects implemented during the first four years of the program had not appreciably increased the proportion of the state's population that is aware of the causes of NPS pollution and how it can be prevented.

Based on the concerns expressed by the agricultural community and the information provided by the surveys, a project to more effectively control NPS pollution in South Dakota was developed. The goal established for the 1996 continuation project was:

“Heighten the NPS awareness of South Dakota's citizens to facilitate changes in life activities that contribute to NPS pollution”.

The current project segment was originally developed as an expansion of Objective 2, Task

2, Product 4 (Educational Materials) of the project implementation plan (PIP) for the department's 1996 Nonpoint Source Information and Education Grant which provided for the revision and publication of a new edition of *Grassland Plants of South Dakota and the Northern Great Plains*.

Revision and publication of *Grassland Plants of South Dakota and the Northern Great Plains* was completed within the original workplan milestone schedule using other funds available to the department and financial support from project partners. After discussion with the South Dakota Department of Environment and Natural Resources' (DENR) assigned EPA Region 8 project officer, it was agreed that the unexpended funds could be used to support the continuation of DENR's NPS I & E Program. The Section 319 award for the project totaled \$79,642.00.

An amended workplan was prepared and approved during spring 2002 to:

- provide additional activities that increase the awareness of the causes and effects of NPS pollution and
- support implementation of the SD NPS Information and Education Strategy.

NPS priority areas addressed by the strategy are:

- animal feeding operations (AFO/CAFO),
- nutrient management, and
- TMDLs

Activities added to the workplan that support implementation of the strategy included:

1. Develop/print NPS pollution prevention publications and manuals;
2. Exhibits at conferences/trade shows;
3. BMP implementation workshops/training;
4. Develop a sustainable volunteer water quality monitoring network;
5. Promote involvement in Year of Clean Water activities; and
6. Purchase miscellaneous supplies and materials.

During implementation of the workplan, it was determined that some activities were being adequately addressed by actions being completed by the department's project partners or should be changed to better address identified program needs. The changes included:

1. Replacing production of the *Watershed Project Development Guide* with production of the *SD Nonpoint Source Program Manual (South Dakota Watershed Project Funding and Technical Assistance Guide)*,
2. Discontinuing training for development of operation specific nutrient management plans as the activity was being address by other 319 and media program funded activities,
3. Adding the Erosion and Sediment Control Conference and Getting in Step In Workshop to the workplan using funds realized from savings in the completion of

- planned and discontinued activities, and
4. Adding a nitrate testing for private wells demonstration project using funds realized from savings in completion of planned and discontinued activities.

The project budget and milestone table were also amended to reflect the changes. Total 1998 grant funds budgeted for the project after the amendment equaled \$67,127.84. A later amendment extended the project period to January 1, 2006 to allow completion of activities that had been delay because of staff changes within DENR and by key project partners. The project was completed on schedule 1/1/06 as per the amended workplan.

A summary of project accomplishments and accomplishments appears in the Project Goals, Objectives and Activities section of this report.

PROJECT GOALS, OBJECTIVES, AND ACTIVITIES

PROJECT GOALS, OBJECTIVES, AND ACTIVITIES

The project goal:

“Heighten the NPS awareness of South Dakota’s citizens to facilitate changes in life activities that contribute to NPS pollution”.

was continued from the 1996 NPS Information and Education (I & E) Project segment to reflect that this project segment was developed as an expansion of Objective 2, Task 2, Product 4 (Educational Materials) of the project implementation plan (PIP) for the 1996 NPS I & E Grant from the Environmental Protection Agency (EPA).

Descriptive summaries of the activities complete to attain the project goal are presented in this report section. The summary for each activity includes information relative to:

- milestones,
- outputs/outcomes,
- project partners,
- participation level , and
- distribution of items produced or reports prepared.

A comparison of the planned versus achieved milestones is located in Table 2.

Copies of items produced or a final report, as appropriate for each activity, have been provided to DENR’s assigned EPA 319 Program contact at Region VIII.

Objective 2

Provide South Dakotan's with nonpoint source pollution information and opportunities for personal involvement in nonpoint source pollution control and prevention efforts.

Task 2. Increase awareness of the causes and effects of nonpoint source pollution.

Product 4. Educational Materials (Expansion).

Activity 1. Revise and print *Grassland Plants of South Dakota and the Northern Great Plains*.

Milestone: Revise and print 20,000 copies of *Grassland Plants of South Dakota and the Northern Great Plains*.

Milestone Status: Complete 10-20-99.

Outcome: Revised book, published, distributed and being used by resource managers to improve land management, especially that of grasslands.

Grassland Plants of South Dakota and the Northern Great Plains is the basic field

guide for SD grassland managers, including ranchers and hobbyists. The publication is also used by these groups in adjacent states.

Revision and publication were completed by the South Dakota State University Cooperative Extension Service. As part of the revision, additional information about the ecological significance of the plants was included in the book.

The revision and publication was completed within the original milestone schedule using other funds available to the department and financial support from project partners. The grant funds budgeted for the activity were reprogrammed to other activities included in the amended workplan.

Project partners providing financial support included the Natural Resource Conservation Service (NRCS); United States Forest Service (USFS); Bureau of Land Management (BLM); the SD Departments of Agriculture and Game, Fish, and Parks; the SD Nature Conservancy; Resource Conservation and Development Districts in South Dakota, Nebraska, Wyoming and Montana; and several private organizations and business. A partial list of organizations and business includes Ducks Unlimited, Dow Chemical, and Black Hills Power and Light.

The book was included in the Rancher's Tool Kit" developed by the Western SD Bootstraps Group. The tool kit was developed using funds provided by a Pollution Prevention Incentives to States Grant awarded through the SD Pollution Prevention (P2) Program. Complementary copies of the book were also provided to farmers and ranchers participating in the 319 funded Bootstraps Assistance Project (C9998195-97) implemented in partnership with the SD Association of Conservation Districts, local conservation districts, vo-ag teachers, and producers who plan managed grazing systems through the 319 funded Grassland Management and Planning Project (C998185-01).

Activity 2. Develop/print NPS pollution prevention publications and manuals.

Five Manure Management Publications/Manuals

Milestone: Five Manure Management Publications/Manuals.

Milestone Status: Complete 1-1-05.

Outcome: The five manure management publications developed, printed and distributed are being used by resource managers and livestock producers to develop and implement nutrient management plans that reduce pollution associated with livestock feeding operations.

