

**North Dakota  
Nonpoint Source Pollution Management Program Plan**



**2021 - 2025**

# North Dakota Nonpoint Source Pollution Management Program Plan

2021-2025

Doug Burgum, Governor  
L. David Glatt, P.E., Director, Department of Environmental Quality



North Dakota Department of Environmental Quality  
Division of Water Quality  
918 East Divide Avenue  
Bismarck, North Dakota 58501  
701.328.5210

## **Table of Contents**

Table of Contents .....	ii
List of Tables .....	ii
List of Appendices .....	iii
I. Introduction .....	1
II. NPS Program Overview .....	2
A. Program Mission, Vision and Goals .....	2
B. Program Technical Support .....	3
C. Major NPS Pollutants .....	4
D. Local Project Types and Focus .....	5
E. Project Review Process .....	7
III. Program Delivery .....	9
A. Water Body Prioritization .....	9
B. Resource Assessment .....	11
C. Project Assistance .....	12
D. Coordination .....	15
E. Information & Education .....	18
IV. Program Evaluation .....	19

## **List of Tables**

Table 1. Categories and subcategories of NPS pollution sources .....	4
Table 2. Nonpoint Source Pollution Task Force Members .....	8
Table 3. Local NPS project sponsors and financial partners .....	14

## **List of Appendices**

Appendix A: Evaluation Worksheet for Draft Project Proposals

Appendix B: Evaluation Worksheet for Final Project Implementation Plans

Appendix C: ND NPS Pollution Management Program Task Force Section 319 Project Proposal Review Process, Policies and Schedule

Appendix D: NPS Program Monitoring Strategy

Appendix E: Key Components of an Effective NPS Pollution Management Plan

Appendix F: Summary Table of Partner Organization Assistance to the NPS Program

Appendix G: NPS Projects Supported with Section 319 Funds as of January 1, 2021

## **I. INTRODUCTION**

When the Clean Water Act (CWA) was reauthorized in 1987 with the inclusion of nonpoint source pollution control provisions under Section 319, states were provided the means to more effectively address water quality impairments caused by nonpoint source pollution (NPS pollution). Under Section 319 of the CWA, each state was required to develop a state management plan describing NPS pollution impairments in the state and actions to be taken to address those impairments. The State of North Dakota submitted and received approval from the Environmental Protection Agency (EPA) for its first Nonpoint Source Pollution Management Plan in 1988. The original plan underwent a significant revision in February 1999 followed by several minor revisions between 1999 and 2008. Starting in 2010, a 5-year cycle was established to conduct regular updates to the management plan. Under this schedule, the management plan was revised in 2015 and scheduled for another update in 2020 to set direction for the Nonpoint Source Pollution Management Program (NPS Program) from 2021-2025.

During the 2021-2025 period for the Nonpoint Source Pollution Management Program Plan (Management Plan), the NPS Program will continue to be a voluntary, incentive-based program. As in past years, the program will remain focused on the delivery of financial and technical assistance to address local NPS pollution abatement priorities. Working with program partners, the NPS Program will also remain focused on the promotion and implementation of a watershed approach to protect or restore beneficial uses threatened and/or impaired by NPS pollution.

Implementation of the Management Plan will be accomplished through a coordinated effort with local, state and federal agencies as well as nongovernmental organizations (NGOs). Through the formation of these partnerships, the necessary financial and technical resources will be available to local sponsors to meet their goals and demonstrate that nonpoint source pollution control or prevention can be accomplished effectively and voluntarily. Ultimately, the success of the NPS Program will be dependent on the ability of the local sponsors and their partners to demonstrate to agricultural producers and the general public that NPS pollution control and water quality improvement practices are compatible with and, in many cases, can enhance sustainable agricultural production.

The Management Plan includes three specific sections that describe the implementation of the NPS Program. The Program Overview section identifies the NPS Program long term vision and mission and as well as the goals for the Management Plan's 5-year period. The basic components of the NPS Program are also summarized in the Program Overview section. Implementation of the Management Plan is described in the five subsections under the Program Delivery section. Each Program Delivery subsection identifies the objectives and associated actions that will be initiated to achieve the 5-year goals for the Management Plan. The Evaluation section, which is the final section, describes the measurable outputs to be tracked to define progress at the program and project levels.

## **II. PROGRAM OVERVIEW**

### **A. Program Mission, Vision and Goals**

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.

Goal 2: Through the local watershed projects, improve water quality trends and/or restore impaired beneficial uses of 5 waterbodies by 2025.

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.

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.

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 Section III. Measures that may be 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) will be the primary means used to report and document project-specific progress to the EPA. The applicable EPA performance measures (e.g., WQ-10) will also be used to report on projects where a beneficial use has been fully restored. Communication with North Dakota residents regarding program progress will be another important reporting component for the NPS Program. The NPS Program website, articles, social media, newsletters, meetings, radio, and other forms of media will be used to “report to the public” on progress toward statewide and local NPS pollution management goals.

## **B. Program Technical Support**

Given the diversity of the NPS Program, successful implementation of the Management Plan requires the involvement of Department personnel with a wide range of water quality and watershed management expertise. To ensure the appropriate technical support is available, state general funds and approximately 20% of the state's annual Section 319 allocation are used to support Department staff assisting with the implementation of the Management Plan. These funds are used to support staff involved with: 1) program administration and coordination; 2) information and education (I/E) programs; 3) watershed assessment and implementation projects; 4) analysis of water quality and biological samples collected within project areas; 5) maintenance of the GRTS; 6) data management and interpretation; and 7) inspection of manure management systems supported by the NPS Program. Most of the NPS Program technical assistance is directed toward local and statewide projects supported by the NPS Program. This technical support is focused on strengthening the abilities of project staff and sponsors to: assess NPS pollution impacts; document water quality trends and/or improvements; expand educational efforts; and ultimately, develop stronger more focused NPS pollution management projects.

While the primary responsibilities of the different staff positions are focused on specific components of the Management Plan, many of the NPS Program's objectives and tasks require involvement from several Department staff. Consequently, most of the work activities for the different personnel positions are interdependent. Specific Department positions involved in the NPS Program are as follows:

- ✓ Water Quality Division Director & Watershed Management Program Manager
- ✓ NPS Pollution Management Program Coordinator
- ✓ Environmental Scientist (Watershed Planning & I/E Program Coordination)
- ✓ Environmental Scientist (Monitoring and Assessment Assistance)
- ✓ Environmental Scientist (Groundwater Monitoring)
- ✓ Chemists (Sample Analysis)
- ✓ Environmental Scientist/Engineer (Animal Feeding Operation Inspections)
- ✓ Staff Support

The staffing and support workplans for Department staff assisting with the implementation of the Management Plan are posted under each grant year in the EPA Grants Reporting and Tracking System (GRTS).

### **C. Major NPS Pollutants**

Within any watershed, the amount and type of NPS pollution can be variable and dependent on many natural or anthropogenic factors. Some of the natural factors that affect NPS pollution delivery rates in the state include precipitation intensity and frequency, wind, soil type, salinity and topography. Alteration of the physical landscape through various land management activities such as construction; overgrazing; excess tillage; concentrated livestock feeding area; surface and tile drainage; stream channelization; and wetland drainage can also influence the type and amount of NPS pollution delivered to a waterbody. Land use activities such as these are manageable and will be the focus of restoration or protection projects supported by the NPS Program. Table 1 lists the potential sources of NPS pollutants in the state.

**Table 1. Landuse Categories and Subcategories that are Potential NPS Pollution Sources**

<u>Agriculture</u>	<u>Resource Extraction/Exploration/Development</u>
Non-irrigated crop production	Surface mining
Irrigated crop production	Subsurface mining
Pasture grazing - riparian and upland	Petroleum activities
Pasture grazing - riparian	Abandoned mining (gravel pits)
Pasture grazing - upland	
Concentrated animal feeding operations	<u>Land Disposal (runoff/leachate from areas)</u>
Rangeland - riparian and upland	Sludge
Rangeland – riparian	Wastewater
	Landfills
<u>Construction Runoff</u>	Industrial land treatment
Highway/road/bridge construction	On-site wastewater systems (septic tanks, etc)
<u>Silviculture</u>	<u>Habitat Modification</u>
Harvesting, restoration, residue management	Removal of riparian vegetation
Forest management	Bank or shoreline modification/destabilization
Logging road construction/maintenance	Drainage/filling of wetlands
<u>Other</u>	<u>Hydromodification</u>
Golf Courses	Dredging
Erosion from derelict land	Dam construction
Atmospheric deposition	Upstream impoundment
Waste storage/storage tank leaks	Flow regulation/modification
Spills	
Natural sources	<u>Urban Runoff/Storm Sewers</u>
Internal nutrient cycling	Nonindustrial
Sediment re-suspension	Industrial
Surface and tile drainage systems	Surface runoff
	Other urban runoff
	Highway/road/bridge runoff

---

The NPS pollutant sources listed in Table 1 represent a universal list of potential NPS pollution sources in the state. While all these sources are present, under proper management, NPS pollutants originating from any of these sources can be greatly diminished. The NPS Program will focus on those sources needing better management. During the Management Plan period, potential NPS pollutant sources that will generally be targeted include agricultural lands; degraded riparian areas; animal feeding operations; and failed on-site wastewater treatment systems. NPS pollutants associated with these sources include nitrogen, phosphorus, sediment

and E. coli bacteria. However, when other less common NPS pollutants are causing the beneficial use and/or water quality impairments, projects addressing those pollutants will also be eligible for NPS Program support.

