NORTH DAKOTA
NPS POLLUTION MANAGEMENT PROGRAM

2019 Annual Report

January 1, 2015 – December 31, 2019

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Introduction

The North Dakota Nonpoint Source Pollution Management Program (NPS Program) is a voluntary program focused on the reduction and prevention of NPS pollution impairing beneficial uses of the state's water resources. Locally sponsored projects are the primary means by which the NPS Program is implemented across the state. Through these local initiatives, the ND Department of Environmental Quality (Department) has supported numerous on-the-ground efforts as well as many educational events to move toward the goals of the 2015 – 2020 NPS Pollution Management Program Plan (Management Plan). The Management Plan vision and mission statement are as follows:

> North Dakota NPS Program Vision: "To abate all NPS pollution threats and impairments to the beneficial uses of the waters of the state."
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> North Dakota NPS Program Mission: "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."

Three primary goals have been established for the effective period of the Management Plan to carry out the NPS Program's mission and ensure continued progress toward the NPS Program vision. These goals are focused on watershed assessment; implementation of corrective measures; and public education. The effective period for the Management Plan is January 2015 through December 2020. The specific goals set for the Management Plan period are as follows:

> Goal 1: Coordinate with the Total Maximum Daily Load Program (TMDL Program) and local partners to assess 15 priority watersheds to document the beneficial use conditions as well as the sources and causes of NPS pollutants impairing beneficial uses of the waterbodies within the watersheds. Progress for this goal will be evaluated by tracking the number of waterbodies assessed as well as the number of TMDL or NPS Assessment Reports developed. *[NOTE: The number of 12-digit watersheds to be assessed may increase to 25 if the development of the Basin Water Quality Management Framework proceeds as planned. The first basin assessment activities are expected to run from 2016-2017 in the Red River Basin, followed by watershed assessment activities in a second basin in 2018-2019. These basin assessments may result in the completion of 10 additional watershed assessments.]*
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> Goal 2: In cooperation with local partners, develop and implement watershed restoration or protection plans for 15 priority sub-watersheds. Success of these projects will be defined by restoration of impaired uses; applied best management practices (BMPs) and progress toward pollutant load reductions described in the approved watershed-based plans. Priority watersheds will include those with impaired waterbodies listed in the 2014 or subsequent Integrated Reports or those identified in approved basin water quality management plans. To allow flexibility in staffing and planning, the watershed projects may address one or more impaired waterbodies and encompass several 12-digit hydrologic units (i.e., sub-watersheds). However, a single sub-watershed will be the preferred project

size. For the projects that must include multiple sub-watersheds, the sub-watersheds will be prioritized to establish a long-term implementation schedule based on those priorities. The implementation schedule of most of the watershed projects will also likely exceed 5 years and extend into the time periods for subsequent management plans. *[NOTE: As previously indicated, the number of watershed projects implemented may increase by approximately five if the Basin Water Quality Management Framework and Red River Basin assessment are completed, as scheduled. The timeline for the completion of the assessment work in the second basin will not allow sufficient time for the implementation of additional watershed projects in that basin]*

Goal 3: Through multiple forms of media at the state and local level, increase public awareness and understanding of water quality and beneficial use impairments associated with NPS pollution as well as the sources and causes of NPS pollution in the state. Feasible solutions to the state's NPS pollution issues will also be a major part of NPS Program outreach efforts. The target audience will be the general public, with particular emphasis placed on reaching individuals and organizations involved in the agricultural industry. As the ND Nutrient Reduction Strategy evolves during the Management Plan period, the educational goal of the NPS Program will also be adjusted to ensure coordination and the delivery of a consistent message on nutrient management. Attendance, exit surveys, follow-up contacts, and feedback will be the main measures used to gauge the success of local educational events. A statewide survey, the first and final year of the Management Plan, will be conducted to evaluate general public awareness.

While the goals of the Management Plan are to initiate 15 watershed restoration projects by 2020, ten or more years are generally required to complete a watershed restoration project and possibly even more years are needed to confidently evaluate the degree of improvements. Therefore, many of the watershed restoration projects initiated by 2020 will not be completed until after 2025. The final success for these projects will be reported under future management plans. However, annual progress and interim success will be reported during the current Management Plan period to track measures initiated to address the identified water quality impairments. In addition, with the continual start-up of new assessment efforts each year, future Integrated Reports will undoubtedly identify new waterbodies with beneficial uses impaired by NPS pollution. As such, financial and technical support to develop and implement these new watershed restoration projects will also continue well beyond the effective period of the current Management Plan.

Advancement toward the NPS Program vision will be measured by the degree of progress toward the NPS Program goals as well as by the accomplishments under the five Program Delivery objectives. Major outcomes to be tracked and measured during the Management Plan period to gauge overall progress of the NPS Program include: waterbodies assessed; beneficial uses restored; water quality trends; nutrient and sediment load reductions; public awareness; stakeholder groups formed; and basin management plans developed. The annual and final reports entered in the EPA Grants and Reporting System (GRTS) will be the primary means used to document project and program progress as well as to report to the EPA. The EPA performance measures (e.g., WQ-10) will also be used, when applicable, to report on specific projects where a

beneficial use has been fully restored or where trends indicate declining pollutant loads or concentrations.

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

EPA performance measures (e.g., WQ-10) are an additional reporting process used to highlight the successes and accomplishments of specific projects in the state. When available, the NPS Program coordinates with EPA to submit project-specific reports on waterbodies that have one or more beneficial uses restored by the NPS Program. These "success stories" are posted on EPA's website. In past years, the NPS Program also developed reports highlighting projects that have documented improving trends in water quality (i.e. SP-12 reports). These reports served as an interim measure to document the benefits of ongoing projects. These reports were also provided to EPA.

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

The NPS Program annual reports are intended to be cumulative reports that describe up-to-date progress under the 2015 - 2020 NPS Pollution Management Program Plan. As such, the time frame for this 2019 annual report is January 1, 2015 to December 31, 2019, which is consistent with the first four years of the Management Plan. Active Section 319 Grants during this period include the 2011 - 2019 Grants. The 2011, 2012 and 2013 Grants expired prior to this reporting period and the 2014 Grant was closed-out during this reporting period. The ending budgets for the projects supported under the 2014 Grant are provided in Appendix C. The final project budgets under the 2011, 2012 and 2013 Section 319 Grants were included in previous NPS Program annual reports.

The following sections summarize the cumulative accomplishments associated with the Management Plan objectives during the period of January 1, 2015 through December 31, 2019.

II. Waterbody Prioritization

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

The NPS Program prioritization process continues to be in a state of transition due to delays in the implementation of the Basin Water Quality Management Framework (Basin Framework). Consequently, given the NPS Program connection with the Basin Framework, the NPS Program prioritization process has not been fully updated. As development and implementation of the Basin Framework proceeds from 2021 forward, annual updates to the NPS Program prioritization process will also be accomplished, concurrently.

Implementation of the Basin Framework was initiated in the Red River Basin in 2017. Two meetings were conducted to introduce the public to the concepts of the Basin Framework as well as to gain input on water quality concerns and issues in the basin. Approximately 35 people attended each of the meetings. Information generated through the meetings was intended to provide a foundation for a second series of public meetings to move toward the development of basin water quality priorities and an action strategy for the delivery of Department programs in the basin. However, the public feedback, instead, indicated a need to better define the purpose of the Basin Framework and to more clearly communicate the state and local responsibilities related to the development and implementation of a basin management plan.

Given the public feedback on the Basin Framework and recent staff changes in the Department's Watershed Management Program (WMP), the development of the Basin Framework was postponed in 2019. This delay will allow time to revaluate the goal, structure, and delivery of the Basin Framework to determine how the initiative will compliment the ongoing WMP programs (e.g., Ambient Monitoring, TMDL, Lake Water Quality Assessment, NPS Program; etc.) as well as the local projects supported by the NPS Program. NPS Program involvement in the development of the Basin Framework will be described in the updated NPS Management Plan for the period of 2021-2026. Development of the Basin Framework is tentatively set to resume in 2021.

When initiated, it is envisioned the Basin Framework will take multiple years to cycle through all the major river basins in the state. As such, priority setting within the river basins will not be concurrent. During the interim, for those basins without established priorities, the NPS Program will continue to work with local entities to assess individual waterbodies and set priorities accordingly. This interim process is essentially the same process the NPS Program currently follows. As the implementation of the TMDL Strategy, Nutrient Reduction Strategy, and Basin Framework proceeds, basin-specific priorities will be adopted.

