

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

SOUTH DAKOTA NONPOINT SOURCE
INFORMATION AND EDUCATION PROJECT
Grant # C9998185-96

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

JULY 2002

This project was conducted in cooperation with the US EPA, Region VIII

EXECUTIVE SUMMARY

The workplan for the South Dakota Department of Environment and Natural Resources' 1996 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:

- Production of a public involvement manual that provides resource managers with processes to increase stakeholder involvement in community-based coalitions that develop and complete NPS pollution projects.
- Support for the expansion and operation of sustainable volunteer monitoring, storm drain stenciling, and Adopt*A*Stream programs in South Dakota.
- Formation of an interagency manure management workgroup that produced videos, television program segments, publications, exhibits, workshops and projects that provide practices that improve grassland and manure management.
- Conversion of the interactive forest and watershed management modules from a touch screen (Kiosk) to a CD format that can be used on a personal computer.
- Assistance to local groups that resulted in sustainable local sponsorship of water festivals in South Dakota.
- Septic system operation and maintenance training workshops and an informational video and television program segments.
- Development and implementation of a Silviculture BMP education program.
- Training for municipal storm water managers.
- Increase in the BMPs applied to prevent and control NPS pollution from livestock and forestry operations and storm water.

These and additional activities were completed through partnerships that involved over 40 groups, organizations, agencies and business and provided NPS information and opportunities for action to over 380,000 individuals.

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	21
Best Management Practices Developed/Revised	23
Monitoring Plan	25
Monitoring Plan Results and Discussion	27
Project Budget	30
Summary and Future Recommendations	32

INTRODUCTION

INTRODUCTION

Implementation of a statewide nonpoint source information and education (I & E) program was one of the action items included in South Dakota's first Nonpoint Source Management Plan. According to the plan, the I & E program was to first inform the public why surface and ground water supplies should be protected and then show how these resources can be protected.

The South Dakota Nonpoint Source Pollution Information and Education Program was initiated during 1990. Most of the projects completed during the first six years of the program focused on agricultural operations, the source of an estimated 80% of the nonpoint source (NPS) pollution in South Dakota.

While progress was made toward reducing NPS pollution originating from agricultural, and to a lesser degree other sources, 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 information that led to this conclusion was the message communicated to the South Dakota NPS Task Force and other resource management agencies by producers and ag commodity groups and the results of two surveys. Major components of the message 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.

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 project was:

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

Project activities that:

- build on previous program successes,
- raise the general public's awareness of NPS pollution causes and solutions,
- involve a wider segment of the state's population in the control effort,
- provide stakeholder groups with a planning and consensus building tool, and
- increase the use of prevention versus control based practices

were selected to attain the goal.

Several activities initiated through previous NPS project grants were selected for continuation/expansion in the project implementation plan (PIP). These included:

- continue and increase the number of water festivals through a cooperative effort with the SD discovery center and aquarium,
- update and transfer the modules on the touch screen display to a CD-ROM format and provide individual disks to all South Dakota elementary schools,
- expand the adopt-a-stream, volunteer monitoring and storm drain stenciling programs through a partnership with the SD Lakes and Streams Association, and
- expand assistance to local project sponsors.

New activities identified were:

- development of a water resources brochure to inform South Dakotans about the quantity and quality of the state's water resources and
- continue coordination and training in the use of Coordinated Resource Management (CRM) and expand use of the program statewide.

The activities expanded the program's target audience to include urban residents, lakeshore homeowners, municipal and county governments, and the construction industry. Many of the activities addressed sediment control. Completion of the many of the projects was planned as a joint effort with the South Dakota Pollution Prevention Program.

After the PIP was approved, several challenges were encountered that necessitated revisiting the workplan. Among these were:

- staff changes,
- difficulties encountered in completing some planned workplan activities, and
- effectiveness in reaching a larger target audience using the activities included in the project workplan.

To address the challenges, the PIP was revised with concurrence by the SD NPS I & E Steering Committee, SD NPS Task Force and the department's EPA 319 Program Project Officer. The principle revision was discontinuing direct financial support for water

festivals (Objective 2, Task 2, Product 2) and reprogramming the funds allocated to activities that will reach a greater segment of the state's population.

To provide unified program direction and a greater degree of coordination with watershed projects and other agency's I & E initiatives, a statewide I & E strategy was developed by a SD NPS Task Force I & E Subcommittee established for that purpose. The strategy was approved by the SD NPS Task Force and incorporated into the South Dakota NPS Management Plan during September 2000.

To accommodate the workplan changes, the grant period was extended through February 28, 2002, and later through February 28, 2004. Shortly after the second extension it was determined that administration of the 1996 SD NPS Grant would be better served by:

- transferring unexpended project funds to NPS watershed projects,
- closing the project grant, and
- amending the budget for the department's 1998 NPS I & E Grant (C9998185-98) by the amount transferred using funds available in the 98 grant.

The identified changes were completed during April 2002 with the concurrence of DENR's project officer at EPA, Region VIII.

The grant was closed with \$142,673.44 in total expenditures. Cash and inkind contributions provided by local project partners during the project period totaled \$155,387.18. A comparison of planned versus actual expenditures and local contributions appears in the Project Budget section of this report.

The department's 1998 NPS I & E grant was increased by \$59,642.02 to \$79,642.02. A revised workplan for the 1998 grant is currently under review. The funds involved in the transfers nearly equal the total savings realized during the project from:

- discontinued production of the water resources booklet,
- use of other funds available from the department and project partners to cover most of the costs associated with reprogramming the Forest and Watershed Adventures modules from a touch screen to a CD format,
- funding the project coordinator's travel expenses using other sources available to the department, and
- purchasing items as part of projects rather than as stand alone items from the funds allocated in the project budget for materials.

A descriptive summary of the activities completed during the project period appears in the Project Goals, Objectives and Activities section of this report.

PROJECT GOALS, OBJECTIVES AND ACTIVITIES

SUMMARY OF PROJECT ACCOMPLISHMENTS

Descriptive summaries of the activities complete to attain the project goal are presented in this report section. The summaries are arranged by workplan objective and task. The summary for each activity includes information about:

- milestones,
- outputs,
- partnerships/participation , and
- distribution of items produced or reports prepared.