#### **D. Project Types and Focus**

Given the size of the agricultural industry in North Dakota, a majority (i.e., >80%) of the Section 319 funds awarded to the state will be used to evaluate and address NPS pollution associated with agricultural production. These funds will be used to support educational activities; conduct watersheds assessments; implement watershed restoration projects and support the implementation of best management practices (BMP). Most BMP supported by the NPS Program will address NPS pollution associated with the management of cropland, livestock manure, grazing lands and riparian corridors. On cropland and grazing land, the focus will be on improvement of soil health and restoration of degraded soils. Where applicable, management of nutrients and tile drain systems on cropland will also be addressed. Structural and management practices designed to improve management of concentrated feeding areas and livestock grazing will be used to minimize water quality impacts associated with excess manure accumulations and over utilization of grazing land or riparian corridors. Educational programs will be conducted at both the state and local levels and range in size from simple one day events to multi-year programs that provide “one-on-one” mentoring services. Section 319 funds will also be used to support watershed assessments to document existing water quality/beneficial use conditions and identify the sources and causes of NPS pollutants impairing the beneficial uses. Major non-agricultural NPS pollution sources that may also be addressed in the project areas include failed onsite sewage treatment systems and eligible urban areas.

Annually, the NPS Program uses Section 319 funding to support 25-30 NPS pollution management projects throughout the state. While the length, size, target audience, and structure of the projects may vary significantly, they all share the same basic objectives. These common objectives are: 1) increase public awareness of NPS pollution issues and solutions; 2) reduce/prevent the delivery of NPS pollutants to waters of the state; and 3) evaluate benefits of the project. Projects supported by the NPS Program will generally fall under one of four different categories that describe the basic focus of the project. These project categories are: 1) development phase projects; 2) watershed projects; 3) support projects; and 4) information/education projects. A brief description of each project category is as follows:

Development Phase Projects: Development phase projects are the first step in determining NPS pollution management needs and solutions. The watershed scale assessment projects under this category are generally initiated by local groups or organizations in response to an observed water quality problem and/or other information on water quality conditions of a specific waterbody (e.g. lake water quality reports). Information and/or data collected through the watershed assessment projects is typically used to: 1) determine the extent of beneficial use impairments associated with NPS pollution; 2) identify sources and causes of NPS pollution; 3) establish watershed-specific NPS pollutant reduction targets; 4) identify feasible solutions to achieve NPS pollutant load reduction goals; and 5) develop a Total Maximum Daily Load (TMDL), when applicable. In addition to the watershed assessments, the development phase projects also may include projects focused on the watershed project development; public outreach; assessment tool development; or the

evaluation of new or emerging NPS pollutant sources and causes. The development phase projects are generally one to two years in length.

Watershed Projects: Watershed projects are the most comprehensive and long-term projects implemented through the NPS Program. These projects are designed to address NPS pollution impacts identified through previous development/assessment projects or TMDL reports. The basic goal of the watershed projects is to restore or protect the beneficial uses of waterbodies that are impaired or threatened by NPS pollution. This watershed project goal is generally accomplished by; 1) promoting voluntary adoption of specific BMPs; 2) providing financial and technical assistance to implement BMPs; 3) disseminating information on the project and solutions to identified NPS pollution impacts; and 4) evaluating progress toward meeting NPS pollutant reduction goals. Local sponsors utilize multiple funding sources whenever possible to support their watershed restoration efforts. These sources may include Section 319 funds, USDA cost-share, North Dakota Outdoor Heritage funds (OHF Funds), and local contributions. Section 319 funding allocated to a watershed project is typically used to employ staff, cost-share BMPs, conduct I&E events, and monitor trends in the aquatic community, water quality and/or land use. Watershed projects, which are generally initiated as five-year projects, can be extended another five or more years depending on progress; size of the watershed; and extent of beneficial use impairments associated with NPS pollution.

To effectively reduce or eliminate the transport of NPS pollutants to surface and/or ground water resources, various “source control” measures are implemented within the watershed project areas. These source control measures or BMPs are designed to: 1) prevent pollutants from leaving a specific area; 2) reduce/eliminate the introduction of pollutants; 3) protect sensitive areas; and/or 4) prevent interaction between precipitation and pollutants. Specific BMPs supported by the NPS Program and the associated Section 319 cost share policies are described the “North Dakota Nonpoint Source Pollution Management Program Cost Share Guidelines for Nonpoint Source Pollution Control Best Management Practices” (BMP Cost Share Guidelines). The web address for the BMP Cost Share Guidelines is:

[https://deq.nd.gov/WQ/3\\_Watershed\\_Mgmt/1\\_NPS\\_Mgmt/NPS.aspx](https://deq.nd.gov/WQ/3_Watershed_Mgmt/1_NPS_Mgmt/NPS.aspx). Within each watershed project, the type of BMPs implemented will be dependent on the: 1) NPS pollutants being addressed; 2) specific sources and causes of NPS pollution; 3) NPS pollution delivery mechanisms; and 4) feasibility and affordability of the prescribed BMPs.

Support Projects: These are projects that support BMP implementation within other NPS project areas or address a specific NPS pollutant source. Support projects can be statewide in scope or targeted toward specific NPS projects, geographic areas or priority watersheds. Generally, support projects deliver a specific specialized service or provide financial and/or technical assistance to implement a specific type of BMP. Services provided by these projects may include the development of construction designs and/or planning and financial assistance to implement BMPs such as livestock manure management systems; wetland restorations and/or riparian buffers. Most support projects will be 5 or more years in length.

Information/Education Projects: The fourth type of NPS project is the information/education (I/E) project. As the name implies, projects in this category are designed to educate the public on various NPS pollution issues. Educational projects can vary greatly in size, focus and target audience and be delivered statewide or locally. Some projects may only use demonstrations or workshops to reach the target audience while others combine several educational offerings to deliver a NPS pollution management message. The information/education projects can be one to three years in length, with the option to extend the project an additional three years, if adequate progress is demonstrated.

A majority of the NPS Program projects are sponsored and managed by soil conservation districts (SCDs). Other project sponsors include water resource boards (WRBs), universities, nongovernmental organizations (NGOs), cities and other state agencies. NPS Program financial assistance provided to the project sponsors is typically used to support activities such as staffing; BMP implementation; biological and water quality sample collection; and public meetings or other I/E events. NPS Program staff also provided technical support to project sponsors for project planning and management; data interpretation, and sample analysis. Two NPS Program databases are provided to the project sponsors to manage the Section 319 funds allocated to the project and track the location, amount, cost and type of BMPs supported with Section 319 funding. Section 319 funding awarded to the projects is provided at a 60% Section 319 and 40% local matching ratio. The local match, which can be in the form of cash and in-kind services, is generally derived from several program partners including SCDs, WRBs, city councils, private foundations, landowners, state agencies, NGOs, and agricultural companies.

## **E. Project Review Process**

The North Dakota NPS Pollution Management Task Force (Task Force) serves as the advisory board to the NPS Program for the development and implementation of the Management Plan. The main function of this multi-agency board is to provide recommendations on proposed projects to help ensure a balanced NPS Program is implemented in North Dakota. Through the Task Force meetings, the members are given the opportunity to review projects seeking Section 319 financial support. Discussions during the annual project reviews also serve as a catalyst for creating more coordination between the organizations represented on the Task Force and the NPS project sponsors. The Task Force has 28 members representing NGOs, as well as local, state and federal agencies (Table 2).

The Task Force project review process involves two steps. The first step of the process is focused on the review of draft project proposals. During this step, representatives of the sponsoring entities are invited to the Task Force meeting to present their project and answer any questions from the Task Force members. Following the presentations, the Task Force discusses the eligibility, strengths, weaknesses, goals and objectives of each draft proposal. Through the Task Force discussions and the draft proposal evaluation worksheets (Appendix A), the NPS Program is provided input on the appropriateness of the projects as well as comments on components of the project plans that need improvement or clarification. All the Task Force comments are shared with the project sponsors to assist them in completing the final project implementation plans (PIP).

For the second step, the Task Force is provided the opportunity to comment on the “programmatic” benefits of each project. During this phase of the review, the final PIPs are provided to the Task Force members along with a summary of the revisions to each PIP. Rather than a face-to-face meeting, this step is facilitated through a conference call or written correspondence. When reviewing the final PIPs, the Task Force members are asked to evaluate criteria such as: 1) project location; 2) potential for statewide application; 3) innovativeness; 4) transferability of information; 5) benefits to ongoing projects; and 6) cost effectiveness. The Task Force members are given the option to complete a final project proposal evaluation worksheet (Appendix B) or provide comments on specific sections of a PIP. Feedback from the Task Force is used to update the final PIPs before they are submitted to EPA for final funding consideration.

An approximate schedule for the annual Task Force review process and a more detailed description of the review process and policies are included in Appendix C.

**Table 2. Nonpoint Source Pollution Task Force Members**

---

Public/Private Organizations

ND Association of Soil Conservation Districts	ND Farm Bureau
ND Farmers Union	ND Grain Growers Association
ND Pork Producers	ND Natural Resources Trust
ND Rural Water Systems Association	
ND Stockmen’s Association	
Red River Basin Commission	

State Agencies

ND Department of Agriculture	ND Department of Environmental Quality
ND Game and Fish Department	ND Geological Survey
ND Parks and Recreation Department	NDSU Agricultural Extension Service
NDSU Ag Extension Service--Soil Conservation Committee	ND State Water Commission
ND Governor’s Office	ND Forest Service

Federal Agencies

USDA Agricultural Research Service	USDA Farm Services Agency
USDA Natural Resource Conservation Service	USDA Forest Service
USDA Rural Development	USDI Bureau of Land Management
USDI Fish & Wildlife Service	USDI Geological Survey
US EPA Region VIII	

### **III. PROGRAM DELIVERY**

Delivery of the NPS Program will be accomplished through five interrelated objectives addressing: Waterbody Prioritization; Resource Assessment; Project Assistance; Coordination; and Information & 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 Delivery Objectives and NPS Program goals. The planned milestones and outputs for each action will be used to gauge interim progress. Since many of the outputs may be connected to the actions of several Delivery Objectives, the planned outcomes resulting from the cumulative actions of the NPS Program are provided in the Evaluation Section.

#### **A. Waterbody Prioritization**

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 for prioritization purposes, 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 projects. 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 more accurately represent 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 some additional factors project sponsors may consider when identifying watershed assessment priorities. They also have the option to include un-assessed waterbodies on their priority list. These un-assessed waterbodies are only added if local interest is high and observed conditions suggest beneficial uses are impaired. 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 the basin level.