Currently, the Integrated Reports serve as the main information source for establishing state level NPS Program priorities. To pare down the 303(d) list in the Integrated Reports, the NPS Program coordinates with the TMDL Program to focus on TMDL priorities where NPS pollution is impairing a waterbody's beneficial uses. Of these waterbodies, those that are a high priority for TMDL development or have an approved TMDL are also considered the highest priority waterbodies for assessment or restoration under the NPS Program. From a protection standpoint, the assessed waterbodies with no beneficial use impairments will be also be recognized by the NPS Program as priority waters, if potential NPS pollutant sources are identified in the watershed. Locally, the TMDL and NPS Program priorities will also be used for prioritization purposes, but other information such as public survey results; applied BMP data; and NPS Pollution

Assessment Reports, will be used to focus priorities and set schedules for specific watershed assessment, restoration or protection projects.

A third implementation priority is if a common NPS pollutant source is contributing to the impairment of beneficial uses in multiple watersheds, the NPS pollutant source is identified as a high priority and targeted for abatement activities. Concentrated animal feeding operations and degraded riparian areas are some of the longstanding statewide priority sources being addressed through the NPS Program. Reduction of erosion and nutrient inputs on unproductive cropland acres, impacted by factors such as frequent wet conditions and/or saline soils, is another priority in many watersheds across the state. Two ongoing projects addressing a priority NPS pollutant source are the Stockmen's Association Environmental Services Program, which is focused on improving livestock manure management and the Precision Ag Business Planning project which is working to restore vegetation and reduce inputs on unproductive cropland.

Within the priority watersheds, further prioritization continues to be accomplished with the Annualized Agriculture Nonpoint Source Pollution model (AnnAGNPS) or the LiDAR-based Prioritize, Target and Measure Application (PTMApp). Both models identify specific areas and/or sub-watersheds within the priority watersheds that are potential sources of nitrogen, phosphorus and/or sediment. Maps generated by these models are used by the local project sponsors and staff to direct BMP planning and implementation efforts within the watershed projects.

The AnnAGNPS model is used throughout the state to map the target areas for all the priority watersheds receiving Section 319 support. Generally, the AnnAGNPS target areas range in number from a few to over one hundred per priority watershed. The AnnAGNPS priority maps are provided in the project implementation plans for all the approved watershed projects entered in GRTS.

Development of the PTMApp was preceded by the LiDAR-based Decision Support Tool (Support Tool), which was first initiated in the Wild Rice River Basin in 2014. Although it proved to be an effective prioritization tool, the Support Tool ultimately served as a stepping-stone toward the development of the web-based PTMApp. The Red and James River Basins were the first areas targeted for PTMApp development. The PTMApp for the James River Basin was completed in 2017 and PTMApp development is scheduled to be completed in 2020 for the ND tributaries to the Red River. The Red River tributary watersheds where PTMApp has been completed include the Wild Rice, Maple, Park, Turtle, Goose, Bois de Sioux, and Forest River watersheds. PTMApp is also scheduled to be completed for the Sheyenne River, Devils Lake and Pembina River watersheds in 2020. The NRCS has been the main source of financial support for PTMApp development in all the ND watersheds in the Red River Basin. The ND PTMApp web address is https://iwinst.org/mesmerize/watershed-research/

With PTMApp, local resource managers and anyone else can easily access a multitude of watershed-based Arc GIS data products in an interactive web-based environment. These data products enable local NPS project sponsors to more effectively determine water quality management needs by providing the mapping to; 1) identify major nutrient or sediment sources; 2) establish priority areas in specific fields or subwatersheds; and/or 3) identify specific types of

BMP to address pollutant sources. Nutrient and sediment loading at selected sites as well as estimated economics for various BMPs are additional PTMApp outputs. The PTMApp can be applied at the basin level down to the 12-digit hydrologic unit level. Field scale planning is also possible with PTMApp.

Although most of the progress to date has only involved start-up activities, the efforts have created the foundation for the continued development of a more comprehensive prioritization process. The waterbody prioritization tasks and accomplishments for the January 2015 - December 2019 reporting period are provided in Appendix A.

III. Resource Assessment

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

Projects designed to assess and document the extent of beneficial use impairments associated with NPS pollution continue to be a critical component of the NPS Program. Data collected through assessment efforts are used to define state and local watershed management priorities as well as to provide direction for ongoing and future educational initiatives. The watershed assessment projects can also provide local resource managers the necessary information to establish priorities for land management improvement and TMDL development. The data collected and priorities established through the assessment projects provide the foundation for comprehensive watershed management plans supported with NPS Program technical and financial assistance.

Assessment of beneficial use and water quality conditions continue to be accomplished through the Department's WMP monitoring programs as well as through local NPS Program assessment projects targeting small watersheds. At the state level, data (e.g., water quality, biological) collected by the WMP and local watershed projects are compiled and interpreted on a biennial basis to develop the Integrated Reports. These Integrated Reports are not only used to prioritize watersheds for restoration work, but they also aid in directing local NPS Program partners to waterbodies that need further assessment to define beneficial use conditions and restoration needs. The Recovery Potential Screening Tool (RPST) can also be used to further prioritize the "303(d) listed" waterbodies to better direct future assessment efforts. However, there will also be instances, where local interests and priorities direct NPS Program assessment activities toward "unlisted" waterbodies to determine beneficial use conditions as well as sources and causes of any use impairments.

Data collected through the local NPS Program assessments are used to develop TMDLs and/or NPS pollution assessment reports that: 1) document beneficial use impairments; 2) identify specific NPS pollutant causes/sources; and 3) establish goals for land use improvement and NPS pollution reduction. This same data is also used to help meet NPS Program assessment and prioritization objectives and 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.

Section 319 funding used to support assessment projects is provided through the NPS Program's "Development Fund." The Development Funds are unexpended Section 319 funds reallocated from other NPS projects or Section 319 funds included in the NPS Program Staffing and Support budget for assessment activities. Fourteen development/assessment projects have been supported with Section 319 Development Funds, to date, during the Management Plan period. The primary focus for these development projects ranged from water quality and beneficial use assessment to the development of the PTMApp for several watersheds in the state. All the projects supported with Development Phase Funds are listed under "Development Phase Projects" in the GRTS. The Development Phase projects supported during the period of January 2015 through December 2019 are listed in Table 1.

Table 1: Section 319 budgets and status for Development Phase Projects supported under the Management Plan

Project Name	Section 319 Funding	Status
Bouret Dam Rehabilitation and Erosion Control Study (Benson WRB)	$12,105	Complete
James River Basin Decision Support Tool Development Project	$303,404	Complete
Little Missouri Tributary Assessment (Bowman SCD Support)	$1,163	Complete
Little Missouri Tributary Riparian & Stream Stability Assessment	$22,995	Complete
Middle Sheyenne River Watershed Plan Development	$21,184	Complete
BSA Environmental Services (Harmful Algal Bloom Sample Analysis)	$6,240	Complete
Local Land Use Plan Development (Bowman SCD)	$5,000	Complete
Mill Dam Rehabilitation and Erosion Control Study (Valley City)	$14,584	Complete
Precision Ag Business Planning Pilot Program	$5,709	Complete
Red River Basin PTMApp Development - Phase I & II	$325,240	Active
Janke-James River Riparian Restoration Project	$20,705	Complete
Upper Sheyenne Riparian Erosion & Sedimentation Assessment Phase I&II	$41,108	Complete
Red River Basin Cold Climate Ag Nutrient BMP Workshop	$20,000	Complete
Red River Basin River of Dreams Program	$25,800	Active
TOTAL	$825,237	

Similar to the waterbody prioritization process, the NPS Program's assessment efforts are also in a state of transition. With the ongoing development of the Nutrient Reduction Strategy and pending updates to the NPS Management Plan, the planning and development of future NPS Program assessment activities will need to continue to evaluate consistency with anticipated priorities under the statewide initiatives when developing local resource priorities. This transition period is expected to extend into 2021. As the priorities are established by the different strategies and programs, the NPS Program assessment priorities will also be reviewed to identify coordination opportunities for future waterbody assessment projects. The status and products of the NPS Program assessment tasks for the January 2015 - December 2019 reporting period are provided in Appendix A.