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

Objective 1

Provide a planning and consensus-reaching method to facilitate development and resolution of nonpoint source related management issues to enhance protection and restoration of water quality in South Dakota.

Initiated: 7-11-97

Complete: 2-25-00

Task 1. Implement Coordinate Resource Management on a statewide basis.

Initiated: 7-11-97

Complete: 2-25-00

319 Budget: \$19,800.00 Expended: \$19,800.00 Match: \$20,139.17

The task was a continuation/expansion of previous efforts to institutionalize the use of coordinated resource management (CRM) as a natural resource planning and issue resolution tool in SD. The task was completed through a partnership with the SD Association of Conservation Districts (SDACD). A project steering committee was formed to provide project direction and coordination with state and federal resource management agencies. Agencies represented on the steering committee were DENR, USFWS, NRCS, the SD Cooperative Extension Service, SD Water Congress and SD Department of Game Fish and Parks.

During previous CRM project segments, funded from other sources, a facilitator's manual was developed, facilitators trained and local resource agency staff and leaders were provided orientation and introductory training in the use of the method. From information gained from a survey completed during 1998, it was concluded that CRM was being used but not as originally envisioned. Based on the results of the survey, the workplan was modified to accommodate the needs of targeted users.

Product 1: CRM Manual and Materials Revision Complete 5-1-99

319 Budget: \$4,500.00 Expended: \$15,442.44 Match: \$5,428.95

Output: Public Involvement Manual developed and published.
Nearly 400 copies distributed.

Revision of CRM manual was accomplished through Midwest Mediation. The original manual was intended for use by professional facilitators. The revised manual provides resource professionals with a guide to several processes that can be used to involve stakeholders in the formation of community-based coalitions that develop and successfully complete local watershed projects. An initial printing of 120 copies was completed during September 1999. All copies were distributed at a training session for conservation district leaders held during October 1999. A copy of the manual was also provided to Deb Lebow, EPA, Region VIII, Community Based Program during her August 1999 visit to SD.

Using input from persons attending the training sessions, final edits were made to the manual and 800 copies were printed. Copies of the manual were distributed in at training sessions. Copies have also been provided to DENR's assigned EPA 319 Program Officer at Region VIII, the Indiana Department of Natural Resources, Division of Reclamation, Cornell University, the City of Sioux Falls Water Reclamation Office, SD Department of Game Fish and Parks, SD vocational agriculture instructors, and the SD State Library.

Product 2. CRM Training and Mentoring Complete

319 Budget: \$5,300.00 Expended: \$0.00 Match: \$1,990.50

Output: Nearly 200 local leaders trained.

Based on the CRM use survey conducted, use of trained facilitators by local groups and input from project steering committee members, training efforts were shifted to provide local resource organization and agency leaders with an easy to use guide (see Product 1). Training for over 100 conservation district leaders was provided at the SD Association of Conservation Districts annual convention held during October 1999 and to over seventy NPS project coordinators and state NPS program staff who attended the joint SD-ND NPS Project Coordinator Training session held during September 2000.

Product 3. Provide Communities with CRM Complete

319 Budget: \$10,000.00 Expended: \$4,357.56 Match: \$12,719.72

Output: Four projects planned.
Resolution of one statewide issue.

During the project period, the process was used by the stakeholder groups involved with the development of the Belle Fourche River, Grand River and Lake Hendricks projects and completion of the Upper Big Sioux River watershed project. The process was also used by the SD Interagency Wetlands Working Group in the development of the statewide wetland policy.

The wetlands workgroup held 13 meetings across the state during 1998 to solicit input and build consensus for the development of a statewide policy. A follow-up meeting using the state RDTN/satellite TV network to present the results of the meetings and accept additional comments was held during summer 1999.

Objective 2.

Provide South Dakotans with nonpoint source pollution opportunities for personal involvement in nonpoint source pollution control and prevention efforts.

Initiated: 3-1-97.

Complete: 5-01-02

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

Initiated: 3-24-97

Complete: 5-01-02

319 Budget: \$182,850.00 Expended: \$117,957.77 Match: \$130,843.03

Product 1. Water Resources Brochure

Discontinued: 12-27-99

319 Budget: \$15,600.00 Expended: \$9,592.15 Match: \$4,680.00

Output: Booklet partially drafted.

The project partner contracted to produce the booklet was South Dakota State University (SDSU). The project was discontinued when staff hired to complete the project resigned to pursue other opportunities. Approximately one-half of the booklet was drafted at the time the project was discontinued. SDSU staff plans to complete the booklet at a later time.

Product 2. Water Festivals

Discontinued 12-3-97

319 Budget: \$113,850.00 Expended: \$55,216.54 Match: \$84,339.23

Output: Seven grant supported festivals attended by 7,800 students.
Sustained festival sponsorship at 3-4 locations annually; 18 festivals through locally lead partnerships.

Support for seven festivals in six cities was provided through a cooperative agreement with the SD Discovery Center and Aquarium using funds provided by this grant. Total attendance at the festivals was 7,800. The number equals 70% of the state's fourth grade students. Over 40,000 fourth grade students have attended water festivals since the project's inception during 1992. The number of festivals and attendance has remained constant after transfer of primary responsibility to local sponsors.

Financial support for water festivals was discontinued after the 1996 festivals were held. Funds allocated for water festivals were redirected to reach a more balanced audience with an increased emphasis on adults. Festivals are currently presented through local sponsors with leadership provide by conservation districts, water development districts, colleges and the SD Discovery Center and Aquarium. DENR provides assistance with planning, water quality materials and session presenters as requested to ensure ongoing success of the festivals.

A presentation about SD water festivals was given at the National NPS I & E Conference held in Chicago during October 1996.

Descriptions of the activities completed to reach a greater segment of the state's population using unexpended funds budgeted for water festivals follows.

Glacial Lakes Conservation Camp Complete 7-7-97

319 Budget: \$1,500.00 Expended: \$1,500.00 Match: \$0.00

Output: Environmental Science training for 30 students.