Four of the publications are part of a five publication series that provides producers, resources managers and other interested persons information about the use of manure as a resource. Production of the publications was a component of the South Dakota Managing Manure for Profit and Environment Outreach Strategy. Agencies and

groups involved with planning and carrying out various parts of the strategy include the SD Dept. of Ag, SD State University, SD Association of Conservation Districts, local conservation districts and watershed projects, the Lower James and Randall Resource Conservation and Development Associations, SD Cattlemen's Association, SD Pork Producer's Council, SD Lakes and Streams Association, NRCS and DENR.

The publications are used by DENR, NRCS and the cooperative extension Service and SDSU Station Biochemistry Lab as the base documents used provided to producers with manure management information.

Titles included in the publication series are:

Straight Talk on Manure. The publication was produced during 2000 using funds from this grant, the DENR P2 Program and an EPA Region VIII 104(b) Grant to Utah Dept. of Agriculture and Food. The publication provides producers and the public easy to understand information about the "why and how" of manure management and where to get technical assistance. The publication is in third printing. Nearly 15,000 copies have been distributed.

Calibrating Manure Spreader Application Rates.

Milestone: Print 8,000 copies during summer 2002.

Milestone Status: Complete 8-29-02.

The publication was produced during 2002 with funds from this grant, the DENR P2 Program and project partners. The publication describes methods of calibrating solid and liquid manure application equipment. Approximately 7,500 copies have been distributed.

Sampling Manure for Nutrient Management

Milestone: Print 8,000 copies during spring 2003.

Milestone Status: Complete 4-18-03.

The publication was produced with financial support from this grant, the DENR P2 Program and project partners. The publication outlines procedures for collecting manure samples for nutrient analysis. Approximately 7,500 copies have been distributed.

Milestone: Print 8,000 copies during fall 2002.

Milestone Status: Complete 11-30-02.

Using the Results from a Manure Analysis.

Milestone: Print 8,000 copies during spring 2003.

Milestone Status: Complete 4-18-03.

The publication was produced with financial support from this grant, the DENR P2 Program and project partners. The publication describes how to use the results of a manure nutrient analysis to determine fertilizer value of manure and then use the information to prepare a nutrient management plan. Approximately 7,500 copies have been distributed.

Developing a Comprehensive Nutrient Management Plan.

Milestone: Print 8,000 copies summer 2003 (Revised to - winter 2004).

Milestone Status: Discontinued.

The publication was to summarize the steps for developing a comprehensive nutrient management plan that includes manure. The outline of publication contents was produced and reviewed by the project partners. Development of the publication was behind schedule. The delay in production was related to staff time available for the project because of recent retirements from DENR. Plans to complete development of the publication were discontinued when the project partners determined that the publication was not a priority at this time. In addition, there is disagreement in the ag community relative to what is needed - a nutrient management plan or a comprehensive nutrient plan. Until this is answered, the partners determined that a better use of funds was production of a soil sampling publication to "close the loop" created by the other publications in the series.

Sampling Soils for Nutrient Management.

Milestone: Print 8,000 copies winter 2004.

Milestone Status: Complete 1-1-06.

Development of the publication was completed as a substitute product - see previous discussion *Developing a Comprehensive Nutrient Management Plan*. The publication was produced with financial support from this grant, the DENR P2 Program and project partners. The publication outlines procedures for collecting soil samples for nutrient analysis. Thirteen thousand copies of the publication were printed and distributed.

The manure management publications are distributed locally through conservation district and extension offices. Large quantities are available from SDSU, the NRCS State Office and DENR. Electronic copies are available by visiting:

<http://www.state.sd.us/denr/DFTA/WatershedProtection/P2/Documents/Publications>.

AFO Operator's Manual

Milestone: Print 1,000 copies winter 2002-2003.

Milestone Status: Discontinued 9-30-04.

The manual was being developed under the leadership of SD State University Extension Service and NRCS for use at training sessions for AFO operators beginning spring 2003. Financial support for the sessions was being provided through a sub-grant to SDSU from Colorado State University's 319 grant for the Six-States in EPA Region 8 until the sub-grant was withdrawn during spring/summer 2003. Funding from this grant was to pay printing costs. The draft edition of the manual was field tested at three training sessions held during March 2003. The sessions were attended by a combined total of 30 animal feeding operation (AFO) operators, certified crop advisers (CCAs) and natural resource agency personnel. Two additional training sessions were planned for April/May 2003. The milestone for printing was moved to summer/fall 2003 because of delays encountered in holding the pilot training sessions. The activity was discontinued because of DENR and partner staff availability to finish the manual in a timely manner. Plans to provide the training are currently under review

South Dakota Silviculture (Forest) BMP Manual

Milestone: Print 5,000 copies by summer 2003 (Revised milestone - fall 2003).

Milestone Status: Complete 4-30-04.

Outcome: As evidenced by the results of the field audits, the revised manual is providing the timber industry with a resource that is being used to plan and install best management practices (BMPs) that are preventing and/or reducing nonpoint source pollution from timber harvest sites.

The first addition of the SD Silviculture (Forest) BMP Manual was developed during 1994 with financial support from an EPA 604(b) grant to DENR. The manual was out of print. In addition, field audits of timber harvests completed in partnership with the SD Forest Resource Association during 2001 as part of a 319 funded Silviculture BMP training program identified several changes to the manual that were needed. Visit the following web sites for information about the project:

<http://www.hpcnet.org/timberaudit>

Development of a revised edition of the manual that addresses the concerns identified during the completion of the 2001 field audits was completed through a partnership with the SD Department of Agriculture and the SD State University Cooperative Extension Service. Five thousand copies each of the manual and pocket version of the publication were printed. A copy of the manual is available by contacting DENR or the SD Department of Agriculture, Division of Conservation and Forestry.

The initial distribution of the manual took place during a BMP implementation training workshop for the logging industry held during summer 2004. The training was followed by a field audit of logging operations to evaluate BMP use and effectiveness. The training and audits were completed through a partnership with the DENR P2 Program and Black Hills Forest Resource Association with funding from DENR's P2 Grant from EPA. Other project partners included the timber industry, SD Department of Agriculture, SD Cooperative Extension Service and US Forest Service. Nearly 150 loggers and timber industry professionals attended the two workshops.