IV. Project Assistance

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

As a voluntary program, successful development and implementation of all NPS pollution management projects continues to 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 size, type, and target audience of the local NPS projects has varied 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.

Financial and technical assistance provided by the NPS Program has been used to support local staff, BMP implementation, water quality monitoring, data interpretation, and public meetings or other information/education (I/E) events. The Section 319 funding allocated to the local sponsors has been provided at a 60% Section 319 and 40% local matching ratio. The local match, provided in the form of cash and/or inkind services, is derived from several partners including, soil conservation districts, water resources boards, city councils, private foundations and trusts, landowners, nongovernmental organizations (NGO), agricultural groups and other state agencies. Appendix B lists the January 2015 - December 2019 Section 319 expenditures of the NPS projects supported under all the grants (i.e., 2011-2019 Grants) that have been active thus far during the Management Plan period. The 2011 - 2013 Grants closed out prior to this reporting period and the ending Section 319 budgets for projects supported under those grants were included in previous Annual Reports. The 2014 Grant ended during this reporting period and the final Section 319 budgets for projects supported under the 2014 Grant are listed in Appendix C.

The Natural Resources Conservation Service (NRCS) is an important source of federal financial and technical assistance within most of the local NPS projects. Technical assistance provided by the NRCS has generally included staff time to assist with land use assessments, public meetings, educational events and/or farm unit planning. Office space and some equipment have also been provided to most of the local NPS Program watershed projects. The USDA cost share programs continue to provide local NPS project sponsors an additional funding source to support the implementation of BMPs within their watershed project areas. More specifically, the Environmental Quality Incentive Program (EQIP) is the primary USDA program used by NPS projects focused on BMP implementation. The NRCS has also provided direct financial support to the Livestock Pollution Prevention Program (LP3) and ND Stockmen's Association Environmental Service Program. These USDA funds are being used by the LP3 and Stockmen's Programs to support producer costs associated with the design and installation of livestock manure management systems.

From a state perspective, two significant sources of non-federal financial assistance have been available for local NPS projects. These sources are the State Water Commission Trust Funds and the ND Outdoor Heritage Fund. These sources are not direct appropriations, but instead, they are state funds that are available through a competitive application process and subject to approval by the state agencies administering the funds. The budgets for these two 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 longtime source of state funding for eligible NPS Program projects. Eligible projects are limited to the NPS Program projects that provide BMP design assistance to producers and/or other NPS projects. For the 2019/2021 biennium, $200,000 in SWC Trust Funds were awarded to the Department to support

eligible projects. These funds were allocated to the ND Stockmen's Association Environmental Services Program and the NPS BMP Team. Both projects are involved in the delivery of financial and technical assistance to design and/or install livestock manure management systems. The BMP Team also provides engineering services to develop construction designs for riparian restoration sites and other structural BMP scheduled for installation within active NPS Program project areas. The SWC Trust Funds are being used to supplement the 40% match requirements associated with the Section 319 funds awarded to each project.

A second source of state funding for NPS projects includes the ND Outdoor Heritage Fund (OHF). If state tax revenues are available, the OHF can receive up to $10 million per biennium to support projects addressing natural resource management (including water quality) and outdoor recreation. Although this maximum allocation has never been met during any biennium, the OHF has been used to support a variety of projects, including some NPS projects. Since January 2015, ten NPS projects have received a total of $3,217,896 in OHF funding. However, in recent years, no OHF funding has been awarded to NPS projects, which is reflective of the statewide competition for the funding and, to some degree, changes in priorities for the funds. Looking forward, this recent pattern will undoubtedly change and the OHF funds could once again be a primary source for non-federal assistance. Specific NPS projects supported with OHF funds during the Management Plan period are listed in Table 2. Most of the OHF funds allocated to the projects are being used to support the installation of BMP.

Table 2. Outdoor Heritage Fund allocations during the period of January 2015 – December 2019

Project Name	OHF Allocation
Riparian Grazing Systems Project*	$253,500
LaMoure County Memorial Park Streambank Restoration Project*	$695,424
Sheyenne River Sedimentation Reduction Project (2nd OHF Allocation)	$200,000
Homme Dam Watershed Project	$65,000
Red River Riparian Project	$584,200
Powers Lake Watershed Project	$220,000
Morton, Oliver & Grant Co. Grazing Improvement Program **	$900,000
Bowman-Slope SCD Grazing Conservation Program **	$211,732
Cass Co. Windbreak & Wildlife Planting Initiative **	$50,000
Middle Sheyenne River Watershed **	$38,040
Total	**$3,217,896**

*Projects that only have 319 funds committed for staff. OHF funds will support all the BMP implementation.
** NPS project is located in the OHF project area.

Although state and federal funding allocations (e.g., Section 319 funds, USDA cost share, and OHF funds) are major components of NPS project budgets, cash and inkind match contributions from sponsoring entities and their partners are also a significant part of most local NPS project budgets. These local contributions typically represent most of the non-federal match commitments for the NPS projects. Cumulatively, the local NPS project sponsors and their partners have not only been responsible for the local financial support for the NPS projects, but they have also been the main source of non-federal financial support for the delivery of the NPS Program. Table 3 lists some of the sponsoring entities and financial partners that have provided technical and/or financial support for the development, implementation and/or management of NPS projects during the Management Plan period.

Table 3. Local NPS project sponsors and financial partners

Soil Conservation Districts	State Water Commission	Water Resource Districts
ND Department of Agriculture	Grazing Lands Coalition	RC&D Councils
ND State University	ND Stockmen's Association	Ducks Unlimited
Industrial Commission (OHF)	NDSU Extension Service	Landowners/Producers
Valley City State University	ND Game & Fish Department	Pheasants Forever, Inc.

Section 319 funding has always been the main source of financial support for the NPS Program. Estimated Section 319 expenditures by the NPS projects under the 2011– 2019 Grants since January 2015 are $14,909,370, which equates to approximately 84% of the Section 319 funds expended in the state. The balance of 319 funds (i.e., 16%) awarded to the state are used to support NPS Program staff. The 40% non-federal match to the 319 funds expended on NPS Program staffing is provided through the State General Fund and the balance of the non-federal match requirements are provided through the local projects in the form of cash or inkind services. The primary local match contributors were Soil Conservation Districts and participating producers and/or landowners installing BMP.

Technical and financial assistance provided by the NPS Program is generally initiated during the assessment/prioritization phase of local projects and continued throughout the implementation of the projects. In addition to the Section 319 financial support, the types of technical assistance provided to local projects includes: project oversight; water quality sample analysis; project review and comment; training for sample collection and project management; quality assurance project plan development; distribution of educational materials; and biological monitoring support. Department personnel (i.e., 10 FTE) involved in the delivery of NPS Program financial and technical assistance are as follows:

- Water Quality Division Director & Surface Water Program Manager - Program Supervision (0.50 FTE)
- NPS Program Coordinator - Program Administration (1 FTE)
- Environmental Scientist - Monitoring/Assessment Assistance (2 FTE)
- Watershed Planning & Information/Education Coordinator - I/E Assistance (1 FTE)
- Microbiology and Chemistry Lab Personnel - Sample Analysis (2 FTE)
- Ground Water Program Personnel - Aquifer Assessment Project (3 FTE)
- Secretarial Assistance (0.5 FTE)

The roles and responsibilities of the Department staff involved in the NPS Program are described in the NPS Program Staffing and Support Workplans associated with each Section 319 Grant. These workplans are attached in the GRTS under "NPS Program Staffing and Support Program" for each applicable grant.

Since January 2015, sixty-nine NPS pollution management projects were provided financial and technical assistance through the NPS Program. These projects include 33 watershed projects; 15 educational projects; and 16 assessment/development projects. Another five projects, defined as support projects, were awarded funding to address specific priority issues (e.g., manure management and riparian restoration) or deliver engineering services to the local watershed

restoration projects. Section 319 expenditures by projects supported under the 2011 - 2019 Grants are listed in Appendix B.

Local projects supported with Section 319 funds can be grouped in one of seven categories. Inclusion in a category is primarily based on the goal of the project. Table 4 lists the cumulative Section 319 expenditures during the reporting period for each of the NPS project categories.