Financial assistance to attend a two and a half-day conservation camp was provided to middle and junior high age students during the summer 1997. The students who attended the camp gained field experience in water quality, vegetation, soils, engineering, wildlife, and forestry management. Thirty \$50.00 assistance awards were provided through the project.

Environmental Awareness Training for Livestock Confinement Complete

319 Budget: \$6,000.00 Expended: \$6,000.00 Match: \$8,998.52

Output: Training materials developed/compiled.
 Six workshops attended by 196 producers.
 Training continued by project partners.

The six workshops sponsored through the project were attended by 196 swine producers and others involved in producing livestock in confinement units or interested in learning about reducing the impact of animal waste on the environment. The project was completed through a partnership with the SD Pork

Producers Council, the SD Cooperative Extension Service and a private engineering firm. Materials used during the workshop were produced by the National Pork Producers Council, the extension service, and DENR. The training was continued for a second and third year by the SDSU Cooperative Extension Service using funds provided through a US EPA Pollution Prevention Incentives to States Grant obtained through the department's Pollution Prevention Program. The training continues to be offered through a joint venture between the DENR Surface Water Quality Program and SDSU and has been expanded to cover additional species raised in AFOs and CAFOs.

Septic System Workshops

Complete 5-1-01

319 Budget: \$1,250.00

Expended: \$934.27

Match: \$3,386.44

Output: Septic system information packet.

Nearly 200 information packets distributed.

Two workshops attended by approximately 140 individuals.

Two workshops were planned and presented through a partnership with the Black Hills Resource Conservation and Development District. The workshops provided city and county planners, system installation and maintenance professionals and state and federal agency personnel with information needed to plan, install and maintain septic systems using methods that protect ground and surface water resources and public health. Approximately 140 individuals attended the two workshops.

Two hundred Septic System Information Packets containing installation and maintenance materials were prepared for distribution at the workshops. The materials placed in the packet were developed by South Dakota State University. Funding for development of the materials was provided by DENR's Pollution Prevention Program.

Septic System Video

Complete 5-1-02

319 Budget: \$20,000.00

Expended: \$20,000.00

Match: \$15,746.04

Output: Four part program series for television produced

Four part program series aired on commercial television reaching 45,000 –60,000 individuals each week.

Informational video produced; nearly 500 copies distributed.

A series of video clips and a feature length video about septic system installation and maintenance was produced through a partnership that included the Black Hills Resource Conservation and Development District, SD State University, several water development districts, the Black Hills Board of Realtors, Bartell and

West Engineers Inc. and Hodgens Engineering and Survey. Taping was completed during summer 2001.

Segments of the video aired during December 2001 on "Today's Ag", South Dakota State University's weekly Ag issues program. The program, which airs on commercial television, is viewed by 45,000 - 60,000 individuals each week.

Copies of the video were sent to all county extension and conservation district offices, Resource Conservation and Development Associations and water development districts in South Dakota. Copies were also sent to Black Hills area county commissions, planning and zoning officials, and realtors; and Nebraska and Black Hills National Forest officials.

The video is available online by visiting:

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

Silviculture BMP Field Education Program Complete 10-15-01

319 Budget: \$4,520.50 Expended: \$4,520.50 Match: \$8,600.49

Output: Silviculture BMP training materials developed.

Two workshops attended by over 100 industry/resource professionals.

Six field audits of BMPs installed.

Recommendations for SD Silviculture BMP materials revision.

Two Silviculture BMP Workshops were held June 8 – 9, 2000, in partnership with the Black Hills Forest Resource Association, USFS and the SD Department of Agriculture, Division of Conservation and Forestry. Over 100 foresters, loggers road builders, private landowners and agency personnel responsible for implementing Silviculture BMPs attended the workshops. The training included both classroom and field experiences. Practices featured in the SD Forestry BMP Manual were emphasized. The workshops comply with the Central Rockies Sustainable Forestry Core Curriculum requirements. Funding for the classroom aspects of the project were provided through DENR's 1994 NPS I & E Grant from EPA.

The project was expanded to include a field audit component to determine the use and effectiveness of the SD forestry BMP practices by individuals who attended the workshops. The audit instrument was developed by the project partners. The field audits were completed during June 2001.

The audits found that needed BMPs are being installed by logging contractors and, with one exception, are effectively reducing NPS pollution. The exception noted was the installation of culverts. Action is being taken to provide logging contractors the information needed to successfully address this challenge. A virtual tour of the audit sites is available at:

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

The final project report is available from the South Dakota State Library or by visiting:

http://www.state.sd.us/denr/DFTA/WatershedProtection/P2/Documents/Silviculture_BMP_Audit.pdf

Storm Water Workshop Complete 5-1-02

319 Budget: \$3,340.00 Expended: \$3,340.00 Match: \$0.00

Output: One workshop attended by nearly 80 storm water managers

The I & E Program, in partnership with DENR's Pollution Prevention and Surface Water Quality Programs, sponsored a two day Storm Water Workshop during April 2002. The workshop provided nearly 80 municipal storm water managers from South Dakota, Wyoming, North Dakota and Montana with strategies and BMPs that can be implemented to reduce storm water related nonpoint source pollution.

Each workshop participant received a copy of a workbook, "Designing and Implementing an Effective Storm Water Management Program", produced by the American Public Works Association and a "Storm Water Strategies – Community Responses to Runoff Pollution" CD produced by the Natural Resources Defense Council. The workbooks and CDs were purchased with funds from this grant.

Manure BMP Video Complete 3-14-01

319 Budget: \$9,577.62* Expended: \$9,577.62 Match: \$5,092.31

*Additional \$7,422.38 provided through 94 I&E Grant.

Output: Four part program series of television produced.

Four part program series aired on commercial television reaching 45,000 –60,000 individuals per week.

Informational video produced; nearly 200 copies distributed.

A series of manure BMP video clips and a manure BMP video (*Best Practices: Manure Management*) were produced through a partnership with South Dakota State University (SDSU). The project was a component of the South Dakota Managing Manure for Profit and the Environment Outreach Strategy (see Task 4, Product 1).