Within the priority watersheds, further prioritization is also accomplished with the Annualized Agriculture Nonpoint Source Pollution model (AnnAGNPS) or the Prioritize, Target and Measure Application (PTMApp). Both models are used to identify areas and/or sub-watersheds within the priority watersheds that are potential sources of nitrogen, phosphorus and/or sediment. These target areas are the focus for BMP implementation within the watershed project areas. 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 areas within the watershed project areas. However, the PTMApp also allows the user to easily “zoom-in” to identify critical sites within specific agricultural fields or subwatersheds to assist with BMP planning. The PTMApp also provides estimates for downstream NPS pollutant reductions associated with applied BMPs as well as cost estimates for those reductions. The PTMApp is only available for the watersheds of the Red and James River basins in the state.

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

NPS Program priorities are intended to be dynamic and subject to revision as new data become available. As such, program priorities will be reviewed annually and adjusted, accordingly, to keep the program focused on the most pressing needs in the state. When appropriate, the Management Plan will also be updated to address significant priority changes.

Given the variability in local interest and resources, the 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 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 sources will include small and medium animal feeding operations, degraded riparian areas, cropland with saline areas and/or impacted by frequent flooding, and failed septic systems.

## **B. Resource Assessment**

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 landuse 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](https://deq.nd.gov/wq/3_Watershed_Mgmt/2_TMDLs/TMDLS_IR.aspx).

In recent years, advisories and beach closures due to harmful algal blooms (HABS) have increased public questions regarding the sources and causes of HABS as well as potential solutions. 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 will provide 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.

**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.

### **2021-2025 Assessment Actions:**

- Provide financial and technical assistance to develop and implement watershed assessments that document the sources and causes of NPS pollutants impairing beneficial uses. *Milestone: Six new watershed assessments initiated from 2021-2025.*
- Support costs associated with sample collection, analysis and data interpretation to determine the need for public advisories in waterbodies experiencing HABS. *Milestone: Ongoing; 15 lakes monitored annually*
- Support research/assessment projects on 2 lakes experiencing chronic HABS to evaluate temporal trends in nutrient concentrations; contributions from internal and external

nutrient sources; watershed and in-lake management solutions; etc. to establish an assessment process for identifying sources and causes of HABs in lakes and reservoirs.

*Milestone: Research/assessments initiated in 2021 and 2022 and rapid assessment process developed by 2025*

- Determine technical, financial and delivery options for a statewide citizen monitoring program and implement a pilot program. *Milestone: Complete program framework and establish pilot program partnerships in 2021; Implement pilot program in 2022*
- Coordinate with universities as well as other partners to implement field scale assessment or research projects to evaluate soil health management system effects on water quality at the field edge and in nearby receiving waters (e.g., streams, wetlands, lakes, etc.). *Milestone: Initiate in 2022; Interim report on the benefits/impacts by 2025*
- Conduct bacterial source tracking to determine sources of E. coli bacteria in waterbodies with chronic recreational use impairments. *Milestone: Up to 2 waterbodies annually*
- Initiate a small watershed pilot project (e.g., 12-digit HU or less) to evaluate the effectiveness of using PTMApp at the watershed scale to develop a targeted BMP approach to reduce nutrient and sediment loads/concentrations. Extent of land treatment to achieve water quality goals established with PTMApp will also be evaluated. *Milestone: Initiate the demonstration in 2022; Trends and benefits report by 2025*
- Evaluate the feasibility and utility of using remote sensing for assessing HABs, potential reference sites; riparian conditions; etc. *Milestone: Summary of remote sensing options, costs, accuracy, applications, etc. in 2023.*

### **C. Project Assistance**

As a voluntary, incentive-based program, successful development and 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; water quality monitoring; and conservation planning. Projects focused on education are typically initiated to familiarize the general 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 will be 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 in-kind services, can be 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) is 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 landuse assessments, public meetings, educational events and/or farm unit planning. Office space and some equipment may also be provided to the NPS projects. The USDA cost share programs provide the additional financial support needed to expand the implementation of BMPs within the watershed projects. The Environmental Quality Incentive Program (EQIP) in particular, has proven to be a valuable program for many NPS projects to help meet their BMP implementation goals and objectives.

From a state perspective, two main sources of financial assistance are available to NPS projects. These sources are the State Water Commission Trust Funds and the Outdoor Heritage Fund. The funds provided through these state 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.

The State Water Commission Trust Fund (SWC Trust Fund) has been a consistent source of state funding available to the Department for qualifying NPS projects. Qualifying projects are limited to those that provide engineering assistance to other NPS projects. The SWC Trust Funds must be secured by the Department from the State Water Commission through a biennial application process. Each biennium, up to \$200,000 in SWC Trust Funds can be awarded to the Department to support eligible NPS projects. For the successful applicants, the SWC Trust Funds fulfill the 40% match requirement associated with Section 319 funds used to support the development of engineering designs for BMP such as livestock manure management systems and riparian restoration projects.

During the 2013 legislative session, the ND legislature passed a bill to create and fund 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. Although the funding commitments per biennium have declined since 2013, water quality management is still recognized as one of the eligible resource concerns under the OHF. These funds are available through a competitive grant application process conducted on a semiannual basis throughout each biennium. Looking forward, under this Management Plan, it is expected the OHF funds will continue to be available. However, the total funding available each biennium

will vary due to fluxuations in the tax revenues used to support the OHF fund.

Although direct state or federal funding allocations are the main sources of revenue for NPS projects, the cash and inkind match contributions from the sponsoring entities, project partners, and agricultural producers are also a significant part of NPS project budgets. These local contributions typically 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. Table 3 lists some of the sponsoring entities and financial partners that may provide support for the development, implementation and/or management of NPS projects over the next 5 years.

**Table 3. Local NPS project sponsors and financial partners.**

Soil Conservation Districts	State Water Commission	Lake Associations
Water Resource Districts	N.D Department of Agriculture	Grazing Associations
City Councils	Pheasants Forever	Universities
ND Stockmen’s Association	County Commissions	Ducks Unlimited
Industrial Commission (OHF)	ND Game & Fish Department	Wildlife Clubs
NDSU Extension Service	Commodity Groups	Landowners/Producers

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. However, the most common factors are typically limited financial and technical resources to develop and implement a comprehensive project plan. Delivery of NPS Program assistance will focus on providing the means to address these limitations to ensure NPS project sponsors can implement effective projects.

**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.

**2021-2025 Assistance Actions:**

- Implement a delivery process to increase the level of watershed management planning assistance available to soil conservation districts and other resource management organizations to increase their capacity to develop and implement strategies addressing water quality impairments, soil degradation, and other natural resource challenges.  
*Milestone: Initiate in 2021*
- Provide sample collection training; analytical support and data interpretation for samples collected within NPS projects to document: 1) water quality and beneficial use conditions, 2) sources and causes of NPS pollution, and/or 3) progress toward water quality goals and objectives. *Milestone: Ongoing annually*

- Develop and implement 10 “new” NPS pollution management projects. These projects will include education, support and watershed projects. *Milestone: Two new projects initiated annually*
- Oversee the management and implementation of 25-30 active NPS projects, annually. Appendix G lists the active NPS projects as of 1/1/2021. *Milestone: Ongoing*
- Initiate watershed restoration projects that identify and address in-lake and watershed nutrient sources and causes for 2 lakes. Emphasis will be placed on projects focused on lakes experiencing frequent HABs. *Milestone: Initiate projects in 2023 and 2024*
- Develop a web-based reporting system to streamline information and data transfer between the NPS projects and Department. This may include platforms for tracking BMP implementation and facilitating the transfer of reports, reimbursement requests, agreements, load reduction data, etc. *Milestone: Web-based data management system completed in 2024*
- Expand the extent and type of technical assistance available to producers implementing soil health/regenerative ag systems by supporting producer-to-producer mentoring programs. *Milestone: Ongoing annually*
- Solicit funding from other state and federal programs (e.g., Outdoor Heritage Funds, USDA Resource Conservation Partnership Program) to increase the level of funding committed to NPS pollution management in the state. *Milestone: Ongoing annually*
- Support development/maintenance of watershed models (e.g., AnnAGNPS, PTMApp) and provide user training to strengthen the ability of local resource managers (e.g., SCD staff, watershed coordinators, NRCS) to prioritize, plan and implement comprehensive watershed restoration projects addressing NPS pollution impairments. *Milestone: Model development/maintenance is ongoing; PTMApp Training in 2021*
- Evaluate options for the Department to host and maintain the PTMApp model. *Milestone: Identify preferred option by 2022.*
- Support the development and implementation of a process for recognizing and verifying the natural resource/water quality benefits of management systems implemented by agricultural producers in the state. *Milestone: Pilot program established in 2022*

#### **D. Coordination**

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 the local projects mature, coordination will be primarily accomplished through regular communication with the project staff. Interaction with project staff will generally focus on day-to-day program delivery. Attendance and participation in project sponsor meetings will also provide the means to maintain close coordination regarding project management and progress.

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 serves as the catalyst for follow-up contacts between interested organizations on the Task Force and the local NPS project sponsors. The Task Force meetings also provide the outlet for its members to exchange information on how and where their agency programs are addressing water quality issues in the state.

The partnership between the NPS Program and NRCS is a key 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, CRP), to some degree, to increase the amount 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 can implement more BMPs, which greatly enhances the effectiveness of their NPS pollution abatement efforts. Given the benefits of the NRCS/NPS Program partnership, all NPS project sponsors are encouraged to utilize the USDA programs, when possible; to compliment Section 319 funding budgeted for BMP implementation.

Coordination and cooperation between the NRCS and NPS Program was 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.

The NDSU Extension Service (Extension Service) is another major 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. In addition to this program, the Extension Service has also sponsored other projects focused on issues such as: 1) development of riparian ecological site descriptions; 2) documenting the benefits of BMPs; and 3) managing soil salinity and soil health. County Extension Agents are also involved in the planning and delivery of many of the educational events sponsored by NPS projects.