The results of the timber sale audits show that the BMPS are being implemented and are effective. A copy of the report detailing the results of the audit is available by accessing:

<http://www.state.sd.us/denr/DFTA/WatershedProtection/P2/Documents/04FieldAuditRpt.pdf>

Watershed Project Development Guide

Milestone: Print fall 2003.

Milestone Status: Discontinued 7-30-03.

Outcome: The financial and technical assistance guide produced as a replacement product is providing program and local project staff with a resource that has helped increase the use of resources available from potential project partners.

Revision of the *Citizen's Guide to Lake and Watershed Restoration Projects* produced several years ago using funds from previous 319 I & E grants was planned. The manual, originally produced by DENR during 1995, describes sources of financial and technical assistance available to watershed projects. The revision of the guide was discontinued and replaced with revision of the *SD Nonpoint Source Program Manual (South Dakota Watershed Project Funding and Technical Assistance Guide)*. The production of the funding and assistance guide was determined to be the higher priority when limited staff time related to recent retirements from the department and the need to complete other project/publications such as the SD NPS Program Manual and Coordinator's Handbook were considered.

SD Nonpoint Source Program Manual (South Dakota Watershed Project Funding and Technical Assistance Guide)

Milestone: Print 500 copies during fall 2003

Milestone Status: Complete 4-30-04

Outcome: The financial and technical assistance guide is providing program and local project staff with a resource that has helped increased the use of resources available from potential project partners.

The revision of this publication replaced the revision of the *Citizen's Guide to Lake and Watershed Restoration Projects* (Watershed Project Development Guide) as described previously. The manual was retitled *South Dakota Watershed Project Funding and Technical Assistance Guide* to more accurately describe its contents. Both print and online versions of the publication were produced. An electronic version is located at:

<http://www.state.sd.us/denr/document.htm#Watershed%20Protection>

The manual was distributed to 319 coordinators at the 2004 SD 319 Project Coordinator's Workshop and is provided to new project sponsors and coordinators. As a result of the manual project and program staff have a readily available guide to project financial and technical assistance sources that has been a factor in the increased use of resources available from potential project partners.

Other Publications

Milestone: Develop three publications/print a combined total of 2,500 copies.

Milestone Status: Discontinued.

Outcome: One publication produced. The manual produced provides program and project personnel with a guide for planning lakeshore stabilization projects.

Shoreline Stabilization Guidelines, developed as a presentation by the Upper Big Sioux and Lake Poinsett Watershed Projects, was adopted for publication and printed. Nearly 100 copies have been distributed to resource management agencies and organizations, watershed projects and land development organizations in South Dakota. Copies have also been provided to EPA Region 8 NPS Program Coordinators, placed in the South Dakota State Library, and available by accessing:

<http://www.state.sd.us/denr/DFTA/WatershedProtection/WQInfo.htm>

Activity 3. Exhibits at conferences/trade shows.

Milestone: Six displays/presentations attended by 2,500 total individuals by February 2004.

Milestone Status: Complete 9-30-05.

Outcome: The displays/presentations at 32 events, attended by nearly 14,000 Individuals, exceed the milestone. Antidotal information indicates that the displays have increased awareness in the areas where used and increased local support for the departments' environmental protection efforts. In addition, the use of the displays at career fairs has focused student attention on environmental careers and been a factor in filling both seasonal and career service positions at both DENR and local projects.

Displays, presentations and support materials that promote NPS pollution prevention and control were developed and maintained for use by the department and its project partners. The specific displays/presentations prepared were selected based on identified needs expressed by and requests from DENR staff and project partners.

Displays and presentations developed include:

Total Maximum Daily Load (TMDL) - The display served as an information and discussion focal point to increase awareness of TMDLs and the TMDL process. The display was periodically updated with new graphics to ensure that the message conveyed was consistent with current requirements. Major events where the display was used include the:

- Phosphorus, Manure and Water Quality Conference held during 2001 and
- SD Association of Conservation Districts 2001, 2002, 2004 and 2005 conventions.

Total attendance at the five events exceeded 950.

Year of Clean Water (YOCW) - Involvement in YOCW activities with special emphasis on participation in National Water Quality Monitoring Day was promoted using displays, presentations and materials.

DENR staff or the department's project partners provided YOCW/National Monitoring Day information at the following events during 2002:

- SD NPS Task Force Project Tour,
- SD NPS Task Force meeting,(s)
- James River Water Quality Monitors Project Training,
- SD Petroleum Marketers Convention,
- SD Environmental Professionals Conference, and
- SD Association of Conservation Districts Convention SD Discovery Center and Aquarium Water Festival.

National Water Quality Monitoring Day Kits and information packets were provided to teachers whose classes attended the SD Discovery Center and Aquarium Water Festival.

An estimated 800 individuals were provided opportunities to learn about and participate in YOCW/National Monitoring Day activities.

Environmental Careers - A display and Power Point presentation are maintained for use by DENR staff at events that involve students. The display was used at 15 college careers fairs held during 2002, 2003, 2004, and 2005 and several Capital for A Day events held across the state by State Government.

Attendance at the nine SD State University career fairs totaled 5,000 plus students; the six SD School of Mines and Technology nearly. Attendance at the Capital For a Day events were not available but are estimated at in excess of 1,000 for a total audience reached by all events of more than of 12,000. A presentation about agriculture related environmental career opportunities was given to the SD State University General Agriculture Class during 2002 and 2004. Students reached totaled nearly 45.

Some of the students attending the career fair events applied for and several hired for either seasonal or career service employment with the department and partner resource agencies.

"Gathering and Healing of Nations" Conference - A display showing assistance programs available though DENR was set-up in the conference exhibit hall. The conference was a gathering of tribal, state/local and federal leaders and others organized by then Senator Daschle and SD Governor Rounds to explore how all segments of the state's population can better work together toward common goals. Both Senator Daschle and Governor Rounds were present. Total attendance at the conference exceeded 600. Approximately 100 individuals, including then Senator Daschle, visited the department's display.

A funding and technical assistance PowerPoint presentation was developed and used at the 2004 SD Lakes and Streams Annual meeting and NW Area Joint Conservation Districts meeting. The presentation is available for use by program staff for use at project planning meetings and workshops. Attendance at the two events totaled approximately 75.

Activity 4. BMP implementation workshops/training.

Milestone: Nine workshops attended by 510 total individuals.

Milestone Status: Complete 9-30-05.