The video clips aired as a four part series on "Today's Ag", SDSU's weekly agricultural issues program, during January – February 2001. The program, which airs on commercial television, is viewed by approximately 45,000 - 60,000

individuals each week. Manure BMPs featured included siting a new facility, land application rates, surface application and injection equipment and practices, manure storage systems, and clean water diversions and run off collection systems. Copies of the video were provided to all SD county cooperative extension and conservation district offices and placed in the SD State Library. The video may be viewed online by visiting:

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

Sylvan Lake Solar Powered Circulator Demonstration Project Complete
 319 Budget: \$273.33* Expended: \$273.33 Match: \$0.00

Output: Inlake BMP Demonstrated.

* Additional \$14,936.79 provided through DENR's 94 I & E Grant and \$8,694.88 from other funds available to the department.

The project is designed to demonstrate the use of solar powered circulators to break stratification and oxygenate small lakes. The department's project partner is the SD Department of Game Fish and Parks. The aerator is installed at Sylvan Lake. The lake is located in the Black Hill. The demonstration site provides individuals and groups interested in water quality improvement projects an opportunity to observe use of the BMP in a field setting. Oxygen/temperature profiles and secchi disc readings from the demonstration sites will be used at project planning and training sessions.

Product 3. Interactive Touch Screen Display (Kiosk) Complete 10-15-01
 319 Budget: \$45,700.00 Expended: \$4,197.48 Match: \$0.00

Output: Touch screen based modules accessed by over 20,000 users.
 Forest and Watershed Adventures converted to CD format.
 CDs distributed to over 1,500 potential users.

Continued access to the forest and watershed educational modules developed through previous NPS I & E grants was provided using two touch screen displays (Kiosks). One unit is a permanent display located at the SD Discovery Center and Aquarium in Pierre, SD; the second a portable unit loaned to schools and resource management agencies and organizations. The units were purchased with funds provided by previous NPS I & E grants. Agencies and organizations requesting use of mobile unit included schools, water festival sponsors, the Rapid City Children's Science Center and the Black Hills National Forest (Pactola Visitor's Center). Educational module use information was provided by a monitoring system programmed into the system software. Data provided by the monitors indicates the modules were accessed over 20,000 times during the grant period. Well over half of the total accesses were at the Pactola Visitor's Center.

Because of the shipping and multiple user related computer maintenance problems encountered, conversion of the program modules from touch screen to a CD format was determined to be a better option for providing continued access to the programs. The conversion and update of the modules was delayed when the first four vendors identified as potential project partners were not able to contract to complete the conversion.

The conversion to CD was completed through a partnership with the South Dakota School of Mines and Technology during summer 2001 using funds provided by DENR's project partners and other resources available through the department. The program was field tested at a rural school that has a high-speed computer network and then by a group of 30 middle and high school science teachers selected at a session conducted at the 2001 SD Math and Science Teachers Conference. Twenty-five hundred copies of the CD were produced during summer 2001 using funds provided by this grant.

Project partners included the SD Department of Agriculture, SD Association of American Foresters, SD Project Learning Tree, Pope and Talbot, South Dakota State University, Keep SD Green Association, SD Tree Farm Committee and the SD Association of Conservation Districts.

Distribution of the CD to project partners and all SD middle school science teachers was completed during November 2001. The CD is also being distributed at Project Learning Tree workshops held in SD, environmental education workshops for teachers sponsored by the SD Discover Center and Aquarium, and at water quality conferences where the department sets up exhibits. Over 1,500 of the 2,500 copies of the CD purchased have been distributed.

A copy of the CD can be ordered online by accessing:

http://www.state.sd.us/denr/DFTA/WatershedProtection/P2/Documents/Order_Form_for_est_and_water_ad.htm

To preview or play the CD online visit:

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

The CD was submitted by the SD State Library as South Dakota's entry in the 2001 GODORT Notable Documents competition. The competition recognizes 30 outstanding government publications each year. The list is published in the May edition of the "Library Journal".

A request by EPA Headquarters to use portions of the CD for a project with a Weather Net 4, a TV station located in Washington DC, was approved during April 2002.

The DENR I & E Coordinator cooperated with Utah State University in the development of the Region VIII Interactive Watershed CD. A prototype of the regional CD was made available for review at the 1999 SD Math and Science Teachers Conference. Comments on the latest prototype version of the CD were provided to the developer during April 2002.

Product 4. Educational Materials Complete 5-1-02

319 Budget: \$7,700.00 Expended: \$2,805.88 Match: \$0.00

A summary of the items purchased using funds budgeted for educational materials appears in the following table. See Task 4, Products 1 and 2 for a description of the conferences, workshops and other events at which the graphics and models produced were used. The term graphic includes enlarged photo mounts, signs, and labels used to create a display or poster.

I & E Materials Purchased

Item Purchased	Cost
Graphics for displays at conferences, workshops, and events	\$1,177.32
Straight Talk on Manure (reprint 3,000 copies)	561.00
Covers for models used with manure management display	424.00
Conference registrations (2)	250.00
Header graphic for display board	336.80
CD label maker	46.16
Total	\$2,805.88

The cost of purchasing “Designing and Implementing an Effective Storm Water Management Program” (\$3,340.00) and reproducing the “Forest and Watershed Adventures” CD (\$4,197.48) are listed with the descriptions for the Storm Water Workshop and Interactive Touch Screen Display (Kiosk) projects respectively.

Task 3. Provide opportunities for citizens to become actively involved in the prevention and control of nonpoint source pollution.

Initiated 9-1-99 Complete

319 Budget: \$6,387.00 Expended: \$4,915.67 Match: \$4,404.98

Task 3 was a continuation of Objective 2, Task 2, of the department’s 1994 NPS I & E Grant. The activities funded through the 94 and 96 grants were integrated to create a comprehensive program. Therefore, the summary of citizen’s volunteer water quality activities developed and implemented through the NPS I & E Program includes project elements funded by both grants.

