NORTH DAKOTA
NPS POLLUTION MANAGEMENT PROGRAM

2021 Annual Report

January 1, 2021 – December 31, 2021

This report describes the cumulative accomplishments during the 2021-2025 Management Plan Period

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Introduction

The North Dakota Nonpoint Source Pollution Management Program (NPS Program) is a voluntary program focused on the reduction and prevention of NPS pollution impairing beneficial uses of the state's water resources. Locally sponsored projects are the primary means by which the NPS Program is implemented across the state. Through these local initiatives, the ND Department of Environmental Quality (Department) has supported on-the-ground efforts as well as educational events to move toward the goals of the 2021 – 2025 NPS Pollution Management Program Plan (Management Plan). The Management Plan vision and mission statement are as follows:

> *The North Dakota NPS Program vision is to abate all NPS pollution threats and impairments to the beneficial uses of waters of the state. To accomplish the vision, the mission for the NPS Program is to implement a voluntary, incentive-based program that restores and protects the chemical, physical, and biological integrity of waters where the beneficial uses are threatened or impaired due to nonpoint sources of pollution.*

Five goals have been established to maintain progress toward the mission and vision over the next 5 years (i.e., 2021-2025).

> Goal 1: Expand the number and distribution of assessed waterbodies in the state to better define local and statewide needs for addressing the sources and causes of NPS pollution threatening or impairing waterbody beneficial uses.
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> Goal 2: Through the local watershed projects, improve water quality trends and/or restore impaired beneficial uses of 5 waterbodies by 2025.
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> Goal 3: Increase public awareness and understanding of the sources and causes of NPS pollution as well as the feasible and sustainable solutions for addressing NPS pollutants impairing the beneficial uses of waterbodies.
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> Goals 4: Increase the capacity and ability of soil conservation districts and other resource managers to develop and implement comprehensive watershed-based projects to address local water quality priorities.
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> Goal 5: Support the implementation of the components of the ND Nutrient Reduction Strategy for Surface Waters that are focused on evaluating and/or addressing nonpoint sources of nitrogen and phosphorus.

Advancement toward the NPS Program mission and vision will ultimately be measured by the outcomes of actions related to the five NPS Program Goals and the Delivery objectives described in Sections II -VI. Measures used to evaluate success include stream or lake water quality data; modeled pollutant load reductions; public survey results; acres of applied BMPs; impaired waterbodies assessed or restored; and healthy watersheds protected. Annual and final reports entered in the EPA Grants and Reporting System (GRTS) are the primary means used to report and document project-specific progress to the EPA. The Success Stories submitted to EPA are also used, when possible, to report on projects where a beneficial use has been fully restored or an

improving trend have been documented. Public outreach is another important reporting component for the NPS Program. The NPS Program website, articles, social media, newsletters, meetings, and radio are all used to disseminate information on the NPS Pollution Management Program and projects.

The EPA Grants Reporting and Tracking System (GRTS) is the primary reporting tool used to report to EPA on the accomplishments and status the projects supported with Section 319 funding. As projects are approved for Section 319 funding, the GRTS is updated to include information such as the 1) project goal; 2) Section 319 budget; 3) targeted NPS pollutants; 4) local sponsors; 5) type of waterbody being addressed; 6) pollutant load reductions; and 7) BMP planned/applied. The project implementation plans as well as the annual and final reports for the projects are also posted in the GRTS.

EPA success stories (Type 1 & 2) are additional reporting processes used to highlight the accomplishments of specific projects. When available, the NPS Program submits project-specific reports to EPA on waterbodies that have one or more beneficial uses restored or are experiencing improving water quality trends. These "success stories" are posted on EPA's website and serve as interim measures to document the benefits of projects supported by the NPS Program.

The NPS Program also submits an annual program report to EPA to provide an update on progress toward the Management Plan goals and objectives. The main components of the annual reports include five sections focused on the NPS Program delivery objectives and a final section addressing progress toward planned outcomes. Section VII of the annual report is the closing section that describes progress toward planned NPS Program outcomes, while Sections II through VI address the following delivery objectives: 1) Waterbody Prioritization; 2) Resource Assessment; 3) Project Assistance; 4) Coordination; and 5) Public Out-Reach Education. The sections of the annual reports are consistent with the sections in the Management Plan.

The NPS Program annual reports are cumulative reports that describe up-to-date progress under the 2021 - 2025 NPS Pollution Management Program Plan. The time frame for this 2021 annual report is January 1, 2021, to December 31, 2021, which also represents the first report for the 2021 – 2025 Management Plan Period (Management Period). Active Section 319 Grants during the Management Period included the 2016 - 2021 Grants. The 2016 Grant was closed-out during this reporting period. Ending budgets for the projects supported under the 2016 Grant are provided in Appendix A.

Delivery of the NPS Program is being accomplished through five interrelated objectives addressing: Waterbody Prioritization; Resource Assessment; Project Assistance; Coordination; and Public Outreach and Education. Each objective includes several actions to be initiated and/or completed during the Management Plan period. These actions describe the types of events or activities that will be implemented to advance toward the NPS Program goals. The outputs for each action are reported annually and serve as the primary means to gauge progress of the NPS Program.

The following sections summarize the accomplishments under the 2021-2025 Management Plan during the January 1, 2021 to December 31, 2021, period.

II. Waterbody Prioritization

Prioritization Objective: Provide direction for the delivery of financial and technical assistance to assess, restore or protect waterbodies impaired or threatened by NPS pollution

At the state level, the most current Integrated Report serves as the main information source for establishing NPS Program priorities. Waterbodies on the 303(d) list that are ranked as high priority for TMDL development and those with approved TMDLs are always considered priority waterbodies for assessment or restoration under the NPS Program. Locally, the Integrated Report is also used to guide prioritization decisions, but other sources such as TMDLs; survey results; applied BMP data; and NPS Pollution Assessment Reports are also used to further define local priorities for watershed assessment, restoration, or protection. From a protection standpoint, waterbodies that are identified as having no beneficial use impairments through a local assessment project are also recognized as priority waters by the NPS Program.

During priority setting for watershed assessment projects, the project partners can use additional criteria to further define local priorities. Initially, the NPS Program priority waterbodies are reviewed with the project partners to provide a starting point for establishing the local assessment priorities. Observed conditions, local interest and resource limitations are additional factors project sponsors may consider when identifying watershed assessment priorities. These local priorities typically include waterbodies with limited or outdated data and unassessed waterbodies. The local assessment priorities established through this process may include a single waterbody or several waterbodies scheduled for assessment over multiple years.

Waterbodies with a completed watershed assessment or a TMDL, are considered priorities for the implementation of corrective or protection measures. Locally, if the number of assessed waterbodies is limited and significant local interest exists, prioritization is a very straight forward process whereby waterbody restoration or protection projects are simply implemented as the assessments are completed. However, occasionally, some high priority waterbodies may not proceed beyond the assessment phase due to various reasons (e.g., limited landowner interest, lack of local support). Under these situations, the watershed for the impaired waterbody is considered a priority area for educational efforts to strengthen support by increasing awareness and understanding of the NPS pollution impacts and solutions.

As a third implementation priority, if a common NPS pollutant source is contributing to the impairment of beneficial uses in multiple watersheds, the pollutant source itself can be identified as a high priority and targeted for abatement activities. Concentrated livestock feeding areas, declining riparian areas and degraded soils are examples of priority sources in the state. Projects focusing on priority sources are typically implemented statewide or at a regional level.