Outcome: The 21 workshops, total attendance of approximately 750, provided

training that has lead to the implementation of BMPs that are reducing NPS pollution

Livestock Feeding and Grazing Operations.

AFO Operators - The training provides AFO operators with the tools and expertise needed to develop operation specific nutrient management plans. The training was being development and presented under the leadership of SD State University Extension Service and NRCS with financial support from a sub-grant to SDSU from a 319 grant to Colorado State University (see Activity 2 - AFO Operator's Manual). Funds provided by this grant were to be used to print the manuals (see Activity 2) and other materials needed for the training sessions. Three sessions were held during March 2003 to field test the training. A total of 30 AFO operators, certified crop advisers (CCAs) and natural resource agency personnel attended the sessions. Two additional training sessions were planned for April/May 2003. Attendance at these sessions was not available for inclusion in this report. The project was discontinued. (see Activity 2 - AFO Operator's Manual)

Milestones: Course development complete winter 2002 -2003. Pilot training Session Planned for spring 2003.

Milestone Status: Discontinued 4-30-03.

Outcome: The course was developed and field tested at three workshops attended by 30 total operators, CCAs and resource managers. The Materials developed are being used by resource managers as they plan and complete training sessions for livestock producers. Interest in has been expressed relative to revisiting the possibility of providing the training.

Grazing/Riparian - A managed grazing workshop was sponsored through a partnership with the SD Grassland Coalition, SDSU Cooperative Extension Service, and NRCS. Planning was completed with assistance from the Lower James Resource Conservation and Development Association and the coordinator for the Coalition's 319 funded Grassland Management and Planning Project. For information about the Grassland Management and Planning Project visit:

<http://www.sdconservation.org/grassland>.

The workshop was held September 9-11 in the Chamberlain/Oacoma area was attended by 34 ranchers, and tribal and organization/agency resource management personnel Attendance was limited to about 30. Those attending were selected from over the 50 applications received. Workshop sessions included both classroom and field learning experiences. The classroom segments of the workshop included presentations grassland managers, extension and agency personnel about the benefits of Management Intensive Grazing (MIG) as well as nutrition requirements of livestock. Bob Budd, Society for Range Management (SRM) President, was the lead off speaker. The first night a ranchers' panel was held with four ranchers from

Veblen (Neil Bein), Sturgis (Ed Blair), Highmore (Jim Faulstich) and Bob Budd (SRM President, Lander, Wyoming). The field exercises included a pasture allocation exercise. Working in groups, the participants constructed a paddock using poly wire and plastic posts to build a paddock that would provide three, four or five heifers enough forage for one day. During day two, the paddocks were evaluated and the students made adjustments for the next 24 hour grazing period. After dinner the second night, attendees were encouraged to ask questions of the various presenters with questions specific to their operations. Day three the final evaluations of the pasture allocation exercise were made. Ecological sites, grazing systems, fencing, water systems, water cycle and mineral cycle were some of the other topics covered during the classroom and field exercise sessions. A field trip to the Karlen managed grazing demonstration site was part of the school visit. For information about the site visit:

<http://www.sdconservation.org/grassland>.

The evaluation completed by the participants rated the workshop as excellent. A post project evaluation session conducted by the project partners found that there was support to continue the workshop as an annual event. The evaluation also identified changes that should be made to improve the experiences offered.

Based on the success of the 2003 event, workshops were held during September 2004 and 2005 with financial support from the Section 319 funded SD Grasslands Management and Planning Project.

Milestone: One workshop for approximately 30 ranchers/resource managers during fall 2003.

Milestone Status: Complete 9-11-03.

Outcome: While the 34 operators and resource managers learned how to plan and implement rangeland BMPs at the school, a more important outcome was that the event lead to the development of the SD Grazing School which is held annually.

Urban Sediment Control/Construction BMP Workshop.

Four one-day storm water workshops for the construction industry were held during spring 2003 in partnership with DENR's Surface Water and Pollution Prevention Programs and the Associated General Contractors of South Dakota. Total attendance at the four sessions exceeded 180 construction industry company staff members and local, state and federal agency storm water management professionals. The workshop was presented by Michael Chase, Certified Professional in Erosion and Sediment Control, who has over 20 years of experience in construction site erosion control in the Western US. Workshop classroom and field experience sessions centered on preparation and implementation of a pollution prevention plan for a

construction site with special emphasis on BMP selection and placement. Each workshop participant received a course manual, *How to Write and Implement a Storm Water Pollution Prevention Plan*, and a CD with BMP descriptions, plan templates and guidelines.

A follow-up workshop offering hands on BMP implementation training was planned through a partnership with the DENR Surface Water and P2 programs and the construction industry. The workshop, originally planned for summer/fall 2004 was rescheduled for summer/fall 2004 to avoid conflict with the first annual Erosion and Sediment Control Conference (see below) and later discontinued when key personnel involved with planning the event left for other employment.

Milestone: Three workshops attended by 100 individuals during winter 2003-2004.

Milestone Status: Discontinued 6-30-04.

Outcome: Based on evaluation forms returned by more than 180 construction industry persons and regulators, the four one-day workshops were, for the most part, well received and supported by the target audience. Those expressing dissatisfactions were determined to be those who do not see the value of controlling runoff from construction sites. The partnership developed while planning and conducting the workshop led to the development of an annual SD Sediment and Erosion Control Conference.

Sediment and Erosion Control Conference

Assistance was provided to develop and hold what was planned to be the first annual and South Dakota Sediment Control Conference. The conference was held during March 2004 in Pierre, South Dakota. The conference agenda included opportunities for attendees to interact and transfer information about highway construction erosion and sediment control. Project partners included DENR's Surface Water Program, Federal Highway Administration, SD Department of Transportation, SD Association General Contractors, and SD Soil and Water Conservation Society. The conference was attended by 330 transportation, construction industry, and local, state, federal and tribal resource managers. Post conference evaluations returned by attendees rated the conference as excellent. Based on the success of the workshop, the partnership hosted a second workshop during spring 2005. A third is planned for spring 2006. The partnership is also developing a unified storm water public information campaign with support from the SD Discovery Center's Section 319 I & E Grant (FY 2004).

Milestone: One workshop during winter/spring 2004.

Milestone Status: Complete 3-25-04.

Outcome: The workshop, attended by 330 individuals, provided a vehicle for ongoing sediment and erosion control for the construction industry in South Dakota.

The partnership developed also lead to the development of a statewide storm water public information campaign.