The volunteer activities program was initially coordinated by I & E project staff. When it was determined that staff time was not available to build and sustain a

viable program, alternative management options were explored. Information gained from a presentation by River Watch during April 1999 was used as a model to increase opportunities offered through the SD volunteer activities program. DENR NPS and point source program leadership attended the presentation. One of the actions taken as a result the information gained was outsourcing the implementation of the volunteer activities programs to the SD Lakes and Streams Association. It was determined the association could:

1. provide an effective project delivery vehicle that would lead to an increase in the number of participants in each activity and
2. train volunteers so that water quality samples collected can be used in support of the department's TMDL efforts.

The association has a cooperative agreement with the SD Discovery Center and Aquarium for implementation of the task, which includes Adopt-A-Stream, citizen's monitoring and storm drain stenciling.

Project booklets and fliers have been produced. The project is promoted through the Lakes and Streams' quarterly newsletter, "Statewide Water News", on a project web site and at DENR and Discovery Center displays at conferences.

Completion of the task was initially behind schedule because of a delay in finalizing the project partnership. Strategies employed to increase participation in the program are yielding positive results. An example is the interest expressed by the SD Grassland Coalition in monitoring stream segments that flow through pasture and range lands. The Coalition selected participation in citizen's monitoring as a component in its Grassland Management and Planning Project. Opportunities for participation in the programs by agricultural groups and farmers and ranchers were promoted by the Lakes and Streams Association at the Managing Manure for Profit and the Environment exhibit at DakotaFest 2001.

DENR provides continuing support to the volunteer monitoring program through technical assistance, training, the loan of monitoring equipment and by paying water quality sample analysis lab costs.

Product 1. <u>Citizens Monitoring</u>	Complete
319 Budget: \$3,387.00	Match: \$4,404.98
Expended: \$4,915.67	

Output: Volunteer monitoring training.
 Thirteen Lakes and three stream segments monitored.
 Monitoring data transferred.
 Sustainable volunteer monitoring program.

A milestone of 30 groups at 30 lakes by the end of 2000 was established by Lakes and Streams. Of these, 10 were to be post-watershed project lakes and 20

waterbodies that appear on the SD 303(d) list. Participation in the Great Secchi Dip In was promoted.

The Discovery Center provides water quality monitoring training through projects WET and WOW and association sponsored workshops. Citizen's monitoring training sessions were held at the SD Math and Science Teacher's Conference during February 2000 and SD Lakes and Streams Conference during May 2000 and at two sites during 2001. Four volunteer monitoring training workshops were planned for spring 2002. Individuals attending the sessions are provided with a citizen's monitoring kit that includes a copy of the SD Citizen's Monitoring Manual, sampling equipment and mailing containers. To ensure the data collected meets QAQC requirements for use by the department, training is provided in cooperation with DENR.

Citizen groups are currently gathering data at 13 lakes and 3 streams/ivers. Five of the Lakes are post-319 project waterbodies. Each waterbody enrolled in the program is sampled during June and August. Samples are analyzed by the SD State Health lab for nitrates, ammonia, total phosphorus, and lab pH. Secchi disc and temperature readings are taken each sampling date. Data collected is entered in the Citizens monitoring database. The data is provided to DENR for entry into STORET.

A report of the water quality information gained from the volunteer monitoring network during the 2001 field season is available by visiting:

www.sdlakesandstreams.com

The Lakes and Streams Association was awarded Regional Geographic Initiative (RGI) Grants by EPA to initiate a citizens stream monitoring program in the Black Hills during 2000, the Big Sioux River near Sioux Falls during 2001 and a third RGI Grant to add the segment of Rapid Creek in Rapid City to the South Dakota volunteer monitoring network during 2002.

Product 2. <u>Adopt-A-Stream</u>	Complete
319 Budget: \$2,000.00 Expended: \$0.00	Match: \$0.00

Output: Twelve stream/lakeshore segments adopted.

Twelve groups at four waterbodies are active. The milestone established for the expanded project was 24 groups. Adopted stream segments are identified by signs. The Lakes and streams Association is investigating how to improve participation in this activity.

Product 3. <u>Storm Drain Stenciling</u>	Complete
319 Budget: \$1,000.00 Expended: \$0.00	Match: \$0.00

Output: Thirty storm drain stenciling projects.

Thirty teams are active across the state. The milestone established for the project was 24 groups. Stencils and a project guide are provided to each group. Training and onsite assistance is available upon request. The Lakes and Streams Volunteer Programs Coordinator presented information about storm drain stenciling at the SD Storm Water Conference held during April 2002 in Spearfish, SD.

Task 4. Travel

Initiated 3-19-97		Complete
319 Budget: \$1,700.00	Expended: \$0.00*	Match: \$0.00

* Costs associated with display and presentation development and materials and travel related activities were paid using other funds available to the department or are included under educational materials – see Task 2, Product 4.

Onsite assistance to plan and complete information transfer projects was provided to 319 projects, the department's project partners, and stakeholder groups during the grant period. Additional travel was undertaken to transfer information about program accomplishments at conferences, develop and oversee the completion of NPS conferences, and make presentations at water quality related events.

Product 1. <u>Onsite Assistance</u>	Complete
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Outputs: Managing Manure for Profit and the Environment Outreach Strategy.
Grassland Management and Planning project developed.
Three managed grazing demonstrations sites implemented.
Two managing manure as a resource brochures produced.

Assistance with the development of local project I & E segments, displays and conferences was provided to local project sponsors and organizations and agencies. The coordinator worked closely with NRCS state information specialists. I & E Program updates are provided at NPS Task Force meetings.

The I & E coordinator is part of the interagency workgroup that is implementing the Managing Manure for Profit and the Environment Outreach Strategy. Agencies and groups involved with planning and carrying out the strategy include the SD Dept. of Ag, SD State University, SD Association of Conservation Districts, local conservation districts and watershed projects, Lower James and Randall Resource Conservation and Development Districts, SD Cattleman's Association, SD Pork Producer's Council, South Dakota Lakes and Streams Association and DENR.

The theme for 2000 used a “what’s in it for me” approach that informed producers and urban residents about what can and is being done to manage manure using cost effective practices that protect public health and the environment. The theme for 2001 centered on integration of the Core 4 Conservation Practices into the strategy.