Local project sponsors are currently the main avenue for coordinating programs within the NPS project areas. Soil Conservation Districts (SCD) are generally the lead sponsors for the waterbody assessments and watershed projects, while Extension Service, state agencies and NGOs are typically the sponsors for the education and support projects. Primary responsibilities of the project sponsors include: 1) PIP development; 2) project administration; 3) progress reporting; 4) financial and technical assistance delivery; 5) PIP revisions; and 6) public outreach and education.

Given the agricultural focus of the NPS Program, SCDs will continue to be 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 will also be important partners and sponsors include universities; NGOs; state agencies, and water resource boards. Appendix F lists the major NPS Program partners and the general type of assistance each entity provides to the NPS Program.

**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.

**2021-2025 Coordination Actions:**

- Increase the number of soil conservation districts with active programs and projects addressing local water quality issues. *Milestone: Ongoing; Over 80% of SCDs have active water quality programs by 2025*
- Establish a representative group or coalition to improve communication and coordination between local, state, and federal organizations; commodity groups, and NGOs delivering financial and technical assistance to improve natural resource management in the state. *Milestone: 2023*
- Work with the agricultural producers, SCDs and commodity groups in the state (e.g., Soybean Growers, Corn Growers, Stockmen’s etc.) to identify feasible steps for increasing producer adoption of management systems that improve and protect water quality. *Milestone: A framework for a program or process to be initiated by the commodity groups by 2023*
- Pool financial resources with NPS Program partners to increase assistance available for projects addressing nutrient sources in the watersheds of lakes impacted by HABs. *Milestone: Coordinate with local resource managers and ND Game & Fish Department to commit state and federal funds (e.g., Save Our Lakes and Section 319 funds) for a pilot project that addresses nutrient sources in the watersheds of 2 priority fisheries impacted by HABs - 2022*

- Coordinate with the State Soil Conservation Committee to increase the level of watershed planning assistance available to SCDs. *Milestone: Initiate a pilot Watershed Planning Program in 2021*
- Meet with NRCS, annually, to review the status of the MOU and discuss options for coordinating financial and technical assistance within the NPS project areas. *Milestone: Annual meeting in January/February*

## **E. Information & Education**

Delivery of a balanced information and education (I&E) program throughout the state 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 primary means 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 topic, and target audience of the educational projects do vary considerably, which is reflective of the diversity in NPS pollution education 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 primary purpose of the statewide NPS pollution education network is to establish the knowledge base needed to ensure NPS pollution impacts are always 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, the target audiences will vary between educational projects and generally cover the entire spectrum including K-12 students, teachers, resource management professionals, agricultural producers, landowners, and the general public. These educational initiatives may utilize a variety of media and methods (e.g., 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 are also recognized as important statewide education efforts. Regardless of the audience or focus, priority educational efforts under the NPS Program must include educational offerings 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 will be available 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 will be determined on a case-by-case basis through the annual NPS Task Force project review process.

**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.

## **2021-2025 Information and Education Actions:**

- Implement a balanced public education program focused on priority NPS pollution issues and solutions with an emphasis on reaching K-12 students; agricultural producers and individuals involved in the agricultural industry. – *Milestone: Ongoing. Allocate 15-20% of the annual Section 319 grant award to educational projects and programs.*
- Continue supporting the Soil Conservation and Watershed Leadership Academy to strengthen the capacity of SCD supervisors/staff and other local resource managers to establish resource management priorities and develop/implement comprehensive watershed project plans. - *Milestone: 80% of SCDs complete all three levels of the Academy by 2025*
- Evaluate feasibility to incorporate watershed management curriculum into applicable courses at the high school (e.g., Vocational Ag classes, FFA chapters) and university levels. *Milestone: Feasibility determination and, if needed, a process and schedule for incorporating by 2021*
- Utilize all forms of media to provide the general public with a consistent stream of information on NPS pollution management issues and solutions. *Milestone: Ongoing. Monthly information releases to SCDs, counties papers, program partners, etc.*
- Establish a statewide network of field scale demonstrations highlighting agricultural practices that improve soil health and protect water quality. *Milestone: 50% participation from SCDs by 2023; Complete Web-based story map for sharing information on the demonstrations 2021*
- Document the degree of public awareness and understanding of NPS pollution issues in the state to identify steps needed to strengthen statewide educational offerings. *Milestone: Complete statewide public survey and summary report in 2022*
- Support educational events focused on promoting and expanding the adoption of soil health management systems on agricultural lands. *Milestone: Ongoing*

## **IV. PROGRAM EVALUATION**

Evaluation of NPS Program accomplishments will be based on data collected within the watershed project areas; documented progress toward individual 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; EPA measures and annual program reports will be the primary means used to disseminate information on NPS Program and local project progress and success.

The NPS Program Monitoring Strategy (Appendix D) is project-based and includes two basic goals. The first goal is to assist resource managers with the collection of data in priority watersheds to determine NPS pollution management needs and, when applicable, develop TMDLs. This goal applies to the watershed assessment projects. For the implementation phase watershed projects, the monitoring goal is to evaluate the extent of pollutant reductions and beneficial use improvements resulting from BMPs applied within the targeted watersheds.

The specific monitoring methods used for the assessment or implementation phases of the watershed projects are variable and dependent on many factors. These factors include such variables 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 are also variable and 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 how the watershed project will be monitored as well as how the project will be evaluated. Each SAP will be unique to the targeted watershed project and will be the working document that identifies the specific steps and standard operating procedures (SOPs) associated with the planned data collection. All data collected within the watershed projects are used to track water quality and beneficial use conditions to evaluate progress toward project-specific goals and objectives.

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. 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. At the end of the watershed projects, all available 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 and objectives. When applicable, the data collected within the watershed projects is also used to satisfy performance measures established by the EPA (e.g., WQ10).

Projects supported by the NPS Program will be evaluated on a yearly basis through required annual project reports. Each project will also be 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 will also include a water quality report that describes progress toward the project's beneficial use and/or water quality improvement goals. These final data summaries are based on the water quality data collected during the project and/or the outputs generated by computer models (e.g., STEPL, AFRRIW, PTMApp). For projects that do not

require water quality or biological data collection (e.g., education and support projects), the annual and final evaluations will 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 AFRIW or STEPL may also be used to document the estimated load reductions resulting from the applied BMPs. All annual and final project reports will be entered in the GRTS to update EPA on the progress of the projects supported by the NPS Program. Overall, the success of the NPS Program is directly linked to the success of the NPS pollution management projects implemented by the partner organizations. As such, the cumulative accomplishments of the projects will be a major factor to consider when evaluating NPS Program success and progress.

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 will advance the NPS Program toward its long-term vision. Evaluation of this progress will be accomplished by documenting the programmatic results of those actions. Measurable outcomes for NPS Program delivery and water quality improvement or protection that will be used to gauge success at the end of the Management Plan period are as follows:

#### NPS Program Delivery Outcomes

- Five new watershed-based projects addressing NPS pollution impairments.
- Seven assessed waterbodies with adequate data to develop TMDLs or alternative plans as well as comprehensive watershed management plans
- 75% of the public has a basic understanding of water quality and nonpoint source pollution issues in the state.
- 80% of the SCDs actively involved in education or restoration projects focused on addressing water quality impairments associated with NPS pollution
- 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.
- 80% of annual Section 319 Grant Award used for NPS project development and implementation

#### Water Quality Improvement/Protection Outcomes

- Two waterbodies with one or more restored beneficial uses
- Self-evaluation method for assessing environmental and economic benefits of farm or ranch operational changes implemented to improve water quality.
- Estimated annual load reductions for nitrogen, phosphorus and sediments of 70,000 pounds, 35,000 pounds and 15,000 tons, respectively.
- 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.

- Assessments and/or restoration projects initiated on 4 lakes with beneficial uses impaired due to harmful algal blooms.
- Three waterbodies with improving trends in water quality and/or beneficial uses

## **Appendix A**

### **Evaluation Worksheets for Draft Project Proposals**

## Evaluation Worksheet for Draft Information & Education Project Proposals

**Project Name:** \_\_\_\_\_

The purpose of the draft proposal review is to: 1) determine if the proposed actions are applicable for addressing the identified NPS pollution concerns or a statewide priority NPS pollution issue; 2) evaluate if the project is consistent with the goals of the NPS Pollution Management Program; and 3) recommend the extent of Section 319 funding for the project. A fourth component of the review process is to provide written comments on steps that should be taken to strengthen the project plan to prepare it for final review and funding consideration.