Within the watershed projects, the delivery of financial and technical assistance is guided using outputs from the Annualized Agriculture Nonpoint Source Pollution model (AnnAGNPS) or the Prioritize, Target and Measure Application (PTMApp). Both models identify catchments and/or sub-watersheds within a watershed that are the likely sources of nitrogen, phosphorus and/or

sediment. Estimated amounts of pollutants exiting these catchments or sub-watersheds are used to further prioritize these areas to identify specific target areas for BMP implementation within the watershed. The AnnAGNPS model is used throughout the state to map the priority areas for watersheds receiving Section 319 support. Generally, the priority areas identified with AnnAGNPS range in number from a few to over one hundred per watershed. The PTMApp also provides the means to identify priority catchments in a watershed. However, the PTMApp also allows the user to easily identify critical sites at the field scale and estimate downstream NPS pollutant reductions associated with planned BMPs. The PTMApp is only available in the Red and James River basins in the state.

Given the variability in local interest and resources, NPS Program priorities are not defined by a list of specific waterbodies. Instead, the NPS Program priorities are defined by narrative descriptions of waterbodies that are eligible project areas. During the local prioritization process, additional criteria will be used to further define the NPS priorities to identify specific waterbodies to be addressed. Descriptions for the NPS Program waterbody priorities for the 2021-2025 Management Plan period are as follows:

- Waterbodies on the most current 303(d) list with impaired beneficial uses due to NPS pollution
- Waterbodies with an approved TMDL that addresses NPS pollution impairments.
- Locally assessed waterbodies that have a beneficial use impairment that can be attributed to NPS pollution. *[Note: This will generally include waterbodies that are not yet included on the 303(d)list due to the timing of the Integrated Report development.]*
- Lakes with chronic harmful algal bloom occurrences
- Waterbodies that are fully supporting all beneficial uses, but threatened by potential NPS pollutants
- Priority pollutant sources include small and medium animal feeding operations, degraded riparian areas, cropland with saline areas and/or impacted by frequent flooding, and failed septic systems.

III. Resource Assessment

Assessment Objective: Document beneficial use and water quality conditions of priority waterbodies and/or watersheds and identify the sources and causes of beneficial use impairments.

Projects designed to assess and document the extent of beneficial use impairments associated with NPS pollution are a critical component of the NPS Program. Data collected through assessment efforts are used to define state and local NPS pollution management needs as well as provide direction for ongoing and future educational initiatives.

Assessment of the conditions and trends of beneficial uses and water quality is accomplished through the Watershed Management Program (WMP) monitoring programs as well as through local assessment projects targeting small watersheds. At the state level, all data (e.g., water quality, biological) collected by the WMP and the local watershed projects are compiled and

interpreted on a biennial basis to develop the Integrated Reports. The 303(d) list and other information in the Integrated Reports, not only help in prioritizing watersheds for restoration work, but they also aid in directing local partners to waterbodies that need further assessment to define restoration needs. At the local level, data collected through the watershed assessments are used to develop TMDLs and/or NPS pollution assessment reports that: 1) document beneficial use impairments; 2) identify NPS pollutant causes/sources; and 3) establish goals for land use improvement and NPS pollution reduction. This same data is also used to accomplish NPS Program assessment and prioritization objectives as well as to update future Integrated Reports. The most current Integrated Report is posted on the Department's web site: https://deq.nd.gov/wq/3_Watershed_Mgmt/2_TMDLs/TMDLS_IR.aspx.

In recent years, lake advisories and beach closures due to harmful algal blooms (HABS) have increased public questions regarding the sources and causes of HABs. This increased public attention has emphasized the need to expand NPS Program assessment efforts to include data collection on lakes impacted by HABs to better define the internal and external sources and causes of the HABs. This type of data provides the foundation needed to better address public concerns by identifying future actions that could be taken to minimize the intensity, duration, and frequency of HABs and improve the recreational uses of the impacted waterbodies.

Evaluation of progress toward the resource assessment objective is based on accomplishments realized through the actions identified in the 2021-2025 Management Plan. These evaluations are conducted annually to determine the status of schedule actions and identify adjustments needed to improve the effectiveness of the actions. Table 1 identifies the planned outputs, status and major 2021 activities for each resource assessment action.

Table 1. Status of Assessment Actions for 2021 Reporting Period

Assessment Action	Milestone	Planned Outputs	Status	2021 Highlights
Develop and implement watershed assessments	1/Year 2021-2025	6 watersheds	On Schedule	Active assessment projects during the reporting period included Bowman Haley Watershed Assessment, Nine Townships Watershed Assessment; and Bowman Haley Reservoir HABs Assessment.
Support HABs sample collection, analysis, and data interpretation.	2021-2025	15 lakes annually	On Schedule	Forty-five lakes were visited in 2021 to investigate HAB occurrences and conduct an initial test using test strips. Seventy-six percent (76%) of these lakes were also sampled to quantify toxin levels to provide guidance for issuing advisories
Assess 2 lakes experiencing chronic HABs to establish an assessment process for identifying internal and external sources and causes of HABs	2021-2025	2 lakes assessed and rapid assessment process	On Schedule	An assessment of the HABs in Bowman Haley Reservoir was initiated 2021. This assessment will continue through 2023 to evaluate the frequency and duration of blooms; correlations with water chemistry and extent of internal nutrient contributions.

Assessment Action	Milestone	Planned Outputs	Status	2021 Highlights
Evaluate options for a statewide citizen monitoring program and implement a pilot program	2021-2022	Pilot Program	Behind Schedule	Delayed due to staff turnover. This action will be postponed until 2022/2023 to allow time to assign new staff to this task.
Implement field scale assessment projects to evaluate soil health management system effects on water quality at the field edge and in nearby receiving waters	2022-2025	Benefits Report	Ahead of Schedule	The project entitled "Microbiome Management for Improved Nutrient Use Efficiency & Water Quality" was allocated FY21 Section 319 funding to conduct field scale assessments at several sites to evaluate the benefits of soil health management systems for improving nutrient use efficiency on croplands. Starting in 2022, annual reports for this project will be posted in GRTS under the 2021 Grant.
Conduct bacterial source tracking to determine sources of E. coli bacteria in waterbodies with chronic recreational use impairments.	2021-2025	2 watersheds annually	On Schedule	Bacterial source tracking was initiated in 2021 on the James River reach below Jim Lake in Stutsman County. This monitoring will resume in 2022.
Initiate a small watershed pilot project to evaluate the effectiveness of PTMApp for targeting BMP implementation and evaluate extent of land treatment needed to achieve PTMApp water quality goals	2022-2025	Initiate 1 Pilot project & complete final report	On Schedule	Discussions have been initiated with a local sponsor to develop and implement a pilot watershed project to "test" PTMApp, document cumulative BMP effects, and evaluate water quality trends. The project is tentatively scheduled to be initiated in 2023. Potential sites have been identified and evaluation methods are being developed. The sponsors also submitted a proposal for FY22 Section 319 funding to identify options for a BMP pay-for-progress process to evaluate during the pilot project.
Evaluate the feasibility and utility of using remote sensing for assessing HABs, potential reference sites; riparian conditions; etc.	2023	Options summary	Pending	Preliminary discussions on options for remote sensing have been initiated with UND faculty.

IV. Project Assistance

Assistance Objective: Coordinate with local partners to secure financial and technical resources to support the development and implementation of priority watershed assessments; educational programs and watershed restoration or protection projects.

As a voluntary, incentive-based program, successful implementation of NPS pollution management projects will be dependent on local support and involvement. Local participation during project development provides the opportunity to design project plans with goals and objectives that are focused on local and state water quality and NPS pollution priorities.

Although the length, size, type, and target audience of the NPS projects may vary greatly, they all share the same basic objectives. These common objectives are: 1) increase public awareness of NPS pollution, 2) reduce/prevent the delivery of NPS pollutants to waters of the state, and 3) disseminate information on effective solutions to NPS pollution.

To assist local entities in meeting their project goals, the NPS Program provides financial and technical assistance for a variety of project activities including educational events; BMP implementation; watershed assessment; project development; and conservation planning. Projects focused on education are typically initiated to familiarize the public or a specific audience (e.g., agricultural producers) with the types of NPS pollution in the state or local area, as well as the various methods available for NPS pollution control. In conjunction with the educational activities, many projects, particularly the watershed projects, also provide financial and technical assistance to plan and implement BMPs that reduce or prevent NPS pollution. Ultimately, the success of the NPS projects is dependent on the sponsors' ability to educate residents on NPS pollution issues and solutions and achieve widespread voluntary implementation of the appropriate corrective measures.