Local Watershed Project Coordinator's Training.

The project management and water quality monitoring training for watershed project coordinators initiated during 2000 as a joint venture with the ND 319 Program was continued during February 2003, 2004 and 2005. Attendance at the 2003 session totaled 74 – (45 project, 25 agency, 4 conservation district staff and one producer). A workshop for the SD project coordinators was held during spring 2004. Forty-seven individuals from 21 projects and five agencies attended the workshop. Each attendee was provided with a copy of the revised SD 319 Project Coordinator's handbook. The workshop agenda included sessions about financial and technical assistance sources, financial management, reporting, permits, threatened and endangered species, and water quality monitoring. The post workshop evaluations returned by attendees rated the workshop as nearly an 8 on a scale of 1-10 with 10 being the highest rating.

A workshop for SD project coordinators was also held during spring 2005. The workshop focused primarily on a project management and introduced the BMP tracking program developed by the SD NPS Program. Other topics covered included threatened and endangered species, GRTS reports, calculation of load reductions, and water quality monitoring. Fifty-one individuals from 26 projects and 14 agencies attended the workshop. Post workshop evaluations returned by attendees rated the workshop as nearly an 8.25 on a scale of 1-10 with 10 being the highest rating.

Preliminary plans are in progress for a 2006 workshop. Proposed emphasis will be funding BMP installation using multiple funding sources.

Milestone: Workshops winters 2002-2003 and 2003-2004 attended by a total of 50 program and project staff.

Milestone Status: Complete 1-1-06.

Outcome: The two workshops attended by a total of 172 program, project and resource management agency partner staff members improved project management and increased use of NPS related programs offer by other resource management agencies and organizations.

Getting in Step: Developing and Implementing Effective Outreach Campaigns Workshop

Outreach program training using the *Getting in Step: Developing and Implementing Effective Outreach Campaigns materials* developed by EP A was held during September 2004 through a partnership with the SD Association of Conservation Districts and EPA Region VIII. The training was conducted by Tetra Tech. Nearly 90 individuals from watershed projects, conservation districts, environmental

organizations, cities, state and federal agencies and Native American tribes attended the workshop. Evaluations returned by 52 of the attendees gave the workshop a 4.1 rating based on a five point scale.

Milestone: One Workshop by October 2004.

Milestone Status: Complete 9-30-04.

Outcome: The workshop, attended by early ninety individuals, has led to effective information and education programs conducted by local project sponsors and the concept of social marketing was introduced to watershed planners and managers.

Local Nitrate Testing and Education Outreach for Private Well Owners in Eastern SD

A private well nitrate testing outreach/demonstration project was initiated through a partnership with East Dakota Water Development District (EDWDD) during summer 2004. The project was patterned after a similar program developed by the Minnesota Department of Agriculture during the early 1990s. EDWDD developed or updated/modified existing well/wellhead protection materials and purchased a HACH DR/400 UV-VIS spectrophotometer and accessories. The equipment detects nitrate levels to the nearest 0.1 mg/L. The materials and supplies are used to introduce well owners to an inexpensive method of determining nitrate levels in private wells. Project activities introduce well owners to a procedure that provides immediate results rather than waiting for results from a lab at five clinics held during county fairs, farm shows or other local events. The clinics were conducted as a collaborative effort with local conservation districts. At the clinics, well owners were provided information about how they can prevent contamination at the wellhead and health problems if high nitrate levels are detected. Ten percent of the samples tested using the equipment were submitted to a lab for analysis to assess accuracy of the onsite analysis.

Preliminary accuracy assessment trials conducted in cooperation with the SD Geologic Survey indicate the equipment provides nitrate level results comparable to those determined found by a lab. The locations of the five nitrate testing clinics held were:

- Kingsbury County Farm and Home Show (DeSmet) - November 20, 2004,
- Grant County Farm Show (Milbank) - January 21-22, 2005,
- Clear Lake – January 29, 2005,
- Miner County Farm Show (Howard) - February 2-3, 2005, and
- Watertown Farm Show (Watertown) –February 9– and 12, 2005.

The equipment was also demonstrated at:

- at small town and rural water systems - Summer/ Fall 2005 and

- SD Association of conservation Districts Convention October 2005.

A total of 238 samples were analyzed. The results ranged from nondetect to 65 mg/L N-NO₃.

Thirty QA/QC samples were also collected at the events listed above. The samples were analyzed at the Olson Biochemistry Lab located at SDSU. Twenty-four of the samples were within five percent of the field readings. The lone aberrant result is believed to be the result of a miscalculation of the field results.

Based on the results of the project, a second unit will be purchase using project funds to expand opportunities for use at more local events by EDWDD and the DENR Drinking Water Program.

Milestone: Five Clinics by March 31, 2005

Milestone Status: Complete 9-30-05

Outcome: A drinking water nitrate testing and outreach program was initiated in South Dakota.

Forestry BMP Implementation Training

Forestry BMP implementation training for the logging industry was provided during summer 2004. The revised SD Silviculture BMP Manual (see Activity 2) was distributed at the two workshops. The training was followed by a field audit of logging operations to evaluate BMP use and effectiveness. The training and audits were completed through a partnership with the DENR P2 Program and Black Hills Forest Resource Association with funding from DENR's P2 Grant from EPA. Other project partners included the timber industry, SD Department of Agriculture, SD Cooperative Extension Service and US Forest Service. Nearly 150 loggers and timber industry professionals attended the two workshops.

Milestone: Two workshops summer 2004.

Milestone Status: Complete 9-30-04.

Outcome: Two workshops were attended by nearly 150 loggers and timber industry Professionals. As evidenced by the results of field audits, the training and revised manual are providing the timber industry with a resource that is being used to plan and install best management practices (BMPs) that are preventing and or reducing nonpoint source pollution from timber harvest sites.

Activity 5. Develop a sustainable volunteer water quality monitoring network.

Milestone: Develop a sustainable volunteer water quality network that provides

water quality data from lakes and streams in support of DENR's TMDL efforts by February 2004 and pay for the analysis of 70 samples collected by volunteer monitors.

Milestone Status: Complete 9-30-05.

Outcome: A statewide volunteer water quality monitoring program that supports DENR's TMDL efforts was developed. A statewide volunteer water quality monitoring program was developed. The cost of analysis for 115 samples was provided.