### **Statement of Need**

- |  |        |
|--|--------|
| 1) Is the educational message focused on water quality issues associated with NPS pollution?   | Yes/No |
| 2) Is the focus of the project consistent with the educational goals and objectives of the ND NPS Pollution Management Program?                                | Yes/No |
| 3) Will the educational message help fill an educational need or strengthen/compliment other local or statewide educational projects addressing NPS pollution? | Yes/No |
| 4) Is the primary target audience appropriate?   | Yes/No |

Provide comments to improve/clarify the statement of need: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Goals, Objectives, and Tasks**

- |   |        |
|---|--------|
| 1) Is the goal consistent with the NPS pollution issues and educational focus described in the Statement of Need section?               | Yes/No |
| 2) Is the proposed level and type of technical support appropriate for the size and scope of the project?                               | Yes/No |
| 3) Do the Objective Statements include realistic and measurable targets to be achieved through the educational programs and activities? | Yes/No |
| 4) Are the Tasks for each Objective clearly stated and focused on the target set for the Objective?                                     | Yes/No |
| 5) Are the type and number of planned educational activities appropriate and attainable?  | Yes/No |
| 6) Are the delivery methods for the educational message appropriate?  | Yes/No |

Provide comments to improve/clarify the goals, objectives and tasks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Coordination**

- |  |        |
|--|--------|
| 1) Are the appropriate partners involved in the project? If not, provide suggestions for other entities that should be involved. | Yes/No |
|--|--------|

2) Will the project be working with other projects or programs with similar goals (e.g., Extension Service, Schools, other 319 projects, Universities, etc.) to avoid duplication of efforts? Yes/No

3) Has the extent of local support been described or confirmed through feedback from potential partners and participants or support letters (sources of letters can be listed, or the letters can be attached)? Yes/No

Provide comments to improve/clarify project coordination: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Monitoring and Evaluation**

1) Have sufficient measures been scheduled to evaluate or gauge progress toward the targets set in the project’s goals and objectives? Yes/No

2) Are the evaluation methods appropriate for the target audience and type of educational events? Yes/No

Provide comments to improve/clarify project monitoring and evaluation: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Budget**

1) Does the Part 1 Budget Table include sufficient State/Local Match to match the Section 319 funds being requested? [Note: A 60% Section 319/40% State/Local Match matching ratio is required] Yes/No

2) Are the costs listed in the Part 2 Budget reasonable and appropriate, given the activities described in the project’s objectives and tasks? Yes/No

Provide comments to improve/clarify the budget information: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Task Force Member Recommendations**

1) Based on the information in the project proposal, are the goals of the project consistent with the goals of the ND NPS Pollution Management Program? Yes/No

Provide recommendations to strengthen consistency with Program goals: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2) At what level should the project be funded? (a) Fully Fund; (b) Partially Fund; (c) Do Not Fund

Additional Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Evaluation Worksheet for Draft Support Project Proposals

**Project Name:** \_\_\_\_\_

The purpose of the draft proposal review is to: 1) determine if the proposed actions are applicable for addressing the identified NPS pollution concerns or a statewide priority NPS pollution issue; 2) evaluate if the project is consistent with the goals of the NPS Pollution Management Program; and 3) recommend the extent of Section 319 funding for the project. A fourth component of the review process is to provide written comments on steps that should be taken to strengthen the project plan to prepare it for final review and funding consideration.

### **Statement of Need**

- 1) Are the services or support offered by the project needed to better address NPS pollution priorities within local NPS project areas and/or at the statewide level? Yes/No
- 2) Have the primary types of beneficial uses and impairments to be addressed by the project's services or support been adequately identified? Yes/No
- 3) Is the size of the project area appropriate for the type of services offered? Yes/No
- 4) Are the project's services or support clearly described and consistent with the identified needs of the project and the goals of the NPS Pollution Management Program Plan? Yes/No
- 5) Have the primary NPS pollutants to be addressed by the project been adequately identified and have the linkages been made between the identified beneficial use impairments and the NPS pollutants? Yes/No
- 6) Have the NPS pollution sources (e.g., degraded riparian corridors, cropland, etc.) and causes (e.g., excess tillage; reduced riparian vegetation, etc.) to be addressed by the project been adequately identified and have the linkages been made between the sources and causes? Yes/No

Provide comments to improve/clarify the statement of need: \_\_\_\_\_

---

---

---

### **Goals, Objectives, and Tasks**

- 1) Is the project goal consistent with the local or statewide needs described in the Statement of Need section? Yes/No
- 2) Is the amount and type of services or support appropriate for addressing the identified needs? Yes/No
- 3) Do the Objective Statements include realistic and measurable targets for the delivery of the services and/or support? Yes/No
- 4) Are the Tasks for each Objective clearly stated and focused on the target set for the Objective? Yes/No
- 5) Will a process be established to schedule and prioritize the delivery of the planned services or support? Yes/No

Provide comments to improve/clarify the goals, objectives and tasks: \_\_\_\_\_

---

---

---

**Coordination**

1) Are all the appropriate partners involved in the project? If not, provide suggestions for other entities that should be involved. Yes/No

2) Will the project be working with other projects or programs with similar goals (e.g., NRCS, other 319 projects, Extension Service, etc) to avoid duplication of efforts Yes/No

3) Has the extent of local support been described or confirmed through feedback from potential project partners and participants or support letters (sources of letters can be listed or the letters can be attached)? Yes/No

Provide comments to improve/clarify project coordination: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Monitoring and Evaluation**

1) Are the evaluation methods sufficiently described and adequate for gauging the success and extent of the services or support provided by the project? Yes/No

Provide comments to improve/clarify project monitoring and evaluation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Budget**

1) Does the Part 1 Budget Table include sufficient State/Local Match to match the Section 319 funds being requested? [Note: A 60% Section 319/40% State/Local Match matching ratio is required] Yes/No

2) Are the costs listed in the Part 2 Budget reasonable and appropriate, given the activities described in the project's objectives and tasks? Yes/No

Provide comments to improve/clarify the budget information: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Task Force Member Recommendations**

1) Based on the information in the project proposal, are the goals of the project consistent with the goals of the ND NPS Pollution Management Program? Yes/No

Provide recommendations to strengthen consistency with Program goals: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2) At what level should the project be funded? (a) Fully Fund; (b) Partially Fund; (c) Do Not Fund

Additional Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Evaluation Worksheet for Draft Watershed Project Proposals

**Project Name:** \_\_\_\_\_

The purpose of the draft proposal review is to: 1) determine if the proposed actions are applicable for addressing the identified NPS pollution concerns or a statewide priority NPS pollution issue; 2) evaluate if the project is consistent with the goals of the NPS Pollution Management Program; and 3) recommend the extent of Section 319 funding for the project. A fourth component of the review process is to provide written comments on steps that should be taken to strengthen the project plan to prepare it for final review and funding consideration.

### **Statement of Need**

- |  |        |
|--|--------|
| 1) Is the size of the watershed or project area manageable given the type of the NPS pollution issue(s) to be addressed and the amount of technical and financial resources described in the project plan?   | Yes/No |
| 2) Are the impaired or threatened beneficial uses (e.g., recreation, aquatic life, drinking water, etc.) to be addressed adequately identified?  | Yes/No |
| 3) Have the NPS pollutants impairing or threatening the beneficial uses been adequately identified and has the linkage been made between the impairment and the pollutant?   | Yes/No |
| 4) Have the NPS pollution sources (e.g., degraded riparian corridors, cropland, confined feeding areas, etc.) and associated land management activities causing the NPS pollution been adequately identified and have the linkages been made between the sources and causes? | Yes/No |
| 5) Are the priority areas for the sources and causes of the water quality impairments clearly identified to provide direction for targeting technical and financial resources?   | Yes/No |

Provide comments to improve/clarify the statement of need: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Goals, Objectives, and Tasks**

- |   |        |
|---|--------|
| 1) Is the project goal focused on the identified beneficial uses impairments or threats?  | Yes/No |
| 2) Is the proposed level and type of technical assistance appropriate for the size and scope of the project?  | Yes/No |
| 3) Do the Objective Statements include realistic and measurable targets for addressing the sources and causes of the NPS pollutants impairing or threatening beneficial uses? | Yes/No |
| 4) Are the Tasks for each Objective clearly stated and focused on the target set for the Objective?   | Yes/No |
| 5) Are the types and amount of planned best management practices (BMP) appropriate to address the identified causes of NPS pollution?   | Yes/No |
| 6) Are the planned education and outreach events focused on the appropriate subject matter and target audience?   | Yes/No |

Provide comments to improve/clarify the goals, objectives and tasks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Coordination**

- 1) Are all the appropriate partners involved in the project? If not, provide suggestions for other entities that should be involved. Yes/No
  
- 2) Will the project be working with other projects or programs with similar goals (e.g., NRCS, other 319 projects, Extension Service, etc) to avoid duplication of efforts? Yes/No
  
- 3) Has the extent of local support been described or confirmed through feedback from potential partners and participants or support letters (sources of letters can be listed or the letters can be attached)? Yes/No

Provide comments to improve/clarify project coordination: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Monitoring and Evaluation**

Due to potential changes in the size and scope of the draft project plans, the Quality Assurance Project Plan (QAPP) for the proposed projects will not be developed until the final project plan is completed. Therefore, the monitoring and evaluation section will not be evaluated during the review of draft project proposals.

**Budget**

- 1) Does the Part 1 Budget Table include sufficient State/Local Match to match the Section 319 funds being requested? [Note: A 60% Section 319/40% State/Local Match matching ratio is required] Yes/No
  
- 2) Are the costs listed in the Part 2 Budget reasonable and appropriate, given the activities described in the project’s objectives and tasks? Yes/No

Provide comments to improve/clarify the budget information: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Task Force Member Recommendations**

- 1) Based on the information in the project proposal, are the goals of the project consistent with the goals of the ND NPS Pollution Management Program? Yes/No

Provide recommendations to strengthen consistency with Program goals: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 2) At what level should the project be funded? (a) Fully Fund; (b) Partially Fund; (c) Do Not Fund

Additional Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **Appendix B**

### **Evaluation Worksheet for Final Project Implementation Plans**

## Final Project Implementation Plan Evaluation & Prioritization Worksheet

**Project Name:** \_\_\_\_\_

*NOTE: The following criteria should be considered when evaluating the statewide and/or programmatic benefits of the final project implementation plans. Each criterion should be ranked on a 0-10 point scale. A score of "0" will indicate very low programmatic benefits and a score of "10" will indicate very high benefits.*

1) Location of the project will help expand NPS Program efforts into an area of the state with only minimal NPS pollution management activity. \_\_\_\_\_

2) The project will implement and demonstrate a unique or innovative approach for addressing specific or multiple sources and/or causes of NPS pollution. \_\_\_\_\_

3) The project is addressing a substantial, well defined NPS pollution issue or concern in the state. \_\_\_\_\_

4) The delivery process; BMP's applied or demonstrated; or information generated and/or disseminated by the project will have statewide applications and can be easily transferred to other projects. \_\_\_\_\_

5) The project will provide or demonstrate a cost-effective approach for addressing NPS pollution in the state. \_\_\_\_\_

6) Project progress is measurable and the information and data collected can also be used to evaluate overall program benefits and accomplishments. \_\_\_\_\_

**TOTAL SCORE** \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **Appendix C**

### **ND NPS Pollution Management Program Task Force Section 319 Project Proposal Review Process, Policies and Schedule**

## **ND NPS Pollution Task Force Section 319 Project Proposal Review Process (7/20)**

### **Approximate Schedule for the Annual Review Process**

**October 1<sup>st</sup>:** Draft project proposals are due. All proposals must be submitted to the NPS Program by this due date. The draft proposals are posted on the NPS Program website and the Task Force members are notified when they are posted.