Financial and technical assistance provided by the NPS Program is typically used to support project staff, BMP implementation, water quality monitoring, and public meetings or other information/education (I/E) events. The Section 319 funding allocated to the local sponsors is provided at a 60% Section 319 and 40% local matching ratio. The local match, provided in the form of cash and/or inkind services, is derived from many different partners including, soil conservation districts, water resources boards, city councils, private foundations, landowners, NGOs, agricultural groups, and state agencies.

The Natural Resources Conservation Service (NRCS) continues to be a major source of federal financial and technical assistance for most of the watershed projects. Technical assistance provided by NRCS generally includes staff time to assist with land use assessments, public meetings, educational events and/or farm unit planning. Office space and some equipment is also provided to many NPS projects. The USDA cost share programs provide additional the financial support needed to expand the implementation of BMPs within the watershed projects. The Environmental Quality Incentive Program (EQIP) in particular, continues to be a valuable program for many NPS projects to help meet their BMP implementation objectives. The NRCS can also enter into contribution agreements with project sponsors to support the technical assistance delivered by NPS project staff. The Stockmen's Association's Environmental Services Program and the Livestock Pollution Prevention Program are two NPS projects that have received such financial support from NRCS in 2021. These funds are being used to support technical assistance provided to producers to plan and design livestock manure management systems.

At the state level, two main funding sources have been available to NPS projects. These sources are the ND Department of Water Resources Trust Funds and the ND Outdoor Heritage Fund administered by the Industrial Commission. State funds provided through these programs are not direct appropriations, but instead, they are available through a competitive application process and subject to approval by the state agencies administering the funds. The budgets for both state

funding pools are set on a biennial basis by the state legislature. Cumulatively, these programs have provided thousands of dollars to NPS projects.

The ND Department of Water Resources Trust Fund (Trust Funds) has been a consistent source of state funding for qualifying NPS projects. Qualifying projects are limited to those that provide engineering assistance to participating producers or NPS projects. For the 2021/2023 biennium, $200,000 in Trust Funds were awarded to the Department to support engineering assistance delivered by the ND Stockmen's Association's Environmental Service Program ($50,000) and the NPS BMP Team sponsored by Ransom County Soil Conservation District ($150,000). The Trust Funds were awarded to meet a portion of the 40% match requirements associated with Section 319 funds used to develop engineering designs for livestock manure management systems and riparian restoration projects.

During the 2013 legislative session, the ND legislature established and funded the ND Outdoor Heritage Fund (OHF). The original legislation committed up to $40 million per biennium to support projects addressing natural resource management and outdoor recreation needs. Water quality was recognized as a natural resource priority in the legislation. These funds are available through a competitive grant application process conducted on a semiannual basis each biennium. Unlike previous years, OHF grants were not awarded to any NPS projects in 2021.

In addition to the state or federal funds allocated to NPS projects, cash and inkind match contributions from the sponsoring entities, project partners, and agricultural producers are also a significant part of all NPS project budgets. In many projects, these types of contributions represent a majority of the required non-federal match commitments for the NPS projects. As such, participating producers, project sponsors and their partners, not only play a lead role in implementing the NPS projects, but they are also key sources of financial support for the NPS projects and NPS Program

Successful delivery of the NPS Program requires a significant amount of assistance from all partners involved in the NPS projects. The specific type and amount of assistance needed by the NPS projects is variable and usually dependent on several factors. Within many projects, limited financial and technical resources are the most common factors affecting the sponsors' ability to develop and implement a comprehensive project plan. Delivery of NPS Program assistance in 2021 has focused on providing the means to address these limitations to ensure NPS project sponsors can implement effective projects.

Evaluation of progress toward the project assistance objective is based on the accomplishments realized through the actions identified in the 2021-2025 Management Plan. These evaluations are conducted annually to determine the status of schedule actions and identify adjustments needed to improve the effectiveness of the actions. Table 2 identifies the planned outputs, status, and major 2021 activities for each project assistance action.

Table 2. Status of Project Assistance Actions for the 2021 Reporting Period

Project Assistance Actions	Milestone	Planned Outputs	Status	2021 Highlights
Implement a delivery process to increase the level of watershed management planning assistance available to soil conservation districts and other resource management organizations.	2021	Increased watershed planning in SCDs	On Schedule	FY 21 Section 319 funds were awarded to NDSU Extension Service to hire 2 staff that are focused on assisting SCDs with the development of comprehensive resource management plans. Water quality is one component addressed in these plans. Both positions have been filled and one of the planning coordinators has started. The other coordinator is scheduled to start in February 2022.
Document water quality and beneficial use conditions; sources and causes of NPS pollution; and/or progress toward water quality goals and objectives.	Ongoing	Final water quality reports for completed watershed projects	On Schedule	Due to delays associated with COVID, the FY17 Grant Award was extended one year. The due dates for the final reports for many of the FY17 projects were also extended one year. As a result, only two final reports were due in 2021 and none of those projects required a final water quality report.
Develop and implement 10 "new" NPS pollution management projects	Ongoing	2 new projects/year	On Schedule	Three new projects submitted proposals in October 2021 for FY22 Section 319 funding. These projects included the Jamestown Reservoir Watershed; Larimore Dam Watershed; and Pay-for-Progress Water Quality Outcomes Project.
Oversee the management and implementation of active NPS projects	Ongoing	25-35 active projects/year	On Schedule	Appendix B lists the projects supported by the FY17-21 Section 319 Grants.
Initiate watershed restoration projects that identify and address in-lake and watershed nutrient sources and causes for 2 lakes	2023 and 2024	2 lake-based watershed projects	Pending	Depending on outcome of the assessment, the Bowman Haley Reservoir may be the first lake where actions are taken to address in-lake nutrient sources. The Bowman Haley reservoir assessment is scheduled to end in 2023.
Develop a web-based reporting system to streamline information and data transfer between the NPS projects, the NPS Program and EPA.	2024	Web based Management System	Ahead of Schedule	Internal discussions and the compilation of information needed to solicit bids for a web-based reporting system were initiated in 12/2021. The first iteration of the web system is tentatively scheduled to be completed in the fall of 2022.

Project Assistance Actions	Milestone	Planned Outputs	Status	2021 Highlights
Expand the extent and type of technical assistance available to producers implementing soil health/regenerative ag systems by supporting producer-to-producer mentoring programs.	Ongoing	Soil Health Mentor Program	On Schedule	A rancher mentoring program has been active in the state since 2012. The technical assistance available through this program assists ranchers transitioning to a regenerative ag system. Annual educational tours and events are also implemented by the rancher mentor program. A similar program for cropland has been slower to develop due the lack of a "group" or sponsor to carry the concept forward. Discussions continue with commodity groups, SCDs, and others to identify options for establishing a cropland soil health mentor program.
Solicit funding from other state and federal programs to increase the level of funding committed to NPS pollution management in the state.	Ongoing	Additional funding to support BMP implementation and other project costs.	On Schedule	Watershed projects have been the most active over past years in submitting requests for Outdoor Heritage Funds (OHF). However, no requests were submitted in 2021. The Department did partner with the ND Game & Fish in 2020 to secure $270,000 in OHF funds to cost share the conversion of low production cropland acres in the Red River Basin to perennial vegetation. General Mills and the NRCS Conservation Collaboration Grants are additional funding sources utilized by projects in 2021
Support development and maintenance of watershed planning models and provide user training	Ongoing maintenance & Online user manual in 2022	PTMApp User manual	On Schedule	PTMApp is fully supported and available in the Red and James River Basins. https://nd.ptmapp.iwinst.org/. The AnnAGNPS model also continues to be used outside these basins for watershed prioritization. The framework for a series of online training courses has been developed and is tentatively scheduled to be available by July 2022.
Evaluate options for the NDDEQ to host and maintain the PTMApp model.	2022	Long term host for PTMApp	Pending	Review of options for the Department to host the PTMApp are planned for the fall of 2022.
Support development and implementation of a process to recognize and verify natural resource/water quality benefits of practices or systems implemented on agricultural fields	2022-2025	BMP effectiveness certification process	On Schedule	A Pay-for-Progress funding request was submitted to the NPS Task Force in October 2021. If funded, this project will identify the most feasible options for issuing cost share based on environmental outcomes from applied practices. This process may provide the foundation for an environmental stewardship certification process and/or financial assistance for applied BMP.