Activities completed include exhibits at DakotaFest – 2000 and 2001 and several Ag commodity group conferences/trade shows and local farm/home shows, production of an AFO/CAFO brochure (*Straight Talk on Manure*) through the Region VIII 104(B)(3) NPDES Grant project in partnership with the Utah 319 Program, and production of a series of manure BMP video clips and a manure BMP video (*Best Practices: Manure Management*) in partnership with South Dakota State University (see Task 2, Product 2).

The AFO/CAFO brochure and manure BMP video are available by visiting:

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

A grazing management demonstration project was initiated through the SDACD and SD Grasslands Coalition. Other project partners included NRCS SD Department of Game Fish and Parks, US Fish and Wildlife Service, SD Department of Agriculture, and SD State University. The first of six planned demonstration sites was established during 2000. Two were developed during 2001. The remaining three will be installed during 2002. The sites are established and managed through cooperative agreements with local conservation districts.

The sites are designed to demonstrate the economic and environmental advantages that can be gained using managed grazing systems. Field days held at the sites to showcase managed grazing practices and provide ranchers with information about the advantages of managed grazing were attended by nearly 200 ranchers and resource managers during summer 2001. Data collected during the summer 2000 was presented at the 2000 SD Society for Range Management convention. One of the sites served as a field trip location for the 2001 society meeting.

To learn about the three demonstration sites in operation during 2001 visit:

<http://sdconservation.org/grassland>

The project was been integrated into the SD Grassland Coalition’s 319 funded Grassland Planning and Management Project during 2001. In addition to the demonstration sites, the project includes development and implementation of managed grazing systems. To learn about the project visit:

<http://www.sdconservation.org/grassland/managing/started.html>

Managing Manure for Profit and the Environment Outreach Strategy activities in development include production of two brochures, “Calibrating Manure Spreaders” and “Developing a Comprehensive Nutrient Management Plan”; the revision of two brochures, “Sampling Manure for Nutrient Analysis” and “Using the Results from a Manure Analysis”; and a training course for AFO operators.

Product 2. Conference Attendance and Training for Department Staff Complete

Outputs: Region VIII Watershed Conference.

Two presentations at regional/national conferences.

Nine displays at conferences, workshops and training sessions.

Two statewide demonstration/BMP development projects developed.

The coordinator gave a presentation about using water festivals as a mechanism for building project partnerships at the National NPS I & E conference held in Chicago during October 1996.

Assistance with the development of I & E segments of project proposals and the development of presentations for local groups was provided to DENR staff.

The I & E coordinator was a key player in the development and operation of the Region VIII Peaks to Prairies Watershed conference held during September 1998, the Managing Manure for Profit exhibit at DakotaFest '99, 2000 and 2001 and is assisting with the development of a Core 4 Conservation Practices alliance and training for AFO operators.

A presentation about watershed initiatives and how RC & Ds can provide leadership in planning and completing local projects was given at the Western Resource Conservation and Development Conference held in Spearfish during January 1999.

A display featuring materials and assistance available from DENR on the web site and GIS was setup at the 1999 SD Education Association Convention and 2000 and 2001 SD Math and Science Teachers Conferences. Over 300 teachers were provided information at the three events. The Region VIII interactive watershed CD was previewed at the 2000 Math and Science Teachers Conference.

A display outlining how TMDLs are developed was set-up at the Phosphorus, Manure and Water Quality Conference held in Sioux Falls during August 2001 and the SD Association of Conservation Districts Convention held in Rapid City during September 2001.

Displays and presentations about environmental career opportunities were developed and used at three career fairs and the South Dakota Math Counts Awards Banquet.

EVALUATION OF GOAL ATTAINMENT AND RELATIONSHIP TO MANAGEMENT PLAN

Information contained in the project summaries and provided by monitoring activities served as the basis for evaluating attainment of the project goal:

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

With the following exceptions, the department and its project partners met or exceeded the milestones established for each task and product undertaken through the amended project implementation plan. The exceptions are:

- production of the Water Resources Brochure and
- the participation in the Opportunities for Citizen Action project

In the first instance, the publication is in draft form. The department's project partner remains committed to completion at a later date. In the second, while the participation levels were below expectations, the volunteer activities partnership formed with the SD Lakes and Streams Association has resulted in a sustainable program under local leadership. The program created has exhibited continued growth and is providing the foundation for a sustainable statewide volunteer water quality monitoring network that will provide data that supports the state's TMDL efforts.

The workplan changes made early in the project period had a positive effect on attaining the project goal.

- Changing the nature of the CRM materials slated for development and providing training to local leaders rather than a limited number of facilitators resulted in increased capacity for community-based project development through local leadership.
- The activities that replaced water festivals (Task 2, Product 2) resulted in:
 1. informing a greater portion of the state's population about why surface and ground water should be protected and
 2. providing resource managers with the tools needed to reduce NPS pollution entering these resources.
- Outsourcing the volunteer water quality activities (Task 3) resulted in the development of a sustainable community-based water quality monitoring network, viable storm drain stenciling program and a more manageable Adopt*A*Stream program. Each of the three programs has experienced an increase in participation since the partnership was formed with the SD Lakes and Streams Association.

- Development of the Managing Manure for Profit and the Environment resulted in a unified public agency-livestock industry partnership that:
 1. informed the public about what the livestock industry can and is doing to protect surface and ground water resources.
 2. provided livestock producers with information about BMPs they can use to prevent NPS pollution
 3. produced publications and videos needed to train and provide producers and resource managers in the use of better manure management practices
 4. helped form partnerships that resulted in development of the Grassland Management and Planning and Manure Management BMPs Based on Soil Phosphorus projects.

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 through the activities completed and initiated during the grant period. Goal attainment was facilitated by the PIP revisions described in the Introduction and Summary of Project Accomplishments sections of this report.

The activities completed also supported implementation of the South Dakota NPS Management Plan by:

- being responsive to the program needs identified by the South Dakota NPS Task Force and consistent with the group's information and education strategy,
- building and sustaining partnerships with local and agency resource managers and agricultural commodity groups,
- providing assistance to local watershed projects,
- making NPS control and prevention information available to landowners, and
- providing individuals with opportunities for involvement.