Table 4. Section 319 Expenditures per Project Category: January 1, 2015 – December 31, 2019

Project Type *	Cumulative 319 Expenditures	Percent of Total 319 Expenditures
Development Phase - NPS Assessment	$ 796,022	5.4%
Development Phase – TMDL Development	$ 0	0.00%
Education - Demonstration	$ 284,339	1.9%
Education - Public Outreach	$ 3,391,104	22.8%
Support Projects (TA or FA)	$ 3,408,027	22.9%
NPS Assessment - Multi Year Grant Award	$ 0	0.00%
Watershed Projects	$7,029,878	47.0%
Total	**$ 14,909,370**	**100%**

*NPS Program staffing and support has not been included in the table to more accurately display the distribution of Section 319 funding between the local project categories.

As indicated in Table 4, about 47% of the local project expenditures during the reporting period were associated with watershed projects. In addition to the watershed-based projects, the NPS Program also funded several support projects that provided technical or financial assistance to the watershed projects to plan and implement certain types of BMP. When the Section 319 expenditures of the support projects are considered, the percent of Section 319 expenditures associated with watershed-based projects increases to approximately 70%. This watershed emphasis is consistent with the NPS Program goal to implement 15 watershed assessments and 20 watershed restoration projects during the 2015-2020 Management Plan period. A map showing the location of the active watershed projects in 2019 is provided in Appendix E.

Statewide and local public outreach efforts represent another very important component of the NPS Program. Although Section 319 expenditures on educational projects only represent about 25% of total NPS project expenditures, the projects focused on public education are critical for establishing the local awareness needed to ensure successful implementation of watershed-based projects and the NPS Program. Summaries of the educational programs and projects supported during the Management Plan period are provided in Section VI.

Within any NPS project, some type of external financial and/or technical assistance is needed to effectively implement the project. The specific type and amount of assistance needed by the NPS projects is variable and usually dependent on several factors. The most common factors needed to ensure a successful project are: 1) strong local leadership; 2) technical expertise to develop and

implement the NPS project plans; 3) landowner and agricultural producer participation; and 4) financial resources. NPS Program objectives and tasks for project assistance have continued to focus on providing all the "tools" local sponsors need to implement the an effective NPS project. Appendix A provides a summary of the accomplishments of NPS Program assistance during the reporting period.

V. Coordination

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

With limited resources at the state and local level, delivery of the NPS Program requires a significant amount of coordination with 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, NDASCD, and Extension Service) as well as through the North Dakota NPS Pollution Task Force (Task Force).

At the state level, the annual Task Force project proposal review process has provided the forum to connect local NPS project sponsors with potential partners on the Task Force. During the 2019 Task Force review process, the members were given the opportunity to become familiar with nine NPS projects seeking FY20 Section 319 funding. Conversely, the local project sponsors were also given the opportunity to present their projects to multiple state and federal organizations in one setting

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 have utilized the Environmental Quality Incentive Program (EQIP) to support BMP implementation. The National Water Quality Initiative (NWQI) and Resource Conservation Partnership Program (RCPP) are additional NRCS programs that some NPS projects have also used to support BMP implementation. While the EQIP cost share is available to address any resource concerns in a county, the NWQI and RCPP offer local NPS projects the opportunity to secure cost share funds that are awarded to specifically address the water quality priorities in the watershed. Given this difference, the NWQI and RCPP could become significant funding sources for future NPS Program watershed projects. When possible, the NRCS also provides training and technical support to local NPS project staff to assist them in developing conservation plans, evaluating range conditions, and planning or designing manure management systems. Most local watershed project coordinators are also co-located in a NRCS field office, which has strengthened coordination with the NRCS district conservationists when providing farm planning assistance to producers. By coordinating multiple funding sources and co-locating staff with NRCS, the NPS projects have been able to implement more BMPs, which has enhanced the overall effectiveness of their NPS pollution abatement efforts. Given the benefits of the NRCS/NPS project partnership, all NPS project sponsors are encouraged to utilize USDA programs to compliment Section 319 funds budgeted for BMP implementation.

The NDSU Extension Service (Extension Service) is another major partner of the NPS Program. At the state level, the Extension Service has maintained its 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 local NPS projects by providing planning assistance focused on manure management. During the past several years, the NDSU manure management specialist has assisted most of the active watershed projects through direct one-on-one assistance or through participation in various local educational events. Hundreds of producers are reached directly or indirectly each year through these efforts. The Extension Service is also sponsoring other statewide or regional projects in the state. Two of these projects include the Riparian Ecological Site Description Development project and the Eastern ND Soil Salinity Demonstration Network. These projects are focused on the development of riparian ecological site descriptions for NRCS and the dissemination of information on soil salinity and soil health management.
Most recently, the Extension Service initiated the Watershed Leadership Academy (Academy). The purpose of the Academy is to deliver a training program focused on strengthening local resource managers' leadership skills for watershed project planning and management. The primary target audience for these educational offerings include soil conservation district (SCD) staff and supervisors. Others invited to attend include NRCS staff, water resource board members and other local natural resource management organizations. During the first two years, the Academy had 184 attendees, of which 75% were SCD supervisors and staff. These individuals represented 44 of the 55 soil conservation districts in the state. The lessons-learned under this first phase, will be carried forward into Phase II. Under Phase II, the attendees will build on what was learned in Phase I training to strengthen their abilities to develop watershed and district level plans addressing their priority resource concerns. Evaluation and management of these plans will also be included in the Phase II training. The end-goal for the Academy training sessions is to strengthen the NPS Program's local partnerships to ensure greater success of local NPS pollution management projects.

Local project sponsors have remained the primary avenue for coordinating programs within the NPS project areas. Soil conservation districts 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) project plan 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 the NPS Program, SCDs will continue to be the lead sponsor for most of the local 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 NRCS and NPS Program. Other local or regional organizations that will also be important partners and sponsors include universities; state agencies, and water resource boards. The organizations currently working with the NPS Program and the general type of assistance each entity provides are listed in Appendix D. Coordination with these organizations and others is described in the Management Plan coordination objectives and tasks listed in Appendix A.

VI. Public Out-Reach and Education

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

Delivery of a balanced information and education (I&E) program throughout the state has always been a critical component of the NPS Program. While watershed projects are effective at abating known sources and causes of NPS pollution, the state and local I&E projects are the primary means for creating widespread awareness and understanding of NPS pollution issues to ensure support for future NPS pollution management efforts. The delivery method, NPS pollution topic, and target audience of the educational projects vary considerably, which is reflected in the diversity of approaches used for NPS pollution education in the state. However, despite the differences in delivery, the state and local I&E projects deliver a common message on NPS pollution impacts and form the delivery network for the NPS Program's statewide educational program.

To maintain a balanced educational program, the NPS Program coordinates with several partners to implement projects targeting all age groups. During the reporting period, 38% of the state's educational projects focused on teacher/youth education and the other 62% targeted the adult population. In most cases, the programs targeting adults are focused on reaching agricultural producers and individuals actively involved in farm and ranch resource planning. The agricultural emphasis is also not lost in the youth programs, where agricultural issues and the associated solutions to agricultural NPS pollution are addressed to some degree.

For youth education, the NPS Program has continued to support four long term education programs focused on K-12 students and teachers. These projects include the ECO ED Program, Project WET, Envirothon and The Regional Environmental Education Series (TREES). Each project is focused on a slightly different audience and delivers a message that compliments the messages of the other three projects. As a fifth component to the youth education efforts, the Prairie Waters Education and Research Center (Center) was established in 2010. The Center strengthened the ongoing youth education efforts by providing a location to conduct some of the educational programs as well as by providing training for facilitators or teachers involved in water education for students. The Center also manages the River Watch Program, which facilitates a long term, volunteer monitoring program for high school students.

A majority of the NPS Program's I&E projects continue to target the adult population, with emphasis placed on reaching individuals involved in the agricultural industry. Collectively, these I&E projects address a variety of agricultural topics, including; manure management, nutrient management, soil health, cover crops, and grazing rotations. Soil health management, in particular, has become the center piece for many of the educational projects supported by the NPS Program. The basic message being delivered is that soil health accomplished through a systems approach provides the foundation for sustainable cropland and grazing land management and NPS pollution reduction in the state.

A third component of the NPS Program's education network, that is often overlooked, is the educational events supported by the local watershed projects. Although the watershed projects are not specifically focused on education, they have implemented a variety of agriculture-based educational events (e.g., tours, newsletters, and BMP demonstrations). These local events have generally attracted between 10-25 individuals, although some of the larger events have recorded over 200 participants. Cumulatively, there are thousands of people who benefit from the local watershed education programs each year.