V. Coordination

Coordination Objective: Maintain and expand partnerships at the state and local levels to diversify input for project development and implementation as well as to increase opportunities for securing and coordinating resources to more efficiently address NPS pollution impacts.

With limited resources at the state and local level, effective delivery of the NPS Program requires a significant amount of coordination with other federal, state, and local agencies; landowners; agricultural producers; and NGOs. The primary means for coordinating statewide efforts is through direct interaction with resource management partners (e.g., NRCS, SCDs, Extension Service) as well as through the North Dakota NPS Pollution Task Force (Task Force).

Locally, coordination is primarily accomplished through direct contact and participation in project sponsor meetings. As local projects mature, coordination is generally accomplished through regular communication with the project staff to address project management issues and questions as they arise. Periodic attendance and participation in project sponsor meetings also provide the opportunity to focus discussions on project progress and future needs in the area.

At the state level, the annual NPS Task Force project proposal review process offers a forum to connect NPS project sponsors with potential partners on the Task Force. During the Task Force review process, the members are given the opportunity to become familiar with the new NPS projects seeking Section 319 financial support and the local project sponsors are given the opportunity to describe their projects to multiple potential partners in one setting. This interaction between the Task Force members and local sponsors has served as the catalyst for follow-up contacts between interested organizations on the Task Force and the local NPS project sponsors.

The partnership between the NPS Program and NRCS continues be an important relationship for most of the state's NPS pollution management efforts. Nearly all the Section 319 watershed projects utilize USDA Programs (e.g., EQIP, EWP), to some degree, to increase the number of financial resources available for BMP planning and implementation. When possible, the NRCS also provides training and technical support to NPS project staff to assist them in conducting riparian assessments, developing conservation plans, evaluating range conditions, and planning or designing manure management systems. Most NPS watershed project coordinators are also co-located in a NRCS field office. By coordinating multiple funding sources and co-locating staff with NRCS, the NPS projects have been able to implement more BMPs, which has greatly enhanced the effectiveness of their NPS pollution abatement efforts.

Coordination and cooperation between the NRCS and NPS Program were further strengthened in 2015, with the signing of a memorandum of understanding (MOU) that recognizes the Department as a conservation cooperator. With the MOU, data sharing was simplified and the relationship between BMP applied through the NRCS programs and water quality trends can be interpreted more accurately in NWQI watersheds and watershed projects supported with Section 319 funding. Informal conversations have also been initiated between the NPS Program and NRCS to evaluate the feasibility of locating water quality specialists in the NRCS Conservation Delivery Units to expand the availability of technical assistance for water quality planning.

The NDSU Extension Service (Extension Service) is another important partner of the NPS Program. At the state level, the Extension Service has taken the lead role in delivering an educational program focused on improving livestock manure management. This program not only assists the NPS Program in educating livestock producers, but it also serves as a technical support program for NPS project staff providing planning assistance focused on manure management. Additional projects Extension Service is sponsoring are focused on 1) delivery of conservation planning support to SCDs; and 2) evaluating soil health benefits for improving nutrient use efficiencies. County Extension Agents are also involved in the planning and delivery of many of the educational events sponsored by NPS projects.

Given the agricultural focus of the NPS Program, SCDs are the lead sponsor for most of the NPS projects. The SCDs provide the local leadership necessary to implement and manage projects as well as the "familiar face" to encourage greater producer/landowner involvement. The SCDs long-standing partnership with NRCS also strengthens the coordination of cost share funds provided through the USDA and NPS Program. Other local or regional organizations that are also important partners and sponsors include universities; NGOs; state agencies, and water resource boards. Appendix C lists the major NPS Program partners and the general type of assistance each entity provides to the NPS Program.

Evaluation of progress toward the coordination objective is based on accomplishments realized through the coordination actions identified in the 2021-2025 Management Plan. These evaluations are conducted annually to determine the status of scheduled actions and identify adjustments needed to improve the effectiveness of any of the actions. Table 3 identifies the planned outputs and status as well as the major 2021 activities for each coordination action.

Table 3. Status of Coordination Actions for 2021 Reporting Period

Coordination Action	Milestone	Planned Outputs	Status	2021 Highlights
Increase the number of SCDs sponsoring projects addressing water quality issues.	Ongoing	80% of SCDs have active water quality projects	On Schedule	During this reporting period, 19 SCDs sponsored NPS projects. This equates to 35% of the SCDs in the state.
Establish a coalition to improve coordination between organizations delivering assistance to improve natural resource management	2023	Statewide Coalition	Pending	In August 2021 the Department convened a meeting of state and local entities providing financial and/or technical assistance for agricultural BMP. The purpose of this meeting was to provide a forum to identify options to coordinate funding and technical assistance. Since that meeting, the ND SCD Employees Association (NDSCDEA) received an NRCS grant to develop a webpage to serve as a one-stop site for producers looking for assistance for conservation practices. As part of the web page development, the partner meetings initiated by the Department will also continue.

Coordination Action	Milestone	Planned Outputs	Status	2021 Highlights
Work with the producers, SCDs and commodity groups to increase adoption of management systems that improve water quality.	2023	Program framework focused increasing BMP adoption	Pending	Discussions have been initiated with the Soybean Growers, Soybean Council as well as some SCD supervisors to gain their perspective on obstacles for BMP implementation. These discussions will need to be expanded to include other commodity groups, SCD, etc.
Pool financial resources with partners to address nutrient sources in the watersheds of lakes impacted by HABs.	2022	2 pilot projects focused on priority fisheries	Pending	The ND Game & Fish Department and the NPS Program partnered to pool funding and secure OHF funds to implement the Red River Basin Wildlife and Water Quality Enhancement Program. The purpose of this project is to focus resources on the establishment of perennial vegetation on low production or flood prone cropland acers in the Red River Basin. This project will serve as an "example" for discussions regarding partnering on restoration work in the watersheds of priority fisheries.
Coordinate with the State Soil Conservation Committee to provide watershed planning assistance to SCDs	2021	Watershed planning assistance program	On Schedule	The State Soil Conservation Committee was awarded FY21 Section 319 funding to watershed planning specialists. Two individuals were hired in 2021 to deliver planning assistance in two SCD Areas (approximately 20 counties). Planning assistance will focus on the development of District wide conservation plans and watershed project plans identified in those plans,
Meet with NRCS to review the status of the MOU and discuss options for coordinating financial and technical assistance	Ongoing	Annual meetings	Behind Schedule	A meeting with NRCS is scheduled for February 2022 to resume the annual meetings. This upcoming meeting will focus on options for coordinating the placement of water quality specialists in NRCS Conservation Delivery Units to facilitate development of watershed assessments, NWQI projects, etc.

VI. Public Out-Reach and Education

Information and Education Objective: Strengthen support for and participation in NPS pollution management projects by increasing public awareness and understanding of NPS pollution impacts and the solutions for restoring and protecting those water resources impaired or threatened by NPS pollution.