**November:** The NPS Task Force reviews all draft project proposals. Project sponsors are invited to the Task Force meeting to present their project and answer any questions. If necessary, the Task Force meeting may be scheduled over two days to allow adequate time for sponsor presentations and Task Force questions and discussion.

**November - December:** Based on Task Force input, the NPS Program identifies the draft project proposals that are eligible for final review in February/March and forwards the Task Force comments to the appropriate project sponsors. Recommended Section 319 funding levels are also provided to the sponsors of the eligible projects. The project sponsors finalize their project proposals by addressing the Task Force and NPS Program comments.

**January:** Final project proposals are due. The specific due date is variable and is set after the draft project proposal review process is complete. The final project proposals are posted on the NPS Program web site and the Task Force is notified of their availability.

**February/March:** Conduct a meeting (i.e., virtual or face-to-face) to review revisions to the PIPs and request additional input/comments on the final PIPs. If needed, the NPS Program will coordinate with the project sponsors to revise the PIP to address additional comments from the Task Force.

**March/April:** The NPS Program submits the Section 319 grant application to EPA and forwards the approved final project implementation plans to EPA. The submittal date for the Grant Application will be dependent on when the federal fiscal year Section 319 budget is provided to EPA.

**April/May:** EPA reviews the final project implementation plans and Section 319 grant application.

**May/June:** EPA issues the Section 319 Grant Award and the NPS Program develops the appropriate agreements (i.e., Notice of Grant Award and Federal Requirements Form) to complete the allocation of the requested Section 319 funds to the local sponsors/projects.

## **A. Draft Project Proposal Review**

The draft project proposal review will include two basic steps. The first step of the process will focus on project presentations. The sponsors of all the proposed projects will be invited to the Task Force meeting to present their project and answer any questions from the Task Force members. These presentations will be approximately 15 minutes, including a question and answer period. The second step will involve an open Task Force discussion on the eligibility, strengths, weaknesses, goals/objectives, etc. of each draft proposal. The draft project proposal review process should be completed in November of each year.

When necessary, the draft review process may be conducted over a two day period to allow sufficient time for presentations and discussions. To the extent possible, project presentations will be scheduled so that a sponsor's presentation and the Task Force discussions on their project proposal will occur on the same day. This will allow all sponsors the opportunity to attend the Task Force discussions following their presentations. During the Task Force discussions, the project sponsors will only be allowed to respond to direct questions on their project. Representatives for Task Force member organizations sponsoring a draft project proposal will also be limited to responses to direct questions on their organization's project.

Task Force members will use the appropriate Evaluation Worksheet (Appendix B) to evaluate each draft project proposal. Project evaluations will focus on the relationship between the project's goal, identified water quality/beneficial use impairments; and NPS pollution sources/causes. Other components of the draft proposals that will be evaluated include the degree of local support, partnerships, coordination, evaluation methods, and costs. Only one "set" of project evaluation worksheets can be submitted per Task Force member organization. All completed evaluation worksheets must be submitted to the NPS Program Coordinator approximately two weeks after the draft project review meeting. The specific due date will be determined by the Task Force at the draft proposal review meeting.

If a project is requesting continuation funding, a summary of accomplishments made with funds previously awarded must be provided with the draft proposal. The Task Force members will need to take these past accomplishments into account when reviewing the continuation proposal. A review of the progress of all continuation projects should be part of the Task Force discussions following the presentations. When completing the evaluation worksheet for a continuation project, the Task Force members should note in the Comments section if they are satisfied with the past accomplishments. The degree of progress should be a major factor to consider when assigning a final priority ranking for the project.

Project-specific funding levels will not be decided during the draft proposal review process. Instead, the Task Force will use the attached evaluation worksheets to provide funding recommendations to the NPS Program Coordinator. These recommendations will indicate a general funding level (i.e., full, partial, or no) relative to what was requested by the sponsors. The Task Force will also provide written comments on specific revisions needed in the proposed project budgets. These recommendations and comments will serve as guidelines for the NPS Program to assist project sponsors with the development of the budgets for the final project implementation plans (PIP). NPS Program staff will coordinate with the project sponsors to make

the necessary budget revisions to ensure the cumulative Section 319 funding request for the eligible projects is “close” to the anticipated Section 319 allocation for the fiscal year.

Task Force comments and funding recommendations provided during the draft proposal review process are compiled and used by the NPS Program to evaluate eligibility for final funding consideration. Based on the Task Force feedback and additional evaluation criteria, the NPS Program will identify specific projects that can be resubmitted for final review and funding consideration. Additional criteria that will be used by the NPS Program during this evaluation includes: 1) proposal completeness; 2) appropriateness of the project goal, objectives and tasks; 3) consistency with NPS Program goals; 4) extent of local support; 5) non-federal match commitments; and 6) availability of 319 funding. The Task Force comments on the draft project proposals and NPS Program Section 319 funding recommendations are forwarded to the sponsors for the eligible projects to assist with the development of the final PIP’s.

## **B. Final Project Implementation Plan Review**

In preparation for the final step in the review process, the NPS Program will coordinate with the project sponsors to identify options for revising the project budgets to be consistent with the recommended Section 319 funding level. During this interim period, the sponsors will also revise the project implementation plans (PIP) to address the Task Force comments provided through the draft review process. When completed, the final PIPs will be resubmitted to the NPS Program for final review and submittal to EPA for funding consideration. The final PIPs will be provided to the Task Force through the NPS Program website and the Task Force will be asked to provide any final comments on the PIPs. If needed, the NPS Program may also convene a Task Force meeting (virtual or face-to-face) to review the revisions in the final PIPs and solicit additional feedback before the PIPs are submitted to EPA.

The final review process will focus on the evaluation of the “programmatic” benefits of each project. Consideration will be given to such criteria as: 1) new project locations; 2) potential for statewide application; 3) innovativeness; 4) transferability of information; 5) benefits to ongoing projects; and 6) cost effectiveness. Using these criteria, the Task Force will have the option to assign priority rankings to the final PIPs. These priority rankings will only be necessary if the cumulative funding request for the projects exceeds the anticipated Section 319 allocation for that fiscal year. Under such situations, the Task Force will use the Final Project Proposal Evaluation Worksheet (Appendix C) to establish project-specific rankings. These priority rankings will be used by the NPS Program when evaluating budget adjustments (per project) if the fiscal year Section 319 allocation is insufficient to fully support the original cumulative funding request for all the projects.

## **C. Project Evaluation Worksheets**

The appropriate evaluation worksheets (Appendix A) will be provided to the Task Force members during the draft project proposal review process. These worksheets are to be completed for each project proposal to evaluate and document project appropriateness and eligibility. The completed worksheets must be provided to the NPS Program by the deadline set by the Task Force during the draft project proposal review meeting.

If necessary, during the final project implementation plan review process the Task Force members will be provided the Final Project Implementation Plan Evaluation Worksheet (Appendix B). This worksheet lists several programmatic criteria to consider when evaluating the overall benefits of the projects. When it is anticipated insufficient Section 319 funds will be available, the worksheet may be used to assign relative priority rankings to each project. In such cases, projects offering the greatest programmatic benefits should be assigned the highest priority ranking. If the priority rankings are needed, the completed evaluation worksheets must be submitted to the NPS Program by an established deadline.

#### **D. General Guidelines for the Distribution of Section 319 Funding**

Through the annual review process, the Task Force will be given the opportunity to provide comments and recommendations on all the projects seeking Section 319 financial support. As a general guideline, a majority (80% or more) of the state's Section 319 funding should be allocated to projects addressing NPS pollution. This includes all the projects that can be defined as Development Projects; Information/Education Projects; Support Projects; or Watershed Projects. Project category definitions are provided in Section II. To maintain an even greater "on-the-ground emphasis," over fifty percent (50%) of the available Section 319 funding should be awarded to watershed-based projects that directly address impaired beneficial uses through the implementation of best management practices (BMP). Projects with this type of focus are those included in the Watershed or Support Project categories. However, to strengthen and expand public support for these on-the-ground efforts, up to 20% of the state's cumulative Section 319 funding should be committed to the projects focused on information dissemination and public education.

**Appendix D**  
**NPS Program Monitoring Strategy**

## **NPS PROGRAM MONITORING STRATEGY**

### **A. Monitoring Overview**

As a part of the Statewide Monitoring Strategy, the NPS Program monitoring strategy focuses on data collection designed to assist with the implementation and evaluation of projects supported by the ND NPS Pollution Management Program. The NPS Program monitoring strategy is project-based and includes two basic goals. The first goal is to assist resource managers with the collection of data to determine NPS pollution management needs within priority watersheds. The second monitoring goal is to evaluate the benefits of BMPs applied within watershed projects supported by the NPS Program and its partners. To accomplish these goals, the NPS Program coordinates with entities such as the Natural Resources Conservation Service (NRCS); United State Geological Survey (USGS); soil conservation districts; universities; Extension Service; and water resource boards. The support and involvement of landowners, farmers and ranchers is also an important component of most monitoring activities.

Implementation of the NPS Program monitoring strategy is directed, in a large part, by information provided in the most current “Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads” (Integrated Report). Waterbodies included on the 303(d) list with beneficial uses impaired by NPS pollution are considered priority waterbodies for assessment work under the NPS Program. These 303(d) listed waterbodies will be the starting point when planning assessment projects with program partners. To ensure a greater likelihood for the implementation of post-assessment corrective measures, the degree of local interest and support is also used to further define watershed assessment priorities. Through this process, the priorities established may include a mix of 303(d) listed waterbodies along with some previously unlisted waterbodies. Watershed priorities established through this process are the focus of assessment efforts initiated under the NPS Program monitoring strategy. The TMDL reports or NPS pollution assessment reports (i.e., for previously unlisted waterbodies) developed with the assessment data, provide the foundation for the development of watershed-based projects that will implement practices to address the identified NPS pollution impairments.