Thirteen I&E projects have been supported by the NPS Program during the reporting period. To maintain continuity, many of these I&E projects are ongoing projects that have received funding under multiple Section 319 grants. These I&E projects range in size from local county events to statewide programs. Target audiences included the general public, K-12 students, teachers, agricultural producers and local resources managers. The products of the educational efforts are just as diverse, with outputs such as newsletters, workshops, lyceums, BMP demonstrations, tours, mentoring services, fact sheets, radio ads, and videos. Table 5 provides a summary of the goals and target audiences of the I&E projects funded since January 2015. More detailed information on each project is also provided in the GRTS.

Table 5. Goals and target audiences of I&E projects supported from January 1, 2015 through December 31, 2019

Project Name & Contact Person	Primary Target Audience	Major Goals
Envirothon Program	Students in grades 9-12	Deliver a statewide program that strengthens problem solving skills by providing the opportunity to learn and use science-based information to identify and prescribe potential solutions that address NPS pollution and other natural resource concerns.
The Regional Environmental Education Series (TREES)	Students in grades K-12	Deliver a series of lyceum-style programs to schools to create greater appreciation for the state's water resources and increase participants understanding of the importance of wise use of natural resources.
NDSU Nutrient Management Educational Support Program	Resource Managers & Livestock Producers	Maintain a statewide program focused on the development and delivery of training programs, bulletins, workshops, demonstrations, and one-on-one planning assistance to promote better management of livestock manure.
ND Project WET (Water Education for Teachers)	K-12 Teachers & Students	Deliver a variety of educational offerings throughout the state to increase participants' knowledge and understanding of NPS pollution impacts to our water resources and potential solutions to those impacts.
Statewide ECO ED Program	Students in grades 6-8	Provide technical and financial assistance for local soil conservation districts to conduct one-day tours or two-day camps that provide hands-on outdoor instruction on water quality, soil/erosion; wetlands, prairies, and woodlands.
ND Water Wisdom Project	Resource Managers & Agricultural Producers	Deliver an educational program in south central and western ND that supports a variety of local educational offerings (e.g. workshops, tours, newsletters, demonstrations, etc.) focused on agricultural management practices that are effective at controlling NPS pollution. Two regional soil health workshops and one statewide grazing planning workshop will also be supported.

Project Name & Contact Person	Primary Target Audience	Major Goals
Discovery Farm Program	Resource Managers & Agricultural Producers	Establish a series of BMP demonstration sites on three working farms. These sites will be used to evaluate the water quality benefits of various BMP. Water quality and quantity will be collected to quantify the positive or negative impacts of the applied BMP. The current focus of the program is on BMP associated with livestock manure management and tile drain management.
Prairie Waters Education Center	Resource Managers & K -12 Teachers & Students	Develop and manage an educational center to provide training and educational offerings addressing topics such as water quality monitoring; stream morphology; macroinvertebrate sampling and watershed management. Training and instruction will include both classroom style presentations and in-field educational sessions.
Menoken Farm Soil Foodweb Project and Planting Green Project	Resource Managers & Agricultural Producers	Utilize the Menoken demonstration farm to showcase farming systems that improve soil health; increase water use efficiency and improve water quality. Management of the demonstration fields will focus on the importance of continuous live roots in the soil, crop diversity; livestock grazing, and cover crops for improving soil health. Tours, newsletter, and meeting presentations will be used to disseminate information gained through the Menoken farm project.
Eastern ND Soil Salinity Demonstration Network	Resource Managers & Agricultural Producers	Increase landowner and resource manager awareness and understanding of soil salinity and soil health issues in eastern ND. The Soil Health Specialist employed by the project will: 1) promote proper management and protection of saline areas; 2) train local SCD staff and others on management options for saline areas; 3) maintain demonstration sites; and 4) disseminate information regarding soil health and management of saline areas. Educational outlets will include demonstration sites, workshops, Extension bulletins, videos, tours, and conferences.
Ranchers Mentoring and Outreach Program	Farmers and Ranchers	Promote land management systems that will improve water quality and soil health. A network of mentors will be established to provide interested ranchers technical support and advice (from fellow ranchers) regarding management options that can be used to improve soil health and water quality as well as maintain the sustainability of their ranch or farm.
Partners for Improving Water Quality I&E Program	Resource Managers & Agricultural Producers	As a follow-up phase to the Water Quality Mentorship and Outreach Program, the project will continue to deliver a balanced educational program in southwestern ND that promotes concepts and practices that will improve cropland and grazing management and protect water quality.
ND Watershed Leadership Academy	Resource Managers	The Academy will deliver a series of four 2-day workshops focused in improving resource managers' skills in watershed project planning and management. The primary target audience includes soil conservation district staff and supervisors; NRCS staff and water resource board members.

*****Resource managers include individuals from NRCS, Extension Service, Soil Conservation Districts, 319 Projects, State Agencies, Private Organizations, Water Resource Districts, etc. involved in farm planning and resource management.

The NPS Program's objective and tasks for education and outreach have remained focused on establishing an educational foundation that will lead to an informed public that readily supports current and future NPS pollution management efforts. Appendix A provides a summary of the accomplishments of NPS Program education tasks during the reporting period.

VII. Program Evaluation

Evaluation Objective: Document the effectiveness and success of the NPS Program and its state and local partners in identifying and addressing the sources and causes of NPS pollution impairing or threatening beneficial uses of waters of the state.

Evaluation of NPS Program accomplishments are primarily 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. The GRTS; annual and final project reports; EPA water quality program measures (e.g., WQ10); and annual program reports will be the primary means used to disseminate information on NPS Program and local project progress and success.

For evaluation at the local project level, measurement of progress toward established goals is being accomplished through different monitoring approaches that are dependent on many factors. These factors include such variables as project size; project goals; planned BMPs; sources and causes of NPS pollution; target audience; land use; location; and type of beneficial use impairments. The monitoring methods employed are also variable and may include; photo-monitoring, exit surveys, pre/post testing, computer modeling, biological monitoring; water quality monitoring; BMP tracking; etc. The monitoring plan or Quality Assurance Project Plan (QAPP) for each project addresses these variables by describing, in detail, how the project will be monitored as well as how the project will be evaluated. Upon completion of a project, all data and information collected for evaluation purposes is interpreted and incorporated into the final project reports. For the watershed projects, the final reports include summaries of the applicable water quality and/or biological data to describe progress toward the project-specific water quality and beneficial use improvement goals.

Overall, the success of the NPS Program is directly linked to the success of the local projects supported by the program. Therefore, the evaluation of NPS Program success is based almost exclusively on the cumulative accomplishments of the locally sponsored projects. These accomplishments are described in the annual and final project reports submitted by the local sponsors. All the annual project reports due in 2019 have been entered in the GRTS. Specific projects that have posted final project reports in the GRTS in 2019 are listed in Table 6.

Table 6. Final project reports entered in the GRTS for projects completed in 2019

Final Report/Project Name	Grant Number	GRTS Project Number
NDSU Nutrient Management Education & Support Program - Phase II	C9008633-14	04
Livestock Pollution Prevention Program - Phase IV & V	C9008633-15 & C9008633-16	03 & 06
Antelope Creek Watershed & Wild Rice Riparian Corridor Project – Phase III	C9008633-15	04
Prairie Waters Education & Research Center - Phase II & III	C9008633-15 & C9008633-16	12 & 11
Spring Creek Watershed – Phase II	C9008633-15	01
Eastern ND Soil Salinity Demonstration Network	C9008633-15	07
Timber Coulee Watershed	C9008633-15	05
English Coulee Watershed – Phase I	C9008633-16	02
Stockmen's Association Environmental Services Program – Phase IV	C9008633-16	07
The Regional Environmental Education Series (TREES) – Phase III	C9008633-16	09
Wild Rice River Restoration & Riparian Project – Phase III	C9008633-16	03
Project WET (Water Education for Teachers)	C9008633-17	08
ND Watershed Leadership Academy	C9008633-17	09