Delivery of a balanced statewide information and education (I&E) program is a critical component of the NPS Program. While watershed projects are effective at abating sources and causes of NPS pollution, the state and local I&E projects are the used to establish greater awareness and understanding of NPS pollution issues. This educational foundation is critical for ensuring the necessary support and participation in NPS pollution management projects. The delivery method, NPS pollution message, and target audience of the educational projects vary considerably, which is reflective of the diversity of NPS pollution issues in the state. However, despite the differences, the state and local I&E projects deliver a common message on NPS pollution impacts and solutions and form the delivery network for the NPS Program's statewide educational program.

The statewide NPS pollution education network is focused on establishing the knowledge base needed to ensure NPS pollution impacts are considered by individuals involved in natural resource management, whether they are agricultural producers, consultants, engineers, homeowners, or federal/state/local agency personnel. To establish this widespread awareness, diverse audiences are targeted by the educational projects and cumulatively these events reach the entire spectrum including K-12 students, teachers, resource management professionals, agricultural producers, landowners, and the public. These educational initiatives utilize a variety of media and methods including newsletters, social media, workshops, BMP demonstrations, tours, etc. Educational projects providing technical support and training to NPS watershed project coordinators; project sponsors; and producers/landowners have also continued to be an important statewide education effort in the state. Regardless of the audience or delivery method, the educational projects and events supported by the NPS Program provide many educational offerings annually that are focused on the dissemination of information on NPS pollution sources, causes, and solutions.

Given the importance of an informed public, up to 20% of the state's annual Section 319 allocation can be used to support projects focused on the dissemination of NPS pollution information. The cumulative amount of Section 319 financial support awarded for educational projects each funding cycle is variable and determined on a case-by-case basis through the annual NPS Task Force project review process.

Evaluation of progress toward the public outreach and education objective is based on accomplishments realized through the education actions identified in the 2021-2025 Management Plan. These evaluations are conducted annually to determine the status of scheduled actions and identify adjustments needed to improve the effectiveness of the actions. Table 4 identifies the planned outputs and status as well as the major 2021 activities for each out-reach and education action.

Table 4. Status of the Out-Reach & Education Actions for the 2021 Reporting Period

Out-Reach & Education Actions	Milestone	Planned Outputs	Status	2021 Highlights
Implement a balanced public education program focused on NPS pollution issues and solutions. Target audience is K-12 students; ag producers and individuals in the ag industry	Ongoing	15-20% of the annual Section 319 grant committed to I&E projects	On Schedule	A balanced educational strategy has been maintained. The primary audiences for these projects include K-12 students, agricultural producers and individuals involved in agricultural planning. Appendices A & B list the educational projects supported in 2021.
Support the Soil Conservation and Watershed Leadership Academy to strengthen the capacity of SCDs and other resource managers to establish resource priorities and implement comprehensive watershed projects.	2025	80% of SCDs complete all levels of the Watershed Leadership Academy	Ahead of Schedule	The Soil Conservation and Watershed Leadership Academy (Academy) conducted 20 training sessions (twelve 101 level & eight 201 level) from 9/2019-5/2021. These sessions were attended by 400 individuals with a majority being SCD staff or supervisors representing 51 different districts. This equates to 94% of the SCDs in the state. The final report for the Academy is provided in the GRTS under the FY19 Grant.
Evaluate feasibility to incorporate watershed management curriculum into applicable courses at the high school (e.g., Vocational Ag classes, FFA chapters) and university levels.	Original milestone 2021 Revised milestone is 2023	Feasibility determination and, if needed, a process and schedule for incorporating	Behind Schedule	Due to staff turnover, this action has been postponed until sufficient staff time is available to gain input from Vo Ag instructors, universities etc. The revised completion date is 2023
Utilize all media to provide the public with a consistent stream of information on NPS pollution management issues and solutions.	Ongoing	Monthly releases to SCDs, counties papers, program partners, etc.	On Schedule	Public education outlets used this past year included monthly articles in the WATER magazine; NPS Program website information pages; and postings on Department social media accounts. NPS Program staff are also coordinating with the NDSCDEA to disseminate information through their pending conservation assistance web site.
Establish a statewide network of field scale demonstrations highlighting agricultural practices that improve soil health and protect water quality.	2021-2023	50*% of SCDs participating; SCD Story map*	Behind Schedule	A pilot story map page was developed and the SCDs were solicited for information to include on the page. Only limited SCD participation occurred. Follow-up contacts will need to be conducted in 2022-2023 to gain SCD support and participation in the development of a story map for the SCDs in the state.
Document public awareness and understanding of NPS pollution issues to identify steps for strengthening statewide educational offerings.	Original milestone 2022 Revised milestone 2023	Statewide public survey and report	Behind Schedule	Due to staff turnover, this action will be postponed until 2023
Support educational events focused on promoting and expanding the adoption of soil health management systems on agricultural lands.	Ongoing	Soil health education and promotion	On Schedule	Several soil health related educational events are conducted by local NPS projects each year. This includes projects such as Menoken Farm Planting Green, Rancher Mentorship Program, local watershed projects, etc. The annual and final reports for the local projects are included in the GRTS.

VII. Program Evaluation

Evaluation of NPS Program accomplishments is based on data collected within the watershed project areas; documented progress toward project goals and objectives; and completion of measurable outputs identified in the Management Plan. EPA's Grants Reporting and Tracking System (GRTS); annual and final project reports; project-specific success stories; and annual program reports are the primary means used to disseminate information on NPS Program and local project progress.

The specific monitoring methods used during the assessment or implementation phase of watershed projects are variable and dependent on many factors. These factors include variables such as project size; goals; planned BMPs; sources and causes of NPS pollution; land use; location; and type of beneficial use impairments. The monitoring approaches employed may include photo-monitoring, computer modeling, biological monitoring; stream or lake monitoring; and/or BMP tracking. The Sampling and Analysis Plan (SAP) for each project addresses these variables by describing why and how the watershed project will be monitored and evaluated. Each SAP is unique to the targeted watershed project and is the working document that identifies the parameters, monitoring sites, sampling frequencies, standard operating procedures (SOPs), etc. associated with the planned data collection.

At the end of the watershed projects, all stream and/or lake data are used to document actual water quality trends to quantify water quality improvements and describe progress toward beneficial use restoration goals. This information is compiled and summarized in a water quality report, which is included in the final watershed project report as an attachment. All final project reports are entered in the GRTS as they are completed. When applicable, the same data collected within the watershed projects is also used to complete EPA Success Stories (i.e., Type 1&2) to highlight water quality improvements or trends in specific watersheds.

Typically, 3-5 final watershed project reports are entered in GRTS for the Section 319 grants being closed out during a reporting period. For this reporting period, all projects supported under the FY17 Section 319 grant were originally scheduled to be closed out by 12/31/2021. However, due to delays associated with COVID, the end date for watershed projects and some educational projects under the FY17 grant were extended to 12/31/2022. This extension also moved the due date for the final water quality reports for the watershed projects to December 2022. As such, no final water quality reports were required this reporting period for the watershed projects supported under the FY17 Section 319 Grant.

Monitoring the effectiveness of applied BMPs in restoring the impaired use(s) and/or water quality in targeted waterbodies has been, and will continue to be, the primary means used to document watershed project success and, ultimately, NPS Program success. However, due to the delayed response in measuring the actual water quality benefits of applied BMP at the watershed scale, the Department also uses two interim measures to evaluate project progress and success. One interim measure simply focuses on tracking the locations, types and amounts of BMPs installed to gauge the degree of producer involvement and extent of land management

improvements in the watersheds. Cumulative BMPs implemented within the active projects areas this reporting period are listed in Appendix D. The cumulative Section 319 expenditures per BMP category listed in Table 5 not only indicate the cost of land management improvements, but also helps identify the type of BMP that have been most readily accepted and adopted by producers in the NPS project areas. A second measure involves using models such as STEPL and the animal feedlot runoff risk index worksheet (AFRRIW) to provide interim estimates for annual nitrogen, phosphorus and sediment load reductions associated with applied BMPs. These load reduction estimates are entered in the GRTS and used to quantify the anticipated water quality benefits of the watershed projects. Estimated nitrogen, phosphorus, and sediment load reductions associated with BMP applied during this reporting period are 39,552 pounds, 17,888 pounds, and 335 tons, respectively.