Evaluation of the NPS Program’s “on-the-ground” benefits primarily targets watershed-based projects focused on specific water quality impairments associated with NPS pollution. Assessment data collected within the watershed projects describes the baseline water quality and beneficial use conditions whereas the water quality data collected during the implementation phase is used to track trends to document attainment of water quality and/or beneficial use improvement goals identified in the watershed management plans. The success of these watershed projects is always dependent on widespread implementation of various best management practices (BMP). As such, the specific monitoring approach and water quality parameters for a project are dependent on the type of BMP to be used to address the impaired use(s) and/or water quality impairments. All data collected within a project are used to evaluate the progress and success of the project as well as the NPS Program. When applicable, data collected within a watershed project are also used to satisfy program performance measures established by the EPA.

The implementation plans for all NPS Program projects that schedule water quality and/or biological data collection must also include a Sampling and Analysis Plan (SAP). Due to the diversity of the monitoring goals between projects, specific monitoring details are described in a project-specific SAP rather than the Watershed Management Program (WMP) Quality Assurance Program Plan (QAPP). Since the NPS Program is part of the WMP, the WMP QAPP serves as an umbrella document outlining the quality assurance/quality control requirements for all monitoring projects supported by the NPS Program. Each NPS Program SAP must align with the WMP QAPP and should address the key elements of EPA's Guidance for Quality Assurance Project Plans that are not covered in the WMP QAPP. The project-specific elements addressed by a SAP should include: 1) purpose of the project, 2) data quality objectives and measurement criteria, 3) sampling site locations, 4) water quality/biological parameters, 5) sample collection frequency, 7) sampling methods, 8) analytical methods, 9) sample handling and chain of custody procedures, and 10) any project-specific quality assurance requirements that differ from those described in this QAPP (e.g., type and frequency of quality control samples, record keeping, etc.). The SAPs are prepared before monitoring begins and may be revised at any time during the life of the project.

Each SAP is unique for the targeted watershed and serves as the working document that describes the steps and procedures associated with the planned data collection activities. In most cases, the development and implementation of NPS Program monitoring efforts generally follow a similar process from the assessment phase through the evaluation phase. Typical steps in this process are as follows:

- Coordinate with program partners (e.g., SCD, WRD, County Commissions, etc.) to identify local watershed assessment and/or implementation priorities. Criteria used to define priorities may include current 303(d) waterbody listings; degree of local interest; current data available, observed beneficial use conditions, and current land management activities.
- Develop an assessment phase SAP for the highest priority waterbody.
- Collect data (e.g., chemistry, biological, etc.) according to the SAP to document current beneficial use conditions and identify causes of beneficial use impairments.
- Assess current land management in the watershed to determine types and sources of pollutants impairing beneficial uses and identify potential BMP for addressing the impairment sources.
- Utilize assessment data to develop Watershed Assessment Reports (for unlisted waterbodies) and/or TMDL reports for 303(d) listed waterbodies.
- Coordinate with project partners to identify feasible solutions to restore and/or improve impaired beneficial uses

- Develop a SAP to evaluate benefits associated with the implementation of the watershed project implementation plan.
- On an annual basis, track the implementation of corrective measures and, when applicable, utilize computer models to estimate associated pollutant load reductions. Models that may be used include AnnAGNPS; STEPL; Prioritize, Target and Measure Application (PTMApp); and the Animal Feedlot Runoff Risk Index Worksheet (AFRRIW).
- At the end of the project, compile and interpret all data to quantify water quality trends; define beneficial use conditions; and evaluate progress toward project goals for pollutant reductions and beneficial use improvements. Develop a water quality report for inclusion in the final project report and entry in the GRTS.
- Based on data summaries, reevaluate future beneficial use restoration or maintenance needs.
- If feasible, coordinate with program partners to collect post-project data to document delayed stream and/or lake responses to land management improvements in the watershed.

As previously indicated, the NPS Program Monitoring Strategy is not designed to monitor NPS pollution trends throughout the state. Other monitoring activities under the Statewide Monitoring Strategy (e.g., ambient monitoring program; TMDL Program; etc.) are used to gauge general statewide NPS pollution impacts and trends. Instead, the NPS Program monitoring strategy is designed to document the specific needs and/or success of watershed-based projects. The following sections provide a general description of the different components of the NPS Program Monitoring Strategy as they relate to the assessment or evaluation of NPS pollution management projects.

## **B. Monitoring Objectives**

Monitoring activities supported through the NPS Program can be placed in one of two general categories: NPS Pollution Assessment or NPS Project Evaluation. Data collected through NPS pollution assessment activities provide the foundation to: 1) define watershed management needs; 2) set beneficial use improvement goals; and 3) quantify pollutant reduction goals for the waterbody. This same assessment data is also used to update the Integrated Reports and/or develop TMDLs for 303(d) listed waterbodies within the assessed watershed.

The baseline conditions documented through assessment monitoring are the “reference points” used when evaluating progress during the implementation of watershed management plans. This same assessment data and all subsequent data (e.g., water chemistry, biological, landuse, etc.) are used to track NPS pollutant trends; quantify reductions; and document beneficial use improvements resulting from land management improvements in the watershed. Models such as STEPL and the AFRRIW are also used to estimate interim pollutant load reductions associated with some applied BMP (e.g., reduced cropland tillage, manure management systems, grassed waterways, etc.).

Ultimately, the success of the NPS Program in improving water quality and beneficial use conditions will be defined by the accomplishments of the local projects. For this reason, the NPS Program will continue to direct most of its monitoring efforts toward watershed-based projects supported by the NPS Program.

### **C. Monitoring Design**

All NPS Program monitoring projects are influenced by a number of factors including: 1) watershed size; 2) waterbody type; 3) type of impaired beneficial uses; 4) NPS pollution sources and causes; 5) seasonal weather patterns; and 6) local land use practices. These same variables will also affect monitoring design considerations such as monitoring locations, sampling frequencies, targeted parameters, and sampling methods. Given the diversity between watersheds, it is not feasible to have a single monitoring design for all NPS Program projects. Instead, all factors that may influence the effectiveness of a project's monitoring efforts are evaluated and addressed during the development of the project-specific SAP. The SAP will describe the specific monitoring design and methods that will be used to ensure all data are representative of conditions within the waterbody and its watershed.

### **D. Core and Supplemental Water Quality Indicators**

The SAPs always differ somewhat between projects to account for variations in each watershed. However, in most cases, the SAPs do share the same basic objectives. These common objectives and the purposes of each are as follows:

- Water quality/quantity monitoring – Quantify parameters such as nitrogen, phosphorus and total suspended solids to track loadings and trends. E. coli bacteria concentrations are also monitored to evaluate the status of recreational uses.
- Macroinvertebrate monitoring – Establish a baseline Index of Biological Integrity (IBI) score to evaluate relative trends, over time, in aquatic life use.
- Riparian Area Assessment – Evaluate the functionality and stability of the riparian corridor. Document the capability to maintain a balanced aquatic community with diverse habitat, stable banks, good water quality and robust riparian vegetation.
- Watershed land use modeling and inventory – Document current land management activities in the watershed to gauge the extent of additional resource management needs and identify priority areas for BMP implementation.
- Local Interest – Conduct surveys to evaluate public awareness of local NPS pollution management issues and determine the degree of landowner/producer interest in participating in a watershed restoration project.

The direct measurement of water quality trends and beneficial use improvements are very challenging due to variables such as annual weather patterns and delayed responses to applied BMP. This is particularly true for the first 5 years of a watershed project. During these start-up

years, alternative methods may also be used to estimate water quality and/or beneficial use improvements. Additional monitoring methods or tools that may be employed include: 1) STEPL or AnnAGNPS models; 2) Animal Feedlot Runoff Risk Index Worksheet; 3) tracking BMP type, location and amount; and 4) photo monitoring. The specific monitoring approach will vary between projects and be dependent on the goals and objectives of the project.

### **E. Quality Assurance**

The SAP, in conjunction with the WMP QAPP, will describe actions to be taken by each project to ensure data quality, integrity and accuracy. This will include information such as: 1) applicable quality assurance/quality control measures; 2) sampling frequencies and procedures; 3) STORET sites; 4) parameters; and 5) sample transportation and preservation procedures. Each SAP will address the EPA requirements not covered in the WMP QAPP and must be approved by the Department's Quality Assurance Coordinator.

### **F. Data Management**

All water quality data collected by the NPS Program is stored in the Department's Sample Information Database (SID). This same data is also transferred to the EPA WQX/STORET data warehouse. Biological data collected within the projects is stored in the Ecological Data Applications System (EDAS) database managed by the Department.

### **G. Data Analysis and Assessment**

The State's Chemistry and Microbiology labs are responsible for the analysis of the water quality samples collected by the NPS Program projects. Fish or macroinvertebrate samples are analyzed through contractual agreements with private firms and/or Valley City State University. Data interpretation is completed at the end of the projects and accomplished by Watershed Management Program staff. The specific methods used to interpret data will vary between projects and will be described in each SAP.

### **H. Reporting**

A minimum of two water quality reports will be developed during a typical watershed project. The first report will be developed at the conclusion of the assessment phase and the second report will be completed upon conclusion of the implementation phase. Interim data summaries may also be provided to assist project sponsors with decisions regarding project revisions.

Data collected during an assessment project will be summarized and described in a TMDL report or an NPS Pollution Assessment Report, if the waterbody was not included in the most recent 303(d) list. Either assessment phase report will include the data interpretations needed to describe: 1) current water quality conditions and trends; 2) document beneficial use impairments or threats; and 3) identify the sources and causes of pollutants impairing or threatening beneficial uses.