From a program perspective, annual progress and progress by the end of the Management Plan period will be measured by evaluating the outcomes resulting from the completion of the tasks listed in Appendix A. The tasks described in Appendix A are a compilation of the actions the NPS Program must complete annually and over the course of the Management Plan period to achieve the goals and planned outcomes of the Management Plan. Evaluation of overall NPS Program progress will be based on the extent to which the NPS Program outcomes have been achieved on an annual basis as well as for the entire Management Plan period. Specific planned outcomes for the current Management Plan period and progress toward those outcomes are as follows:

1) Waterbodies assessed and associated TMDLs completed --- 15 assessed waterbodies with approved TMDLs or Alternative Plans (3/year) --- *All approved TMDLs are posted on the Department website* http://www.ndhealth.gov/WQ/SW/Z2_TMDL/TMDLs_Completed/B_Completed_TMDLs.htm. *To date, alternative plans have been developed for the following watersheds: Timber Coulee, English Coulee, Antelope Creek (Richland Co.), Maple River-Buffalo Creek, Danzig Dam/Hailstone Creek and Antelope Creek (Grant Co.). All these watersheds are included in the project area for an NPS project.*

2) Waterbodies with one or more restored beneficial uses – 5 waterbodies (1/year); 5 WQ-10 success stories --- *Since initiation of the Management Plan, data collected by local project staff has indicated the recreational uses of Thirty Mile Creek have been restored. A WQ10 success story has been approved for the restored reach on Thirty Mile Creek. Data collected from stream reaches located in Baldhill Creek watershed and Spring Creek watershed has also indicated recreational uses have been restored in those impaired reaches. The WQ-10 success stories for these reaches are scheduled to be submitted to EPA in August 2020. The NPS Program is still behind schedule for WQ-10 submittals. This shortcoming is a product of the continuing challenges in documenting sustained in-*

stream or in-lake beneficial use improvements associated with short term projects in agricultural watersheds. Given the dynamic nature of agriculture and limited resources, these challenges will likely persist for the duration of this Management Plan period. To address this challenge, the current Management Plan includes actions for 2015-2020 to improve land management prioritization; BMP targeting; and local coordination. The next Management Plan update will also include similar tasks or actions.

3) Waterbodies with improving trends in water quality and/or beneficial uses – 10 waterbodies (2/year); 10 SP-12 waterbodies --- *SP12 reports have been submitted to EPA for waterbodies demonstrating improving trends. These "SP12" waterbodies include Antelope Creek in Richland County; Shortfoot Creek in Sargent County and Thirty Mile Creek in Hettinger County. SP-12 reports are no longer required. However, as a replacement, all the final reports for watershed projects include a water quality report summarizing the data collected during the project. In many cases, these reports indicate improving trends at some of the monitoring sites. For information on trends in the watersheds of completed projects, refer to the final reports in the GRTS for the watershed projects listed in Table 6.*

4) Estimated annual nitrogen and phosphorus load reductions based on model results. Annual nitrogen and phosphorus load reductions will be approximately 100,000 and 50,000 pounds, respectively. --- *The estimated cumulative nitrogen and phosphorus load reductions reported in the GRTS for 2019 are 81,781 and 29,818 pounds respectively.*

5) Increased public awareness and understanding of NPS pollution issues in the state – 20% increase in survey respondents with a good understanding of NPS pollution issues. --- *The statewide survey planned for the onset of the Management Plan to assess the general public's awareness and understanding of NPS pollution issues in the state was postponed until the next NPS Program Management Plan period. The initial survey was to be used to collect the baseline data needed to assess "NPS pollution awareness" statewide. As such, without the baseline data, full evaluation of this objective will be delayed until a statewide survey can be completed in 2021 or 2022. During the interim, local watershed surveys and/or other measures will be conducted to evaluate gains in public support and NPS pollution awareness in the project areas.*

6) Basin Stakeholder Advisory Groups (BSAGs) established in 3 of the 5 major river basins in the state – 3 BSAGs (1 BSAG established in 2015; 2017 & 2019) --- *The Red River basin was the first basin targeted for the implementation of the Basin Framework. Two public meetings were conducted in 2017 to introduce attendees to the Basin Framework process and obtain input on natural resource concerns in the basin. However, due to staffing changes and resource limitations, development of the Basin Framework has been postponed until the next NPS Program Management Plan period. During the development of the next Management Plan, the scope, structure and delivery of the Basin Framework will be reevaluated to identify a more workable approach for implementation. Tentative plans are to re-initiate the Basin Framework process in the winter of 2021.*

7) Basin Management Plans developed, in cooperation with the BSAGs, for 2 of the 5 major river basins in the state (1 Plan in 2017 & 2019) --- *See status summary for #6 above. Due to delays in the development of the Basin Framework, the completion of management plans for the Red River basin or any other basins have been postponed until the implementation strategy for the Basin Framework is completed.*

Tracking the types of BMP applied and the affect the practices have on impaired use(s) and/or water quality continues to be the primary means for describing and documenting local watershed project progress and, ultimately, NPS Program progress. However, given the delayed water quality response to applied BMP in larger watersheds, the NPS Program depends on computer models during the short term to estimate pollutant load reductions resulting from the applied BMPs. Models such as the STEPL model and the animal feedlot runoff risk index worksheet (AFRRIW) compliment the in-stream or in-lake data by providing interim estimates on annual nitrogen, phosphorus and sediment load reductions associated with applied BMPs.

Although the information on applied BMP cannot replace the measurement of actual beneficial use improvements or pollutant load reductions, it does readily show how the sources and causes of NPS pollution impairments are being addressed in the state. Cumulative BMP expenditures also provide some insight on the extent to which the NPS Program is focused on BMP implementation. With approximately 70% of the NPS Program's cumulative expenditures associated with projects that are focused on the design and/or implementation of BMPs, it is apparent the NPS Program and its partners are maintaining a significant on-the-ground emphasis to address NPS pollution. The specific types and amounts of BMP supported during the Management Plan period are listed in Appendix F. Table 7 shows the cumulative Section 319 expenditures per BMP category to provide a perspective on the most common type of BMP implemented by the NPS Program.

Table 7. Cumulative Section 319 expenditures per BMP Category – January 1, 2015 thru December 31, 2019

BMP Category	Section 319 Expenditures	Percent Expenditures
Cropland Management	$271,995	5.2%
Grazing Management	$1,461,551	28.1%
Livestock Manure Management System (Full Systems)	$2,350,189	45.1%
Livestock Manure Management System (Partial Systems)	$292,688	5.6%
Erosion Control /Upland Tree Plantings/Vegetative Buffers	$53,326	1.0%
Miscellaneous Practices	$697,513	13.4%
Riparian Area Management	$84,473	1.6%
TOTAL	**$5,211,735**	

Overall, the goals and objectives of the Management Plan are basically on track, except for ongoing shortfalls with the "Success Story" reporting goal. This does not indicate a lack of effort by the local projects. Instead it is more related to factors such as limited producer participation; delayed responses to applied BMP; cropping changes; frequent management changes on rented

land; and variability in weather patterns. The availability of consistent and adequate local resources for post-project monitoring over an extended period has also been a limiting factor for long term data collection. These issues and others will always complicate the measurement of beneficial use improvements in moderately sized watersheds (i.e., 25,000 – 150,000 acres) over the short-term (i.e., < 10 years).

Under the current Management Plan, two significant actions have been initiated to improve NPS Program delivery and improve documentation of beneficial use restoration or improvement. As a first step toward improving the delivery process, the NPS Program initiated development of the Basin Framework to more effectively deliver financial and technical assistance at the basin scale. Unfortunately, this action was postponed after the first series of public meetings to allow more time to reexamine the scope, structure and delivery process for the Basin Framework. Although the basic structure of the Basin Framework had been established, public feedback indicated further development was needed on the scope and delivery process. These public concerns will be revisited and addressed, as needed, when developing the next NPS Program Management Plan. The next Management Plan will be completed in the fall of 2020 and have an effective period of 2021 – 2026. Once established, the Basin Framework will provide the pathway for delivery of financial and technical assistance in the State's major river basins. This assistance will be available to; 1) implement long-term basin-wide assessment programs; 2) develop basin management plans; 3) implement watershed restoration projects; and 4) conduct public educational events focused on local water quality and NPS pollution issues.