Table 5. Cumulative Section 319 expenditures per BMP Category – January 1, 2021, thru December 31, 2021

BMP Category	Section 319 Expenditures	Percent Expenditures
Cropland Management	$34,306	4.6%
Grazing Management	$338,479	45.0%
Livestock Manure Management System (Full Systems)	$184,596	24.6%
Livestock Manure Management System (Partial Systems)	$16,485	2.2%
Erosion Control /Upland Tree Plantings/Vegetative Buffers	$1,528	0.2%
Miscellaneous Practices*	$176,237	23.4%
Riparian Area Management	$0	0.0%
TOTAL	**$751,631**	

*Ninety-four percent (94%) of the miscellaneous practices costs were associated with septic system renovations.

Projects supported by the NPS Program are evaluated on a yearly basis through required annual project reports. Each completed project is also required to submit a final project report to document progress toward the goals and objectives described in the approved PIP. For the watershed projects, the final reports include a water quality report that describes progress toward the project's beneficial use and/or water quality improvement goals. For projects that do not require water quality or biological data collection (e.g., education and support projects), the annual and final evaluations focus on the degree of progress toward the objectives and tasks in the approved PIP. In some cases, if the project is addressing a specific NPS pollution source, models such as the AFRRIW or STEPL are used to document the estimated load reductions resulting from the applied BMPs.

All annual and final project reports required this reporting period have been entered in the GRTS. The purpose of these reports is to update EPA on the progress of individual projects as well as provide some insight regarding the focus and cumulative accomplishments realized through the financial and technical assistance delivered by the NPS Program. The success of the NPS Program is directly linked to the success of these NPS pollution management projects. As such,

the cumulative accomplishments described in the annual and final project reports are reflective of the overall success and progress of the NPS Program.

At the program level, the previous sections (i.e., Waterbody Prioritization; Resource Assessment, etc.) describe the type of priority waterbodies to be addressed and the actions to be taken by the NPS Program to restore or protect beneficial uses that are threatened or impaired due to NPS pollution. Most of the actions in the different sections are interconnected and will require some level of internal and external coordination to achieve the applicable objectives. Cumulatively, the outputs of those actions are intended to advance the NPS Program toward its long-term vision. Evaluation of this progress is accomplished by documenting the programmatic results realized through those actions. Progress, to date, toward the planned outcomes associated with NPS Program Delivery and Water Quality Improvement/Protection are as follows:

NPS Program Delivery Outcomes

1) Five new watershed-based projects addressing NPS pollution impairments.

- *During this reporting period one new watershed project (Sheyenne River PTMApp Project) was awarded FY21 Section 319 funding and initiated in 2021; Three new watershed projects were also tentatively approved for FY22 Section 319 funding and are scheduled to be fully funded by June 2023. These pending FY22 projects include the Upper Sheyenne River Watershed Pilot Project; Jamestown Reservoir Watershed and Turtle River-Larimore Dam Watershed.*

2) Seven assessed waterbodies with adequate data to develop TMDLs or alternative plans as well as comprehensive watershed management plans

- *Two watershed assessment projects were active in 2021. These project included the Nine Townships Watershed Assessment and the Bowman Haley Watershed and Reservoir Assessment. Both projects are scheduled to be completed in 2022.*

3) 75% of the public has a basic understanding of water quality and nonpoint source pollution issues in the state.

- *Due to staff turnover, the completion of a statewide survey to evaluate public understanding has been postponed until 2023. Educational events and material being delivered by active and future information/education projects will continue to be offered to the public to achieve widespread understanding of NPS pollution issues in the state. The survey scheduled for 2023 will be used to gauge the effectiveness of past educational efforts as well as interim progress of the NPS Program toward the 75% goal. The survey responses will also help identify any adjustments needed to maintain and/or increase public awareness.*

4) 80% of the SCDs actively involved in education or restoration projects focused on addressing water quality impairments associated with NPS pollution

- *Nineteen SCDs (35%) received Section 319 funding in 2021to implement NPS projects. Most of the projects (78%) being sponsored by the SCDs are watershed-based restoration projects*

5) Four Watershed Planning Specialists available in the state to assist local resource managers with watershed planning and implementation. Options for locating the specialists across the state include the major river basins and SCD Areas.

- *The NDSU Extension Service received an FY21 Section 319 Grant to hire two Watershed Planning Specialist. Two specialists were hired in the fall of 2021. The primary role for these individuals is to provide direct technical support to SCDs to develop and implement district-wide and watershed-based resource management plans. Feedback will be solicited from the participating SCDs in 2024 to evaluate the effectiveness of the assistance and determine if additional Specialists are needed. Annual reports on this project's progress will be posted in GRTS under the 2021 grant. The first report will be entered in 2022.*

6) 80% of annual Section 319 Grant Award used for NPS project development and implementation

- *During this reporting period, seventy-seven percent (77%) of the Section 319 funds allocated under the FY17-21 Grants have been awarded to state and local agencies and NGOs to implement projects focused on education, resource assessment, and/or BMP implementation. Projects supported under the FY17-21 Grants are listed in Appendix B.*

Water Quality Improvement/Protection Outcomes

1) Two waterbodies with one or more restored beneficial uses.

- *Data collected within the active watershed projects have not shown that impaired beneficial uses have been fully restored in any of the watersheds. However, data collected in the Upper Spring Creek Watershed does show improving trends in E. coli bacteria concentrations. These trends should continue as the Upper Spring Creek Watershed project enters its second phase in 2022 to implement additional BMP. As previously applied BMP mature and new BMP are installed the expectation is the recreational uses of the creek will be restored by the end of the second phase.*

2) Self-evaluation method for assessing environmental and economic benefits of farm or ranch operational changes implemented to improvement water quality.

- *A project entitled "Pay-for-Progress/Water Quality" was submitted for review and approval for FY22 Section 319 funding. If approved, this project will provide preferred recommendations for the establishment of a pay-for-progress system to base BMP incentive payments on environmental outcomes rather than the BMP type and amount. Part of this process will include the refinement of a method to evaluate the environmental and economic benefits of BMPs. The feasibility and acceptability of this method will be tested on working farms in a small watershed pilot project scheduled to begin in 2023.*

3) Estimated annual load reductions for nitrogen, phosphorus, and sediments of 70,000 pounds, 35,000 pounds and 15,000 tons, respectively.

- *The estimated annual nitrogen, phosphorus, and sediment load reductions associated with BMP applied in 2021 are 39,552 pounds, 17,888 pounds, and 335 tons, respectively. The values are edge-of-field estimates generated using STEPL.*

4) Research data and reports that describe the relationship between stream/lake water quality and agricultural practices applied in the watershed to serve as a foundation for developing future watershed management projects.

- *The small watershed pilot project scheduled to be initiated in 2023 will include a monitoring strategy that is designed to evaluate the correlation between estimated load reductions at the field scale and measured water quality in the stream. The percent of land treatment needed to achieve a target concentration or improving trend will also be evaluated. Reports generated through this project will be used to establish guidance to direct future watershed priority setting and planning.*

5) Assessments and/or restoration projects initiated on 4 lakes with beneficial uses impaired due to harmful algal blooms.

- *In-lake data collection was initiated in the Bowman Haley Reservoir in 2021 to evaluate internal nutrient sources fueling annual HABs. This assessment project will continue through 2023. The tributaries to the reservoir were also monitored in 2020 and 2021 to document the nutrient load from the watershed. The tributary monitoring is scheduled to be completed in 2022. A watershed restoration project is also scheduled to be initiated in 2023 to address nutrient sources identified through the assessment work in 2020-2022.*

6) Three waterbodies with improving trends in water quality and/or beneficial uses.