A sustainable volunteer water quality monitoring network that supports the department's TMDL efforts was being developed through a partnership with the SD Lakes and Streams Association. The base for the network was established with financial assistance from DENR's previous 319 I & E Grants and EPA Regional Geographic Initiative (RGI) Grants received by the Lakes and Streams Association through the Consolidated Funding Process. The Association:

- recruits and trains volunteers,
- monitors sample collection using an EPA approved protocol, and
- manages data collected.

The Association developed the sampling protocol as part of the activities funded by the RGI Grants.

DENR provides technical assistance for training, sample collection, and data management through its assessment workgroup, water quality monitoring equipment to volunteer monitors through the association, and pays lab analysis costs for samples collected by network participants.

Activities completed by the association with financial or technical support from the grant include:

- posting 2001,2002,2003, 2004, and 2005 monitoring data in report form at:
<http://www.sdlakesandstreamscom.>
- working with DENR staff to create a data base for entry of data in STORET,
- training 39 volunteer water quality monitors at the seven workshops collected and submitted nearly 200 total water quality samples from
 - 20 different lakes and
 - 4 different streams/rivers,
- Stenciling nearly 1500 storm drains,
- promoting participation in the YOCW Nation Water Quality Monitoring Day at three events,
- promoting World Monitoring Day, and

- continuing activities that promote interaction between several groups in the state that are involved with volunteer-based water quality monitoring.

During the FY 2003 field season, 35 network volunteers collected and submitted 42 total water quality samples from:

- 21 sites located on 15 lakes and
- 6 sites on 6 streams/ivers.

During the FY 2004 field season 20 network volunteers collected and submitted a total of 73 water quality samples from:

- 20 Lakes
- 1 river, and 1 stream

During 2005 sixteen sites at 9 lakes and 2 creeks/ivers were sampled. Monitoring training was continued using CDs and the web. SD volunteer monitoring data is stored on the Rocky Mountain Watershed Network web site:

www.rmwn.org

Following the 2004 field season, coordination of the program was transfer to East Dakota Water Development District. The voluntary change was necessary when SD Lakes and Streams underwent a recent reorganization.

Activity 6. Promote involvement in Year of Clean Water (YOCW) activities.

Milestone: Promotion awareness of YOCW and National Monitoring Day at eight events and distribute 50 National Water Monitoring Day kits before October 18, 2002.

Milestone Status: Complete 4-30-03.

Outcome: Information was provided at seven events and 49 kits were distributed. South

Dakota participated in the 2002 YOCW activities.

The department promoted involvement in the Year of Clean Water (YOCW) at several events. Special emphasis was placed on participation in National Water Quality Monitoring Day. The activities were completed through a partnership that included staff from the department's Watershed Protection, Surface Water Quality, Pollution Prevention and Information Services programs.

Activities completed to promote involvement in YOCW are summarized below.

- Governor's Proclamation declaring calendar 2002 as the Year of Clean Water

in South Dakota and October 2002 as Clean Water Month,

- News release about the Governor's Proclamation,
- Submitted a list of possible teachers for the Governor's use in selecting South Dakota's representatives to the National Youth Watershed Summit,
- Provided information about opportunities for participation in YOCW/ National Water Quality Monitoring Day activities through displays and presentation at seven events attend by over 800 individuals - see Activity 3,
- National Water Quality Monitoring Day Kits were provided to nearly 30 teachers,
- Distributed more than 50 YOCW information packets to teachers at the SD Discovery Center and Aquarium Water Festival and James River Water Quality Monitors Workshop,
- Distributed YOCW/National Monitoring Day posters at seven events (see Activity 3) and to the SD Lakes and Streams Association, SD Discover Center and Aquarium, NRCS and SDSU Biology-Microbiology department.

Activity 7. Purchase miscellaneous supplies and materials needed to support successful completion of DENR and project partner NPS pollution I & E outreach activities.

Milestone: Not established

Milestone Status: Complete 1-1-06.

Outcome: Supplies and materials needed to complete DENR and project partners outreach activities provided

Supplies and materials were purchased and registration fees paid to support successful completion of DENR and project partner's outreach activities. A summary of the items purchased appears in the Table 1. A more complete description of selected items follows.

Table 1. Materials and Supplies Purchased to Support NPS Outreach Activities.

Activity Category	Description	Cost (nearest \$)
Water Quality Monitoring		
National Monitoring Day Kits	20 Kits prepackaged for the event	335.00
Volunteer Monitoring Equipment	YSI meters, transparency tubes, and general monitoring supplies	4,332.00
Water Quality Analysis	Lab fees for volunteer monitoring samples	8,373.00
Displays/Presentations		
Registration Fees	Registration fees for conference and career fairs	575.00
Graphics	Mounts/graphics for displays	1,762.00
Earth Balls	Give away item with DENR contact information	1,925.00
Repairs	Part for display board	35.00
Workshops/Training		
Registrations	River morphology class	1,600.00
Water Festivals	Materials for pre-festival activity kits	2,505.00
Project Coordinators	Notebooks and printing	402.00
Project Wet Materials	Materials for Workshops	1,847.00
Storm Water	Manuals, CDs and printing	5,175.00
Printing/Web Development		
Manure as a Resource	Print three publications Soil and manure test results reporting program.	3,914.00 5,040.0
Total		35,974.00

While listed as supplies and materials in this section, the costs were transferred to the specific related activity in the budget section of this report to facilitate a comparison of the planned to the actual budget.

The Municipal Storm Water Management workshop was sponsored in partnership with DENR's Pollution Prevention and Surface Water Quality Programs. The April 2002 workshop was attended by nearly 80 municipal, state, federal and private sector storm water managers from CO, MT, ND, SD, and WY attended the conference. Materials provided included:

- *Designing and Implementing an Effective Storm Water Management Program Workbook/Manual*- 20 copies (75 copies purchased using 1996 I & E Grant) and
- Blank CDs to reproduce *Storm Water Strategies - Community Responses to Runoff Pollution* for distribution at the workshop. The CD was reproduced with permission from the Natural Resources Defense Council.

Field Manual on Sediment and Erosion Control Best Management Practices for Contractors and Inspectors - one copy. General reference for DENR project planners and managers.