For the implementation phase of the watershed projects, an end-of-project report will be

developed to summarize all data collected during the project period. These final water quality reports provide a comparative analysis of pre and post project conditions. The reports focus on the relationship between the water quality and beneficial use conditions and the documented land use changes in the watershed. The degree to which the project achieved its goals for beneficial use improvement and/or pollutant load reductions will also be described in the final reports. The final water quality reports are incorporated into the comprehensive final project reports entered in the Grants Reporting and Tracking System (GRTS).

### **I. Monitoring Program Evaluation**

The effectiveness of NPS Program monitoring efforts is measured by the number of monitoring projects developed and implemented in the state. Success of the NPS Program monitoring Program is defined by such measures as: 1) completion of all components of the SAPs; 2) collection and storage of quality data; 3) implementation of effective quality assurance/quality control measures; and 4) development of the applicable data summary reports. Feedback from project sponsors and staff will also provide a means to evaluate satisfaction with the delivery of NPS Program technical and financial assistance.

### **J. General Support and Infrastructure Planning**

The NPS Program Staffing and Support Workplans posted in the GRTS describe the roles and responsibilities of Department staff involved in the NPS Program. Under the staffing and support workplans, several Department staff are committed to assist local personnel involved with the watershed monitoring and assessment projects as well as to provide analytical support for samples collected within the NPS project areas. The WMP also maintains standard operating procedures and quality assurance/quality control protocols to ensure the integrity and accuracy of data collected by the NPS projects.

## **Appendix E**

### **Key Components of an Effective NPS Pollution Management Program**

## **KEY COMPONENTS OF AN EFFECTIVE NPS POLLUTION MANAGEMENT PLAN**

National NPS Program Guidance developed by the EPA identifies eight key components that must be included in an effective state NPS Pollution Management Program. Each of the components are addressed in the 2021-2025 ND NPS Pollution Management Program Plan. This section identifies where the key components have been addressed in the Management Plan. The eight components are presented in bold print, followed by applicable discussion.

**1. The state program contains explicit short and long term goals, objectives and strategies to restore and protect surface and ground water, as appropriate.**

The long term NPS Program vision and mission statement and the 5-year goals for the current Management Plan are found in Section II, Program Overview. Section III, Program Delivery, identifies specific objectives, actions and milestones for the Management Plan period.

**2. The state strengthens its working partnerships and linkages to appropriate state, interstate, tribal, regional, and local entities (including conservation districts), private sector groups, citizen groups, and federal agencies.**

A majority of NPS Program partners are involved in resource management on private agricultural lands. Specific partnerships and coordination are discussed throughout Sections II, Program Overview, and Section III, Program Delivery. In particular, the Assistance and Coordination subsections and associated actions under Section III discuss NPS Program coordination and its major partners. Appendix F lists the NPS Program partners and the type of assistance provided by each organization.

**3. The state uses a combination of statewide programs and on-the-ground projects to achieve water quality benefits; efforts are well integrated with other relevant state and federal programs.**

This element is addressed throughout the Management Plan, particularly in the subsections A-E in Section III, Program Delivery.

**4. The state program describes how resources will be allocated between (a) abating known water quality impairments from NPS pollution and (b) protecting threatened and high quality waters from significant threats caused by present and future nonpoint source activities.**

Each section of the Management Plan includes some discussion on the state's overall efforts to identify and address beneficial uses impaired or threatened due to NPS pollution. The subsections under Section III, Program Delivery, focus on specific NPS Program actions related to the delivery of financial and technical resources to projects addressing identified or potential NPS pollution impairments.

**5. The state program identifies waters and their watersheds impaired by NPS pollution as well as priority unimpaired waters for protection. The state establishes a process to assign priority and to progressively address identified watersheds by conducting more detailed watershed assessments, developing watershed-based plans and implementing the plans.**

Section III, particularly the subsections for Prioritization, Assessment and Project Assistance, address the process for setting priorities and directing assistance.

**6. The state implements all program components required by Section 319(b) of the Clean Water Act and establishes strategic approaches and adaptive management to achieve and maintain water quality standards as expeditiously as practicable. The state reviews and upgrades program components, as appropriate. The state program includes a mix of regulatory, non-regulatory, financial and technical assistance, as needed.**

Section III, Program Delivery, and Section IV, Program Evaluation, address this element.

**7. The state manages and implements its NPS management program efficiently and effectively, including necessary financial management.**

The Department's Division of Accounting uses an EPA-approved financial accounting system to track and document the expenditure of Section 319 funds committed for NPS pollution management in the state. The NPS Program also has separate databases for tracking local project expenditures and match as well as the costs, amounts and locations of applied BMPs. Contractual agreements are used to identify state and local financial commitments as they relate to the implementation of each NPS project. The financial expenditures of local sponsorships are reviewed on a monthly or quarterly basis.

**8. The state reviews and evaluates its NPS management program using environmental and functional measures of success and revises its NPS management plan at least every five years.**

Section IV, Program Evaluation, Section III, Program Delivery, and the NPS Program Monitoring Strategy in Appendix D describe efforts to collect data and evaluate Management Plan progress. If needed, informal reviews of data and project progress will occur periodically throughout the Management Plan period to identify updates needed in the Management Plan.

## **Appendix F**

### **Summary Table of Partner Organization Assistance to the NPS Program**

Agency or Organization	Organization Type Federal, NGO* or State/Local	Assistance Type **		NPS Program Interaction with Partner Organizations				
		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
Pheasants Forever, Inc.	NGO	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			
International Water Institute	NGO	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
ND State Soil Conservation Committee	State/Local	X	X	X	X	X		X
Upper Sheyenne Joint Water Resource Board	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
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 G**  
**Projects Supported with Section 319 Funds as of January 1, 2021**

## Development Phase - NPS Assessment

<u>Project Name</u>	<u>Allocation</u>	<u>Start</u>	<u>End</u>
Bowman-Haley Watershed Assessment	\$2,200	4/1/2020	11/30/2021
Eddy County Conservation & Soil Health Demonstrations	\$32,520	5/1/2020	12/31/2022
PTMApp Web Enhancements Project	\$146,810	5/1/2020	12/31/2022
Red River Basin PTMApp Development Project - Phase II	\$225,240	1/1/2018	11/30/2021
<b>Subtotal</b>	\$406,770		

## Education - Demonstration

<u>Project Name</u>	<u>Allocation</u>	<u>Start</u>	<u>End</u>
Menoken Farm Planting Green Project	\$165,000	8/1/2018	6/30/2021
<b>Subtotal</b>	\$165,000		

## Education - Public Outreach

<u>Project Name</u>	<u>Allocation</u>	<u>Start</u>	<u>End</u>
Envirothon Program - Phase V	\$165,000	8/1/2018	6/30/2021
Foster Co. TREES - Phase IV	\$250,000	9/1/2019	6/30/2022
NDSU Livestock Environmental Nutrient Management Education Support Program	\$390,000	9/1/2019	8/31/2022
NDSU Soil Conservation and Watershed Leadership Academy	\$48,630	9/1/2019	8/31/2021
Prairie Waters Education and Research Center - Phase V	\$390,000	6/1/2020	12/31/2022
Project WET - Phase V	\$175,000	9/1/2019	6/30/2021
Rancher Mentoring and Outreach Program Phase II	\$227,160	9/1/2019	8/31/2021
Red River Basin River Watch & River of Dreams Program	\$178,800	6/1/2020	12/31/2022
Statewide ECO ED Program - Phase IV	\$199,914	8/1/2018	6/30/2021
<b>Subtotal</b>	\$2,024,504		

## Local Project Support (TA or FA)

<u>Project Name</u>	<u>Allocation</u>	<u>Start</u>	<u>End</u>
Livestock Pollution Prevention Program - Phase VI	\$350,000	8/1/2018	12/31/2021
Livestock Pollution Prevention Program - Phase VIII	\$475,000	6/1/2020	12/31/2022
Livestock Pollution Prevention Program Phase VII	\$500,000	9/1/2019	12/31/2021
NPS BMP Team - Phase IV	\$295,654	6/1/2020	12/31/2023
Precision Ag Business Planning Support Project - Phase II	\$360,500	6/1/2020	12/31/2023
Stockmen's Association Environmental Services Program-Phase VI	\$618,750	6/1/2020	12/31/2022
<b>Subtotal</b>	\$2,599,904		

## Watershed Project

<b>Project Name</b>	<b>Allocation</b>	<b>Start</b>	<b>End</b>
Antelope Creek Watershed (Grant Co.)	\$327,020	7/1/2017	11/30/2021
Antelope Creek/Wild Rice Corridor Project - Phase IV	\$457,920	8/1/2018	12/31/2022
Danzig Dam & Hailstone Creek Watershed	\$289,458	8/1/2018	12/31/2022
English Coulee Watershed Phase II	\$173,770	9/1/2019	2/28/2022
Goodman Creek Watershed	\$274,590	9/1/2019	2/28/2023
Griggs County Sheyenne River Riparian Corridor Project	\$255,400	9/1/2019	2/29/2024
Gully Erosion Reparation Project	\$350,600	7/1/2017	11/30/2021
Little Missouri River Tributaries Watershed	\$350,538	7/1/2017	12/31/2022
Maple River Watershed - Phase II	\$299,844	8/1/2018	12/31/2022
Painted Woods Creek Watershed	\$310,000	9/1/2019	2/29/2024
Park River Watershed	\$199,361	8/1/2018	12/31/2022
Powers Lake Watershed - Phase IV	\$298,348	6/1/2020	12/31/2024
Spiritwood Lake Watershed - Phase II	\$259,177	6/1/2020	12/31/2024
Stutsman Co. Livestock Manure Management Program - Phase II	\$626,925	7/1/2017	11/30/2021
Upper Spring Creek Watershed (Dunn Co.)	\$250,419	9/1/2019	2/29/2024
<u>Wild Rice River Restoration and Riparian Project - Phase IV</u>	<u>\$210,000</u>	<u>8/1/2018</u>	<u>12/31/2022</u>
<b>Subtotal</b>	\$4,933,370		
<b>Grand Total</b>	\$10,129,548		