- *Data collected during the first phase of the Upper Spring Creek watershed indicates declining concentration trends for E. coli bacteria. A Type 2 success story will be developed and submitted for inclusion on the EPA success story website in 2022.*

Despite some setbacks associated with COVID, the NPS Program and NPS projects have been able to continue moving towards established goals. Cumulatively these projects have been able to reach thousands of people through a variety of educational programs and implemented BMP on thousands of acres through the support provided by Section 319 grants and the matching funds and services contributed by program partners. This has set the stage for continued progress. With an increased focus on building the capacity of local resource managers (i.e., SCDs) and staff to develop and implement water quality projects, program progress should increase throughout the Management Plan period. Improved resource management skills and a better understanding of NPS pollution issues and solutions at the local level will be the main factors over the next 4 years that ensure this continued progress toward the 2021-2025 Management Plan goals. Over the course of the Management Plan period, this progress will be reflected in the annual and final project reports entered in the GRTS and various programmatic reports and data summaries.

Appendix A

NPS Project Budgets & Expenditures Under the FY2016 Section 319 Grant Award
Grant Period - 5/15/2016 - 5/14/2021

Development Phase - NPS Assessment	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Eddy County Conservation & Soil Health Demonstrations	$16,260.00	$16,260.00	9.11%
Mill Dam Rehabilitation and Erosion Control Study - Phase I	$3,109.00	$3,109.00	1.74%
PTMApp Web Enhancements Project	$85,499.00	$85,499.00	47.88%
Red River Basin Cold Climate Ag Nutrient BMP Workshop	$20,000.00	$20,000.00	11.20%
Red River Basin PTMApp Development Project - Phase II	$25,240.00	$25,240.00	14.14%
Red River Basin River of Dreams Program - Pilot Project	$24,836.00	$24,835.76	13.91%
Unobligated Development Phase Fund - 2016 Grant	$0.00		
Upper Sheyenne Riparian Erosion & Sedimentation Assessment - Phase II	$3,608.00	$3,607.70	2.02%
	$178,552.00	$178,551.46	5.82%

Education - Public Outreach	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Foster Co. TREES - Phase III	$301,814.00	$301,814.00	39.55%
Prairie Waters Education and Research Center - Phase III	$260,044.00	$260,044.01	34.08%
Ranchers Mentoring and Outreach Program	$201,200.00	$201,200.00	26.37%
	$763,058.00	$763,058.01	24.87%

Local Project Support (TA or FA)	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Livestock Pollution Prevention Program - Phase V	$209,900.00	$209,900.00	21.90%
NDSU Riparian Ecological Site Description Development Project - Phase II	$78,727.00	$78,727.09	8.21%
NPS BMP Team - Phase III (NGAs G15.599, G15.1080 & G19.053)	$251,000.00	$250,999.64	26.19%
Stockmen's Association Environmental Services Program - Phase IV	$418,722.00	$418,722.00	43.69%
	$958,349.00	$958,348.73	31.24%

Watershed Project	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Antelope Creek/Wild Rice Corridor Project - Phase IV	$27,920.00	$27,920.00	2.39%
English Coulee Watershed	$140,258.00	$140,258.00	12.01%
Little Missouri River Tributaries Watershed	$20,000.00	$20,000.00	1.71%
Middle Sheyenne River Watershed	$281,058.00	$281,058.32	24.06%
Powers Lake Watershed - Phase III	$176,827.00	$176,827.00	15.14%
Spiritwood Lake Watershed	$175,377.00	$175,376.96	15.02%
Turtle Creek Watershed	$16,911.00	$16,911.30	1.45%
Wild Rice River Restoration and Riparian Project - Phase III	$329,603.00	$329,603.01	28.22%
	$1,167,954.00	$1,167,954.59	38.07%

Totals:	**$3,067,913.00**	**$3,067,912.79**

Appendix B

NPS Projects Supported Under the FY17-21 Section 319 Grants

Grant Allocation Period - 7/1/2017 - 12/31/2021

Expenditure Period - 7/1/2017 - 12/31/2021

Development Phase - NPS Assessment	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Bowman-Haley Watershed Assessment	$2,200.00	$972.58	0.24%
BSA Environmental Services (PSA for HABs Monitoring)	$9,024.00	$9,024.00	2.21%
Eddy County Conservation & Soil Health Demonstrations	$16,260.00	$14,234.52	3.49%
Heart River Nutrient Dynamics and Salinity Effects Analysis	$5,400.00	$5,400.00	1.32%
PTMApp Web Enhancements Project	$207,106.00	$155,049.35	38.04%
Red River Basin PTMApp Development Project - Phase II	$200,000.00	$199,999.99	49.07%
Red River Basin Wildlife and Water Quality Enhancement Program	$165,000.00	$9,044.55	2.22%
Development Phase Fund - 2017 Grant	$50,613.00	$0	0.00%
Development Phase Fund - 2021 Grant	$114,040.00	$0	0.00%
Upper Sheyenne Hydraulic Analysis and Project Development	$4,907.00	$4,907.35	1.20%
Upper Sheyenne River Streambank Restoration Project Development	$528.00	$527.70	0.13%
Water Quality Improvement through Farmer-Led Stewardship Project	$8,400.00	$8,400.00	2.06%
	$783,478.00	$407,560.04	5.42%

Education - Demonstration	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Menoken Farm Planting Green Project	$200,000.00	$198,991.76	100.00%
	$200,000.00	$198,991.76	2.65%

Education - Public Outreach	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Envirothon Program - Phase V	$165,000.00	$104,993.74	6.21%
Foster Co. TREES - Phase IV	$250,000.00	$227,844.65	13.48%
Microbiome Management for Improved Nutrient Use Efficiency & Water Quality	$295,000.00	$14,956.19	0.88%
NDSU Livestock Environmental Nutrient Management Education Support Program	$390,000.00	$194,516.47	11.51%
NDSU ND Soil Conservation District Area Leadership Coordinator Program	$501,211.00	$196.92	0.01%
NDSU Soil Conservation and Watershed Leadership Academy	$48,630.00	$48,629.44	2.88%
NDSU Watershed Leadership Academy	$85,363.00	$85,362.01	5.05%
Prairie Waters Education and Research Center - Phase IV	$220,000.00	$220,000.00	13.01%
Prairie Waters Education and Research Center - Phase V	$390,000.00	$170,753.77	10.10%
Project WET - Phase IV	$175,000.00	$175,000.00	10.35%
Project WET - Phase V	$175,000.00	$141,682.84	8.38%
Project WET - Phase VI	$175,000.00	$0.00	0.0%
Rancher Mentoring and Outreach Program Phase II	$257,160.00	$93,653.49	5.54%
Red River Basin River Watch & River of Dreams Program	$178,800.00	$109,719.60	6.49%
Statewide ECO ED Program - Phase IV	$199,914.00	$102,501.02	6.06%
Wells Co. Water Quality Education and Outreach Project	$64,980.00	$611.77	0.04%
	$3,571,058.00	$1,690,421.91	22.47%

Local Project Support (TA or FA)	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Livestock Pollution Prevention Program - Phase VI	$350,000.00	$350,000.00	17.65%
Livestock Pollution Prevention Program - Phase VII	$500,000.00	$435,847.21	21.98%
Livestock Pollution Prevention Program - Phase VIII	$475,000.00	$0.00	0.00%
NPS BMP Team - Phase IV	$295,654.00	$66,698.35	3.36%
Precision Ag Business Planning Support Project	$210,484.00	$210,484.00	10.62%
Precision Ag Business Planning Support Project - Phase II	$360,500.00	$11,785.23	0.59%
Stockmen's Association Environmental Services Program - Phase V	$559,000.00	$559,000.00	28.20%
Stockmen's Association Environmental Services Program - Phase VI	$618,750.00	$348,786.83	17.59%
	$3,369,388.00	$1,982,601.62	26.36%