The Storm Water Workshop for the Construction Industry was sponsored in partnership with DENR's Pollution Prevention and Surface Water Quality Programs

and the Associated General Contractors of South Dakota. Held during April 2003, the workshop was attended by approximately 180 construction industry and local, state and federal agency program staff attended the conference. Materials provided include:

- *How to Write and Implement a Storm Water Pollution Prevention Plan Manual*- 300 copies produced and
- Blank CDs to reproduce *Storm Water Management Manual for Western Washington*, Washington State Department of Ecology's storm water BMP manual and storm water pollution prevention plan templates and guidelines. - 300 copies produced.

Materials provided for water festivals include *Watershed Tour Kits* (17 total) and refill kits. The kits were purchased for distribution to schools scheduled to participate in the 2003 and 2004 Big Sioux Water Festivals quiz bowl. Copies of the *SD Forest and Water Adventures* CD (50 copies) and *The Wondrous Wanderings of Wendy Water* (25 copies) from the Project SAVE booklet series were provided for the teacher information packets.

Thirty-six hundred "earth balls" with the department's logo and web site address were purchased for distribution at events where the department display is set-up. This item provided a novel way to send contact information home with persons who visit an exhibit.

Assistance was provided to the soils lab at South Dakota State University to develop electronic soil and manure test results reporting capabilities. The system is online at:

<http://plantsci.sdstate.edu/soiltest/>

Assistance in locating sources of and obtaining materials for a water education program for middle school students was provided to the Pine Ridge Water Resources Program. Twenty-five copies of the *SD Forest and Water Adventures* (one per classroom), 1,000 plus copies of *Riparian Areas of SD* (for distribution to students) and sample copies of other DENR publications were provided directly by DENR. Other materials were located and needed quantities requested with direct mailing from several other agencies. Among these were NRCS, USGS and EPA.

Evaluation of Goal Attainment and Relationship to Management Plan

Evaluation of Goal Attainment and Relationship to Management Plan

The information provided in the Objectives/Tasks Accomplishments and Monitoring Plan Results and Evaluation sections of this report support the conclusion that the activities completed provided:

- South Dakotan's with nonpoint source pollution information and opportunities for personal involvement in nonpoint source pollution control and prevention efforts,
- activities that increase the awareness of the causes and effects of NPS pollution, and
- support of the implementation of the South Dakota NPS Information and Education Strategy.

Based on the conclusions, the project goal:

“Heighten the NPS awareness of South Dakota’s citizens to facilitate changes in life activities that contribute to NPS pollution”

was attained.

Best Management Practices Developed/Revised

Best Management Practices Developed/Revised

The project activities completed were selected to provide:

- NPS control and prevention information,
- opportunities for action by individuals and groups,
- BMP implementation training and evaluation of practices installed,
- demonstration of NPS BMPs, and
- support for the development and completion of assessment and implementation projects.

A summary of BMP training and demonstration activities completed during the project period appears in Table 2. Information relative to the outcome of each activity is located in the Project Goals, Objectives, and Activities and Monitoring Results and Discussion sections of this report.

Table 2. BMP Training and Demonstration.

Activity Category	BMP	Activity
Training	Nutrient Management	Training materials and workshop for livestock feeders
	Grazing Management	Workshop
	Urban Sediment Control/Construction	Workshops and conference
	BMPs - sources of assistance and load reduction determination - all Types	Project Coordinator Workshops
	Silviculture	Silviculture BMP implementation
Demonstration	Ground Water	Private well nitrate testing clinics/demonstration

Monitoring Plan

Monitoring Plan

The project was developed as an expansion of the workplan for the department's NPS information and education project funded by Section 319 Grant # C9998185-96. The evaluation and monitoring plan included in the 1996 PIP was product based. Measures of success centered largely on tracking activity participation levels. The expanded workplan did not include an amended monitoring plan nor did subsequent amendments to the plan. Therefore, product based monitoring and evaluation was continued. Measures used to monitor and evaluate of the products (=activities) included:

- sustainable programs implemented through partnerships,
- effective use of BMPs,
- partnerships developed,
- target audience reached, and
- new projects developed as a result of an activity.

The data gathered through project monitoring activities is:

- included with the discussion of each activity in the Project Goals, Objectives and Activities section and
- summarized in the Monitoring Plan Results and Discussion section.

Monitoring Plan Results and Discussion

Monitoring Plan Results and Discussion

A summary the monitoring data collected is located in Table 3. The table includes a comparison of planned versus actual project outputs and outcomes. For a more complete description of activity outputs and accomplishments, refer to the Project Goals, Objectives and Activities section of this report.

The data shown in the table and information contained in the Project Goals, Objectives and Activities section indicates the activities completed:

- reached the target audiences,
- provided opportunities for action through community-based project leadership,
- increased participation in NPS related activities, and
- provided effective BMPs that are being implemented.

The information gathered through monitoring activities provided the basis to evaluate workplan completion and goal attainment discussed in the Evaluation of Goal Attainment and Relationship to Management Plan section of this report .

Table 3. Planned vs. Actual Project Output and Outcome Comparison by Activity.

Activity	Output	Quantity		Outcome
		Planned	Actual	
Revise and print <i>Grasslands Plants of SD and the Northern Great Plains</i>	Print revised book	20,000	20,000	Book revised and being used by resources managers to improve grassland management
Develop/Print NPS Pollution Prevention Publications and Manuals				
Manure Management publications	manure as a resource publications	5	4 manure 1 soils	nutrient management training and manure management guidelines used by resource professionals and producers.
South Dakota Silviculture (Forest) BMP Manual (revised)	manual revise/printed	5,000 copies	5,000 copies	BMPs are being installed and are effective in controlling NPS pollution.
<i>SD Watershed Project Funding and Technical Assistance Guide</i> (replaced <i>Watershed Project Development Guide</i>)		500 copies	100 copies & web access	Increased use of resources available through potential project partners.
Other Publications	3 NPS publications	3 publications 2,500 total copies	1 publication 90 copies plus web	The Shoreline Stabilization Guideline is providing a ready reference for program staff and local project coordinators.
Exhibits at Conferences/Trade shows	Displays/presentations at conferences and to interest groups	6 attended by 2,500 total individuals	32 attended by nearly 14,000 individuals	Increased awareness of and support for NPS pollution control.
BMP Implementation Workshops/Training	BMP Workshops	9 workshops attended by 510	21 workshops attended by approx. 750	The workshops provided training that has lead to the implementation of BMPs that are reducing NPS pollution
Livestock Feeding and Grazing Operations	Training for AFO operators	3 workshops attended by 300	3 workshops attended by 30	Materials developed are being used. There is interest in revisiting the concept as tool to assist mid-sized livestock operations.
Grazing/Riparian	Managed grazing training for operators and resource managers	1 workshop attended by 30	1 workshop attended by 34	Improved grazing management; workshop has become an annual event.