BEST MANAGMENT PRACTICES DEVELOPED/REVISED

BEST MANAGMENT PRACTICES DEVELOPED/REVISED

The project activities completed were selected primarily to provide:

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

A summary of BMP training and demonstration activities completed during the project period appears in the table that follows.

BMP Training and Demonstration

Activity Category	BMP	Activity
Training	Slope and Shoreline Stabilization Using Vegetation	Workshop at Peaks to Prairies Watershed Conference
	Silviculture	Silviculture BMP Field Education Project
	Manure Management	Environmental Awareness Training for Livestock Confinement Manure BMP Video
	Septic System Installation and Maintenance	Septic System Workshops Septic System Video
	Storm Water Management	Storm Water Workshop
Demonstration	Use of Solar Powered Circulators to Break Stratification and Oxygenate Small Lakes	Sylvan Lake Solar Powered Circulator Demonstration Project
	Managed Grazing	Managed Intensive Grazing Demonstration Sites

Project activities that lead to recommendations for BMPs revision or provided the basis for developing future BMP implementation and development projects were:

- Silviculture BMP Field Education Project,
- Managed Intensive Grazing Demonstration Sites, and
- Managing Manure of Profit and the Environment Strategy.

The field audits conducted as part of the silviculture BMP project resulted in recommendations for revisions to the SD Forestry BMP Manual. The managed grazing demonstration sites developed were the springboard for the development of the SD Grassland Management and Planning Project. The partnership that developed the Manure Management BMPS Based on Soil Phosphorus Project was an outcome of several activities related to the implementation of the Managing Manure of Profit and the Environment Strategy.

MONITORING PLAN

MONITORING PLAN

The evaluation and monitoring plan included in the PIP was product based. Measures of success centered largely on tracking activity participation levels. Measures listed in the PIP by activity included:

- Coordinated Resource Management – Number of participants at training sessions, number of situations facilitated and persons attending sessions, and the number of issues resolved.
- Water festivals – teacher and presenter evaluations of festivals.
- Touch Screen display – Number of times the modules were accessed.
- Adopt*A*Stream – Number of groups formed and amount of litter collected.
- Storm Drain Stenciling – Number of groups formed and number of drains stenciled.

The monitoring plan was amended to better track and evaluate the activities added to project workplan. While the nature of the data collected remained essentially numeric, increased emphasis was placed on documenting the long-term effect of each activity. Measures used to monitor outcomes include:

- Sustainable programs implemented through partnerships.
- Effective use of BMPs.
- Partnerships developed.
- Target audience reached.
- New projects developed as a result of an activity.

The data gathered through project monitoring activities is shown in the Monitoring Plan Results and Discussion section of this report.

MONITORING PLAN RESULTS AND DISCUSSION

MONITORING PLAN RESULTS AND DISCUSSION

A summary of project monitoring data appears in the table that appears on the next page. The table includes a comparison of planned versus actual project outputs and comments. 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 and provided opportunities for action through community-based project leadership.

- Over 40 different local, agency, organization and private businesses were involved as a project (activity) sponsor or implementation or financial partner during the grant period. The total is over double the number that would have been involved through the original project implementation plan.
- The project activities provided NPS information and action opportunities to a combined total of nearly 380,000 individuals. The total is greater than 50 percent of the state's population.
- The approach used to complete project activities resulted in local leaders taking ownership for NPS activities. Examples include sustainable water festival and citizens monitoring programs and the development of the Grassland Management and Planning and Manure Management BMPs Based on Soil Phosphorus projects).
- Providing NPS activities through industry partnerships lead to implementation of BMPs in the field. Activities that were especially effective in this regard include the Silviculture Education and Field Audit project, Managing Manure for Profit and the Environment strategy, and Environmental Awareness Training for Livestock Confinement.
- The use of commercial television was an effective medium for providing NPS information to target audiences. Airing Manure BMP and Septic System video series on *Today's Ag* support this conclusion.
- The integrated program approach used by the Managing Manure for Profit and the Environment partnership was an effective mechanism for informing the public about what is being done to prevent pollution from livestock operations and providing producers with information about manure management related BMPs they can use on their farms. Activities completed or initiated as part of the strategy include the DakotaFest exhibits, manure as a resource publication series, articles in the print and electronic media, video series on *Today's Ag* and exhibits at meetings, conferences, and workshops).

The information gathered through monitoring activities provided the basis to evaluate workplan completion and goal attainment.

PRODUCT OUTPUT MONITORING BY TASK

Task	Output	Quantity		Comments
		Planned	Actual	
Task 1. Implement CRM				
Product 1- CRM Manuals & Materials				
CRM Manual Revision	Updated CRM Manual	1	1	
Facilitator's Manual Development	Facilitator's Manual	30	920	Nearly 400 copies distributed.
CRM Awareness Packet	Awareness Packet	500	0	
Product 2. CRM Training & Mentoring				
Advanced Facilitator Training	Improved Facilitators	30	200	Conservation district leaders and watershed project coordinators
Facilitator Mentoring	Supervised Facilitators	20	0	
Product 3. Provide Communities With CRM				
Awareness Orientation	Orientation Sessions	20	4	
Training In and Use of CRM	Issue Resolution	16	4	
Task 2. Increase Awareness of NPS				
Product 1. Water Resources Brochure				
Brochure Development	Camera Ready Copy	1	1 partial draft	
Print and Distribute the Brochure	Brochure	1,000	0	
Product 2. Water Festivals				
Outsource Coordination Activities	Subgrant	1	1	Total festivals = 7 supported by grant plus 18 sponsored by local partnerships
Annual Water Festival Action Plan	Workplan	2	2	
Water Festival Coordination	Effective Statewide Strategy	2	1	
Hold Water Festivals	Water Festivals	20	25	
Added/replacement activities				
Glacial Lakes Conservation Camp	Assistance Awards	30	30	
Envir. Awareness Training for Livestock	Workshops for Producers	4	6	Producers trained = 196
Septic System Workshops	Information Packets	200	200	
	Workshops	2	2	Total attendance = 150
Septic System Video	4 Part Program Series	1	1	45,-60,000 viewers/week
	Video	200 copies	500 copies	loaded on DENR web site
Silviculture BMP Field Education Program	Develop Training Manual	1	1	
	Workshops	2	2	Total attendance = >100
	Field Audits	6	6	BMPS implemented
Storm Water Workshop	Workshop	1	1	Total attendance = 80
Manure BMP Video	4 Part Program Series	1	1	45,-60,000 viewers/week
	Manure BMP Video	200 copies	200 copies	loaded on DENR web site
Sylvan Lake Solar Powered Aerator Demo	Demonstration Site	1	1	In progress
Product 3. Touch Screen Display (Kiosk)				
Program Revision	Updated Games & Information	1	1	Program access on touch screen units = >20,000
Transfer to CD ROM	More Accessible Program	1	1	
Distribute CD to Users	Program On Users Computer	500 CDs	>1,500	
Product 4. Educational Materials	Educational Materials	N/A	see project summary	
Task 3. Opportunities for Citizen Action				
Product 1. Citizen's Water Quality Monitoring	Lake & Stream WQ Monitored	30	16	Sustainable network
Product 2. Adopt*A*Stream	Shoreline Clean-up	30 Miles	12 groups	
Product 3. Storm Drain Stenciling	Pollution Prevented	10 Cities	30 teams	
Task 4. Travel				
Product 1. Onsite Assistance	Assistance to Project Partners	20	25	Total contacts from all activities >250,000
Product 2. Conferences and Training	Dynamic I & E Program	2	14	