Watershed Projects	Cumulative 319 Allocation	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Antelope Creek Watershed (Grant Co.)	$327,020.00	$199,194.85	6.14%
Antelope Creek/Wild Rice Corridor Project - Phase IV	$430,000.00	$429,999.99	13.26%
Antelope Creek/Wild Rice Corridor Project - Phase V	$323,517.00	$252,310.83	7.78%
Cottonwood Creek Watershed - Phase II	$84,365.00	$84,364.74	2.60%
Danzig Dam, Hailstone & Big Muddy Creek Watershed	$289,458.00	$100,089.93	3.09%
English Coulee Watershed Phase II	$173,770.00	$106,360.69	3.28%
Goodman Creek Watershed	$274,590.00	$193,758.84	5.97%
Griggs County Sheyenne River Riparian Corridor Project	$255,400.00	$82,926.73	2.56%
Gully Erosion Reparation Project	$150,131.00	$150,130.95	4.63%
Little Missouri River Tributaries Watershed	$330,538.00	$237,770.99	7.33%
Livestock Pollution Prevention Program - Phase IX	$639,160.00	$0.00	0.00%
Maple River Watershed - Phase II	$299,844.00	$194,705.42	6.00%
Maple River Watershed - Phase III	$334,050.00	$0.00	0.00%
Painted Woods Creek Watershed	$310,000.00	$31,083.70	0.96%
Park River Watershed	$199,361.00	$139,909.96	4.31%
Park River Watershed - Phase II	$283,621.00	$0.00	0.00%
Powers Lake Watershed - Phase IV	$298,348.00	$77,900.42	2.40%
Red River Riparian Project - Phase VI	$2,999.00	$2,999.33	0.09%
Sheyenne River PTMApp Project - Ransom Co.	$359,550.00	$9,844.93	0.30%
Spiritwood Lake Watershed - Phase II	$259,177.00	$113,568.78	3.50%
Stutsman Co. Livestock Manure Management Program - Phase II	$689,105.00	$477,871.99	14.74%
Upper Spring Creek Watershed (Dunn Co.)	$250,419.00	$180,934.94	5.58%
Wild Rice River PTMApp Prioritization and Implementation Project	$304,518.00	$0.00	0.00%
Wild Rice River Restoration and Riparian Project - Phase IV	$210,000.00	$177,125.76	5.46%
	$7,078,941.00	$3,242,853.77	43.11%

Totals:	**$15,002,865.00**	**$7,522,429.10**

Appendix C

Summary of Partner Organization Assistance to the NPS Program

	Organization Type	Assistance Type **		NPS Program Interaction with Partner Organizations				
Agency or Organization	**Federal, NGO* or State/Local**	**TA**	**FA**	**Task Force Member**	**Attend Partner Meetings**	**NPS Project Sponsor**	**BMP Support**	**NPS Project Planning Assistance**
Natural Resource Conservation Service	Federal	X	X	X	X		X	X
US Geological Survey	Federal	X	X	X	X			X
Us Farm Services Agency	Federal	X	X	X			X	
US Fish & Wildlife Service	Federal	X		X				X
US Forest Service	Federal	X		X				X
US Environmental Protection Agency	Federal	X	X	X	X		X	X
US Army Corps of Engineers	Federal	X						
ND Association of Soil Conservation Districts	NGO	X		X	X			
ND Stockmen's Association	NGO	X	X	X	X	X	X	X
Red River Basin Commission	NGO	X		X	X			X
Resource Conservation & Development Councils	NGO	X	X		X	X	X	X
Ducks Unlimited	NGO	X	X		X		X	
ND Grazing Lands Coalition	NGO	X	X		X	X	X	X
ND Certified Crop Advisors Board	NGO	X			X			
Keep ND Clean Inc.	NGO	X			X			X
International Water Institute	NGO	X			X	X		X
Pheasants Forever, Inc.	NGO	X	X			X	X	X
Local Soil Conservation Districts	State/Local	X	X		X	X	X	X
Water Resource Boards (county-level)	State/Local	X	X		X	X	X	X
ND Department of Agriculture	State/Local	X	X	X		X	X	X
ND Game & Fish Department	State/Local	X	X	X			X	X
Upper Sheyenne Joint Water Resource Boards	State/Local	X			X			X
NDSU Extension Service (State-level)	State/Local	X	X	X	X	X		X
ND State Water Commission	State/Local	X	X	X	X	X	X	X
ND Forest Service	State/Local	X		X	X		X	X
ND Industrial Commission	State/Local		X				X	
Universities (NDSU, UND, VCSU)	State/Local	X	X			X		X
ND Department of Public Instruction	State/Local	X			X			X
Cities	State/Local	X	X		X			X
ND State Historic Preservation Office	State/Local	X						X

* NGO- Nongovernmental Organization

** TA – Technical Assistance; FA – Financial Assistance

Appendix D

BMP Implemented during the Management Plan Period under the FY17-21 Section 319 Grants

Period of 1/1/2021 - 12/31/2021

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Cropland Management					
Cover Crop	741.00	Acres	$7,434.33	$4,956.22	$12,390.55
Residue Management (No-Till and Strip Till)	200.00	Acres	$0.00	$0.00	$0.00
Short Term Management Agreement	97.13	Acres	$26,872.04	$17,914.69	$44,786.73
		Total	**$34,306.37**	**$22,870.91**	**$57,177.28**
Erosion Control					
Critical Area Planting	7.00	Acres	$1,527.71	$1,018.48	$2,546.19
		Total	**$1,527.71**	**$1,018.48**	**$2,546.19**
Grazing Management					
Alternative Power Source (Livestock Watering Only)	7.00	Number	$13,346.78	$8,897.86	$22,244.64
Electric Fence Energizer	2.00	Number	$515.99	$343.99	$859.98
Fencing	55,069.68	Linear Feet	$60,840.01	$40,560.00	$101,400.02
Fencing (Barbed)	23,111.00	Linear Feet	$23,747.04	$15,831.36	$39,578.40
Fencing (Multiple Wire Electric)	14,768.00	Linear Feet	$8,417.76	$5,611.84	$14,029.60
Pasture/Hayland Planting	837.30	Acres	$27,879.90	$18,586.60	$46,466.51
Pipelines	21,358.00	Linear Feet	$61,759.48	$41,172.99	$102,932.47
Rural Water Hookup	3.00	Number	$2,185.80	$1,457.20	$3,643.00
Solar Pumps	1.00	Number	$4,602.72	$3,068.48	$7,671.20
Trough and Tank	30.00	Number	$39,422.71	$26,281.83	$65,704.56
Well (Livestock Only)	15.00	Number	$95,760.65	$63,840.46	$159,601.11
		Total	**$338,478.84**	**$225,652.61**	**$564,131.49**

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Livestock Manure Management System (Full System)					
Phase II Waste Management System	1.00	System(s)	$44,596.12	$29,730.74	$74,326.86
Waste Management System (Full System Completed)	1.00	System(s)	$140,000.00	$210,000.00	$350,000.00
		Total	**$184,596.12**	**$239,730.74**	**$424,326.86**
Livestock Manure Management System (Partial System)					
Portable Windbreaks	693.00	Number	$16,485.00	$10,990.00	$27,475.00
		Total	**$16,485.00**	**$10,990.00**	**$27,475.00**
Miscellaneous Practices					
Cultural Resource Review	4.00	Number	$2,913.00	$1,942.00	$4,855.00
Septic System Renovation	20.00	Number	$165,581.93	$110,387.96	$275,969.89
Solar Pumps	1.00	Number	$3,905.84	$2,603.90	$6,509.74
Well Decommissioning	6.00	Number	$3,835.78	$2,557.18	$6,392.96
		Total	**$176,236.55**	**$117,491.04**	**$293,727.59**
		Grand Total	**$751,630.59**	**$617,753.78**	**$1,369,384.41**