To increase the effectiveness of future watershed projects, the NPS Program has also been coordinating with the International Water Institute (IWI) and NRCS to develop the PTMApp for the James and Red River Basins. The James River PTMApp is complete and PTMApp development is nearly complete for the ND watersheds in the Red River Basin. The remaining Red River watersheds to be completed include the Sheyenne River, Devils Lake and Pembina River. PTMApp should be completed for these watersheds in 2020. This new planning and prioritization tool will strengthen the watershed planning process by providing the mapping needed to more accurately identify areas for BMP implementation. Given the resolution of the PTMApp ArcGIS data products, local sponsors will be able to, not only, identify priority areas for BMP implementation, but they will also be able to evaluate cost benefits to determine the most efficient and economical BMP per priority site.

An initial training session was conducted in 2019 to familiarize potential user with the basic functions and outputs of PTMApp. The main attendees at this training included the NPS Program watershed coordinators and NRCS staff located in the Red and James River basins. A second training session is also scheduled for early 2020 for these same individuals. The second level of training is intended to improve attendees' ability to develop comprehensive watershed restoration plans. This round of training will be more hands-on and focused on the utilization of the PTMApp to develop watershed-based plans; identify nutrient and sediment priority areas; evaluate cost benefits and conduct field scale planning. As a result of this training, it is anticipated the first watershed plans developed with PTMApp should be completed in 2020.

Appendix A
Status of the 2015-2020 Management Plan Objectives & Tasks
January 1, 2015 – December 31, 2019

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

Task 1: Based on the most current Integrated Report, identify NPS Program priority waterbodies in each of the five major river basins in the state.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
NPS Program priority waterbodies identified for assessment, restoration or protection	1	1	Behind Schedule – The NPS Program continues to coordinate with the TMDL Program to identify statewide TMDL priorities. These priorities are organized according to river basin and will be further prioritized with the Recovery Potential Screening Tool (RPST), if needed. Due to delays in the implementation of the Basin Framework, prioritization at the basin scale will not be initiated until 2021/2022. During the interim, TMDLs, watershed assessment data and local input will be used to prioritize the watersheds in the state.

Task 2: Coordinate with the other WMP programs (i.e., TMDL, assessment and monitoring) to develop and apply the ND Recovery Potential Screening Tool (RPST) to establish state and basin level priorities.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Functioning ND Recovery Potential Screening Tool (RPST)	1	1	Completed: The RPST has been developed for ND to aid in setting priorities at the 8 and 12-digit HU level. A training session was held in December 2015 to train resource managers and gain feedback on the tool.
State level NPS Program priorities established in 2016 at the 8-digit HU scale for watershed assessment, restoration and protection	1	1	Behind Schedule: The ND RPST will be applied in concert with the development and implementation of the Basin Framework. However, implementation of the Basin Framework has been delayed due to staff changes and other priorities in the WMP. As such, application of the RPST will be reevaluated in 2021/2022 when the Basin Framework is expected to be implemented.
Apply the RPST within the five major river basins to establish five priority lists at the 12-digit HU scale for the assessment, restoration and protection	5	0	Behind Schedule: See previous status comment.

Task 3: Utilize the AnnAGNPS model and, where available, the LiDAR-based Decision Support Tool to assist local partners with the identification and ranking of priority sub-watersheds and locations within priority watersheds.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
20 AnnAGNPS maps for approved watershed projects & 2 Decision Support Tool priority maps in the James and Wild Rice River Basins in 2016	22 maps	30 maps	On Schedule: AnnAGNPS priority maps have been developed for all the watershed projects listed in Appendix B. ---The Decision Support Tool was completed for the Wild Rice Basin. However, the Support Tool was replaced by PTMApp. PTMApp was developed for the James River Basin and most of the ND watersheds in the Red River Basin, including the Wild Rice River watershed.
New Decision Support Tool developed for part of the Sheyenne River basin	1	1	Revised: PTMApp (i.e., replacement for the Decision Support Tool) is being developed, in cooperation with the NRCS and IWI for the Red River basin, including the Sheyenne River watershed. The Sheyenne River PTMApp should be completed in 2020.

Task 4: Using the state and basin level waterbody priority lists as a starting point, coordinate with the applicable soil conservation districts and basin management committees (as they are formed) to further define local priorities and set implementation schedules for waterbody assessment, restoration and/or protection projects.			
Outputs	**Total Planned Quantity**	**2015-19 Quantity**	**Status/Actual Outputs to Date**
Local waterbody assessment and restoration priorities established for 5 soil conservation districts and 3 river basins	8	6	On Schedule: Morton and South McLean SCD's have previously established priorities for assessing watersheds in their counties. Cass, Stutsman, Wild Rice and Three Rivers SCDs are planning to use the PTMApp in 2020/2021 to identify implementation priorities for watersheds in their districts. The first PTMApp based watershed plans should be implemented in 2021.
Task 5: Determine NPS project funding priorities through the annual NPS Pollution Task Force project review process			
Outputs	**Total Planned Quantity**	**2015-19 Quantity**	**Status/Actual Outputs to Date**
Task Force comments and recommendations on draft project proposals and relative priority rankings.	7-10 Projects annually	7-10 Projects annually	On Schedule: Task Force comments were received for 9 projects requesting FY20 Section 319 funding.
Final project implementation plans for 7-10 projects approved for Section 319 financial support.	7-10 Projects annually	7-10 Projects annually	On Schedule: 11 projects were approved for FY19 funding in September 2019.

<u>Assessment Objective:</u> Document beneficial use and water quality conditions of local priority waterbodies and identify the sources and causes of beneficial use impairments.

Task 1: Coordinate with local partners to develop Quality Assurance Project Plans (QAPP) for 15 priority waterbodies scheduled for assessment.			
Outputs	**Total Planned Quantity**	**2015-19 Quantity**	**Status/Actual Outputs to Date**
Watershed-specific Quality Assurance Project Plans (QAPPs) for 15 targeted waterbodies	15	3-5 QAPP per years	On Schedule/Ongoing: QAPP's are developed for all assessment projects supported with Section 319 funds. In 2020, the WMP will establish a programmatic QAPP for sampling and analysis plans to be developed for assessment projects initiated in 2020 forward.
Task 2: Complete the QAPP objectives and tasks for each targeted waterbody to document beneficial use conditions; identify sources and causes of NPS pollutants impairing or threatening the beneficial; determine land management needs and gauge local support.			
15 priority maps developed with AnnAGNPS or a River Basin Decision Support Tool (where available) for the watersheds of each assessed waterbody	15 Maps	3-5 maps per year	On Schedule: AnnAGNPS or PTMApp maps have been developed for all the watershed assessment projects supported with Section 319 funds. [NOTE: PTMApp has replaced the Decision Support Tool for identifying priority areas in the James and Red River Basins.]
Water quality/quantity and macroinvertebrate data collected from approximately 45 sites. Approximately 900 samples will be collected	900 Samples	20 samples per site annually	Ongoing: All the water quality and macroinvertebrate samples scheduled for 2019 were collected.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Summary of planned and applied NRCS BMPs per 12-digit hydrologic unit (HU) in the watersheds	15 Summaries	NA	On Schedule: Access to the NRCS BMP data was approved in early 2015 and is available to evaluate the type and amount of USDA BMP applied in the watersheds. However, due to confidentiality restrictions, this information is only used internally and is not made available for general distribution.
Survey results describing watershed resident and landowner/operator awareness of NPS pollution impacts, sources, causes and solutions as well as their degree of interest in future restoration of protection initiatives in the watershed.	15 Surveys	3	Behind Schedule: Landowner surveys are completed for the Big Muddy and Painted Woods Creek watersheds. The survey for Swan Creek watershed is completed, but the SCD received very few return responses. Due to the limited responses with mailed surveys, alternative survey methods are being explored to obtain more landowner/producer feedback. Small group meetings, electronic surveys, and targeted direct contacts are some of the options being evaluated.
Characterizations and ratings (e.g., good, fair, poor, etc.) of riparian conditions in 15 assessed watersheds	15	2	Behind Schedule: Rapid Geomorphic Assessments were completed for Big Muddy Creek in Morton Co. and Antelope Creek in Grant Co. Limited WMP staff availability and limited local expertise has prevented the use of the RGA in all assessment watersheds.
NPS Pollution Assessment reports and TMDLs for the assessed watershed. 15 assessment reports or TMDLs	15	2-3 assessment reports/year	On Schedule: NPS pollution assessment reports have been completed for all the assessment projects supported with Section 319 funds. When applicable, TMDLs are also completed for the assessed waterbodies by WMP staff.