PROJECT BUDGET

PROJECT BUDGET

Expenditures from the \$210,737 project award totaled \$142,673.44. Local project partners contributed \$155,387.18 toward completion of workplan activities. The local contributions equal 52.13 percent of the total project expenditures from all sources compared to a planned 54.35 percent. A comparison of planned versus actual expenditures and local contributions for each project activity appears in the Section 319/Non-federal Budget Comparison Table.

Unexpended funds from the project grant were transferred to other projects funded through the department's 1996 319 grant award from EPA as explained in the introduction to this report.

Section 319/Non-federal Budget Comparison

Workplan Activity by Task	Budget Comparison					
	Project Implementation Plan			Actual Expenditures		
	Match	319	Total	Match	319	Total
Objective 1						
Task 1. Implement CRM						
Product 1- CRM Manuals & Materials	16,900.00	4,500.00	21,400.00	5,428.95	15,442.44	20,871.39
Product 2. CRM Training & Mentoring	17,300.00	5,300.00	22,600.00	1,990.50	0.00	1,990.50
Product 3. Provide Communities With CRM	60,800.00	10,000.00	70,800.00	12,719.72	4,357.56	17,077.28
Task 1 Total	95,000.00	19,800.00	114,800.00	20,139.17	19,800.00	39,939.17
Objective 2						
Task 2. Increase Awareness of NPS						
Product 1. Water Resources Brochure	10,400.00	15,600.00	26,000.00	4,680.00	9,592.15	14,272.15
Product 2. Water Festivals	135,000.00	113,850.00	248,850.00	84,339.23	55,216.54	139,555.77
Glacial Lakes Conservation Camp				0.00	1,500.00	1,500.00
Enviro. Awareness Training for Livestock				8,998.52	6,000.00	14,998.52
Septic System Workshops				3,386.44	934.27	4,320.71
Septic System Video				15,746.04	20,000.00	35,746.04
Siviculture BMP Education Program				8,600.49	4,520.50	13,120.99
Storm Water Workshop				0.00	3,340.00	3,340.00
Manure BMP Video				5,092.31	9,577.62	14,669.93
Sylvan Lake Solar Powered Circulator				0.00	273.33	273.33
Product 3. Touch Screen Display (Kiosk)	1,050.00	45,700.00	46,750.00	0.00	4,197.48	4,197.48
Product 4. Educational Materials	0.00	7,700.00	7,700.00	0.00	2,805.88	2,805.88
Task 2 Total	146,450.00	182,850.00	329,300.00	130,843.03	117,957.77	248,800.80
Task 3. Opportunities for Citizen Action						
Product 1. Citizen's Water Quality Monitoring	9,400.00	3,387.00	12,787.00	4,404.98	4,915.67	9,320.65
Product 2. Adopt*A*Stream	0.00	2,000.00	2,000.00	0.00	0.00	0.00
Product 3. Storm Drain Stenciling	0.00	1,000.00	1,000.00	0.00	0.00	0.00
Task 3 Total	9,400.00	6,387.00	15,787.00	4,404.98	4,915.67	9,320.65
Task 4. Travel						
Product 1. Onsite Assistance	0.00	1,000.00	1,000.00	0.00	0.00	0.00
Product 2. Conferences and Training	0.00	700.00	700.00	0.00	0.00	0.00
Task 4 Total	0.00	1,700.00	1,700.00	0.00	0.00	0.00
GRAND TOTAL	250,850.00	210,737.00	461,587.00	155,387.18	142,673.44	298,060.62

SUMMARY AND FUTURE RECOMMENDATIONS

SUMMARY AND FUTURE RECOMMENDATIONS

The activities undertaken 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:

- Project partnerships involving over 40 different groups, organizations, agencies and businesses contributed services and financial support were formed.
- Over 380,000 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.
- Sustainable water festival and volunteer water quality monitoring programs were facilitated.
- An integrated strategy to inform the public and livestock producers about manure management BMPs that can and are being implemented was developed and successfully implemented.
- Projects that provide livestock producers with grassland management assistance and develop phosphorus-based manure management BMPs were developed.
- A strategy that provides direction for implementation of the SD NPS I & E Program was developed.
- The implementation of SD NPS Management was supported.

The partnerships and materials developed will provide the base to continue and expand the SD NPS Information and Education Program. To maximize future program success, five actions are recommended:

1. structure the I & E program so that it supports implementation of the South Dakota NPS Management Plan,
2. follow the I & E Strategy developed by the SD NPS Task Force,
3. complete projects through partnerships,
4. target both urban and rural segments of the population, and
5. expand the use of the print and electronic media.