Urban Sediment Control/Construction BMPs (includes sediment and erosion Control conference)	BMP training for the construction industry	3 workshops attended by 100	5 workshops attended by 510	Urban sediment control BMP planning and Implementation training provided to agency and private industry; Sediment and Erosion Control Conference has become an annual event.
Local Watershed Project Coordinator's Training	Project implementation Training for watershed project coordinators	2 workshops attended by 50	2 workshops attended by 172	Improved project management and use of resources offered by resource agencies and organizations.
<i>Getting in Step: Developing and Implementing Effective Outreach Campaigns</i>	Outreach training	1 workshop	1 workshop attendance = 90	More effective outreach programs
Local Nitrate Testing and Education for Private Well Owners in Eastern SD	Nitrate testing clinics for private well owners	5 clinics	5 clinics	Easy to use drinking water nitrate testing and outreach program initiated in SD.
Forestry BMP Implementation Training	BMP implementation training for the logging industry	2 workshops	2 workshops attendance = 150	The BMPs in the revised forestry BMP manual are being installed properly and are effective in controlling NPS pollution.
Develop a Sustainable Volunteer Water Quality Monitoring Network	Volunteer monitoring network that support the TMDL process	Sustainable volunteer Network	Sustainable volunteer network	Statewide volunteer network that collects samples that support the TMDL process was developed.
Promote Year of Clean Water (YOCX) Activities	Involvement in the YOCW	8 promotional events; 50 sample kits distributed	7 events; 49 kits distributed	South Dakota participated in the 2002 YOCW activities and submitted sample results.
Miscellaneous Supplies and Materials	Materials to support DENR and partner outreach activities	Not stated	See Table 1	Supplies and materials needed to complete DENR and project partners outreach activities provided – see Project Goals, Objectives and Activities section

Project Budget

Project Budget

The project was awarded \$79,642.00 in Section 319 funds. The amount was reduced to \$67,127.89. The entire amount was expended. All budget amendments after approval of the amended workplan were within the same Task. Local project partners contributed \$32,625 toward completion of workplan activities; federal \$32,212. The amount contributed by local project partners toward revision and printing of the Grasslands book was not documented. Total project expenditures equaled \$131,965. A comparison of planned versus actual expenditures and partner contributions appears in Table 4.

Table 4. Project Budget Summary and Comparison.

Workplan Activity	Budget (Nearest \$)					
	319		Expenditures			
	Planned		319	Other Federal	State/Local	Total
	Original	Amended				
Activity 1 Revise/Print Grassland Plants of SD & the Northern Great Plains	0	0.00	0.00	30,000	N/A	30,000
Activity Total	0	0	0.00	30,000	0	30,000
Activity 2 NPS Pollution Prevention Publications and Manuals						
Five Manure management Publications/Manuals	16,000	8,500	3,914	0	0	3,914
SD Silviculture BMP Manual	15,000	10,000	6,775	0	5,131	11,906
Watershed Project Development Guide	1,000	1,000	0	0	0	0
Other Publications (Soil & Manure Test Reporting)	5,000	5,000	5,040	0	3,360	8,400
Activity Total	37,000	24,500	15,729	0	8,491	24,220
Activity 3 Exhibits at Conferences and Trade Shows						
Registrations	500	500	575	0	0	575
Materials and Graphics	5,000	5,000	3,757	0	0	3,757
Activity Total	5,500	5,500	4,332	0	0	4,332
Activity 4 BMP Implementation Workshops/Training						
AFO Operators	2,000	0	0	0	0	0
Grazing Riparian Areas (Grazing School)	4,000	5,000	5,000	0	3,335	8,335
Urban Sediment Control/Construction BMPs	5,000	5,000	9,144	1,969	1,970	13,083
Watershed Project Coordinator's Training	3,000	1,000	402	0	0	402
Nitrate Testing/Ed. Outreach for Wells in Eastern SD	0	0	13,500	0	8,962	22,462
River Morphology Class	00	0	1,600	0	0	1,600
Activity Total	14,000	11,000	29,646	1,969	14,267	45,882
Activity 5 Volunteer Water Quality Monitoring Network						
Sampling Equipment/Supplies	5,000	5,000	4,332	0	6,321	10,653
Lab Fees	5,000	10,000	8,373	0	0	8,373
Activity Total	10,000	15,000	12,705	0	6,321	19,026
Activity 6 Year of Clean Water						
Promotional Exhibits/Presentations	1,000	0	0	0	0	0
National Monitoring Day Kits (50 @ 16.75)	850	500	335	0	0	335
Activity Total	1,850	500	335	0	0	335
Activity 7 Supplies and Materials*	11,300	10,630	4,381	243	3,546	8,170
Activity Total	11,300	10,628	4,381	243	3,546	8,170
Total	79,650	67,128	67,128	32,212	32,625	131,965

* See Table 1.

Summary and Future Recommendations

Summary and Future Recommendations

The activities completed during the grant period resulted in successful completion of the amended project implementation plan and attainment of the project goal. As a result of the project:

- partnerships involving more than two dozen groups, organizations, agencies and businesses that contributed services and financial support were formed;
- an estimated nearly 20,000 individuals were provided with NPS information and opportunities for involvement;
- materials to continue and expand NPS pollution prevention and control efforts were produced and distributed;
- further development of a sustainable volunteer water quality monitoring program was facilitated;
- materials needed to improve nutrient management were produced and distributed;
- grassland and nutrient management BMP planning and implementation training was provided for livestock producers;
- timber harvest BMP training provided to the logging industry has resulted in the implementation of effective BMPs;
- the transfer of the SD NPS Information and Education Program transferred to the SD Discovery Center and Aquarium has proven to be an effective means for implementing the SD I & E Strategy; and
- the implementation of South Dakota NPS Management Plan was supported.

The partnerships and materials developed will provide the base to continue and expand the SD NPS Information and Education Program through the South Dakota Discovery Center and Aquarium. To maximize future program success, three actions are recommended:

1. continue implementation of the South Dakota I & E Strategy developed through the South Dakota Discovery Center and Aquarium,
2. target both urban and rural segments of the population, and
3. expand the use of the print and electronic media.