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

Task 1: Provide financial and technical assistance to local partners to develop and implement 15 watershed assessments.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
15 contractual agreements committing approximately 3% of the annual Section 319 budget to plan and implement watershed assessment projects.	15	2-3 contracts/year	On Schedule/Ongoing: Contractual agreements have been established for the studies and assessment projects listed in Appendix B.
Support for sample analysis by the Chemistry and Microbiology laboratories. The budget for each project also includes funding (i.e., 319 or 604(b) funding) to support analysis of macroinvertebrate or fish samples. Approximately 900 samples analyzed per year	900	100-150 samples/year	On Schedule/Ongoing: Analysis has been completed for all the water quality and macroinvertebrate samples collected in 2019.
Technical support for development of 12 NPS Assessment Reports and/or TMDLs	12	2-3 assessment reports/year	On Schedule: NPS assessment reports have been completed for all the assessment projects completed in 2019. Copies of these reports are included in the final PIPs developed for the project areas. TMDLs completed, to date, by the WMP are posted on the website: https://deq.nd.gov/WQ/3_Watershed_Mgmt/2_TMDLs/TMDLs.aspx.

Task 2: On an annual basis, assist with the development of 7-10 new NPS projects and manage contracts for 30-40 active/ongoing projects. These projects will include education, support and watershed projects.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Technical support to plan and develop approximately 35 project implementation plans for education, watershed, and/or support projects seeking Section 319 funding. Approximate break down of the project types is 20 watersheds; 11 education and 4 support projects.	35	9-12 projects/year	On Schedule/Ongoing: Technical support has been provided for all the projects listed in Appendices B and C.
Two NPS Pollution Task Force meetings, annually, to review draft and final project proposals requesting Section 319 funding.	10	2 meetings/year	On Schedule/Ongoing: Two Task Force meetings are conducted annually. Draft project proposals are reviewed in November/December and final project implementation plans were reviewed in February/March.
New contractual agreements (7-10/year) committing approximately 80% of the annual Section 319 awards to sponsors of approved NPS projects. Over 50% of the FFY Section 319 award will be allocated to watershed-based projects, with the balance committed for assessments; education programs; support projects and NPS Program staffing.	35	9-12 new agreements annually	On Schedule: Contractual agreements have been developed for all the projects listed in Appendices B and C.
Active contractual agreements with 30-40 ongoing projects maintained annually	30 annually	30-40 annually	On Schedule: Annually, approximately 40 NPS project contacts are managed to track progress and expenditures of projects awarded Section 319 funding.

Task 3: Coordinate with NPS Program partners and local project sponsors to obtain technical and/or financial assistance through other state and federal sources to support project planning and implementation efforts.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Financial support from the ND Outdoor Heritage Fund (OHF) to supplement or expand the BMP budgets for 6 watershed projects annually. The financial target is the acquisition of approximately $1,500,000 annually from the OHF	OHF Support for 30 projects	10	Behind Schedule: Ten NPS projects have been approved for over $3.2 million in OHF funding during the Management Plan period. Adjustments to the OHF eligibility policies have limited funding opportunities for several practices and this has affected the number of NPS projects being approved for OHF funding.
Secure $200,000 in State Water Commission Trust Funds each biennium to support engineering costs associated with the development of BMP construction designs for NPS projects	Engineering Support	$200,000 per Biennium	On Schedule: $200,000 in SWC Trust Funding was awarded to two NPS projects for the 2019/2021 biennium.
USDA cost share through the EQIP and other NRCS programs. Also includes cost share assistance available through the National Water Quality Initiative and Resource Conservation Partnership Program	USDA Cost Share	USDA Cost Share	Ongoing: All the watershed project coordinators work with producers to solicit USDA cost share assistance, when applicable. The annual and final project reports indicate the amount of USDA support per project.

Task 4: Evaluate the feasibility and benefits of alternative methods for supporting BMP implementation and planning in the watershed project areas and, when appropriate, develop applicable policies and agreements and incorporate the new policies into the NPS Program BMP Cost Share Guidelines and/or applicable sections in the Management Plan.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Draft guidelines for an outcome-based cost share program. Initial draft guidelines will be focused on setting preliminary criteria for nutrient management	Draft Guidelines	NA	Postponed until the next Management Plan update
A pilot project, initiated in cooperation with a watershed project sponsor and other partners (e.g., Extension Service, NRCS, Commodity Groups, etc.) to evaluate the feasibility, acceptance and effectiveness of an output-based cost share program	1 pilot project	NA	Postponed until the next Management Plan update
Annual updates to the ND NPS Program Cost Share Guidelines for NPS Pollution Control Best Management Practices to revise cost share policies and incorporate new or modified BMPs, as needed	5 Updates	NA	On Schedule/Ongoing: The Guidelines were updated in July 2019.
Conservation Systems Manual developed in cooperation with the agricultural workgroup for the ND Nutrient Reduction Strategy, NRCS, Extension Service and the SWQMP.	1	NA	Postponed: The development of the manual has been postponed and will be reevaluated when the NPS Management Plan is updated and the Nutrient Reduction Strategy is finalized in 2020.
NRCS input on the feasibility of incorporating 319 cost share funds committed to priority watersheds into the locally lead EQIP funding pool. The 319 funds would be planned and contracted by the NRCS District Conservationist using the NRCS planning system. If feasible, policies and procedures would be developed, in cooperation with NRCS	NA	NA	Discontinued: Incorporation of 319 funds into the NRCS process will not be feasible during the time frame for this Management Plan. As such, this task has been discontinued.
Draft policies for a riparian management program to provide cost share for the establishment and maintenance of riparian management systems in watershed project areas. These agreements would be 5-10 years in length and limit uses to specific practices or management systems that prevent overuse and degradation of the riparian corridor, but do not prohibit all uses during the agreement period	Draft Riparian Management Cost Share Policy	NA	Complete: The current BMP Cost Share Guidelines already include policies on supporting easements or long-term agreements that reestablish permanent vegetation in riparian areas. These policies are currently adequate to meet requests from the project areas. However, revisions are always an option in the future if feedback indicates the need to include additional criteria that would allow various levels of use/management under a reduced payment schedule.
NRCS feedback on the feasibility of establishing and supporting NRCS liaison positions to serve as the coordinator within watersheds supported with Section 319 funding	Agreement for 319/NRCS Liaison Positions	NA	Discontinued: Given current staffing limitations at the state and federal level, this task has been cancelled for this Management Plan period.

<u>Coordination Objective:</u> 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 identified NPS pollution impacts.

Task 1: Assist resource management entities (e.g., SCDs, WRB, Universities) with the establishment of sponsorships and associated advisory committees that will be responsible for the prioritization, development and implementation of NPS pollution management projects

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Lead sponsors and advisory committees for new NPS projects established each year	NA	NA	Ongoing: Local project sponsors have been established for all projects funded with 319 funds. Most of the sponsors are soil conservation districts. When applicable, the lead sponsors have also established advisory committees.
Membership on advisory committees for active NPS projects	NA	NA	Ongoing: NPS Program staff has participated in the local project advisory committees, as needed.

Task 2: Coordinate with WMP staff and local partners to establish basin stakeholder advisory groups and technical advisory groups as the Basin Framework is implemented within each river basin.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Basin stakeholder advisory groups (BSAG) established for each of the five major river basins.	3	NA	Postponed: Due to delays in the implementation of the Basin Framework, the establishment of the BSAGs has not been initiated. As such, NPS Program involvement in the Basin Framework implementation and establishment of the BSAG has been postponed and will be addressed under the next Management Plan update.
Technical advisory groups (TAGs) formed by the basin stakeholder advisory groups for each major river basin. Three TAGs established 2015-2020.	3	NA	Postponed: See previous comment.

Task 3: Maintain partnerships and communication with the NGOs, as well as local, state, and federal agencies to increase awareness of coordination opportunities for addressing water quality concerns related to NPS pollution.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Two Task Force meetings annually to obtain input and recommendations on local NPS projects seeking Section 319 funding	10	2 meetings/year	Ongoing: Two Task Force meetings are held each year.
Participation in meetings (e.g., NRCS Technical Committee, Extension Service Advisory Committee, NDASCD annual meetings, etc.) focused on the delivery of state and federal natural resource management programs that directly or indirectly address NPS pollution impairments to the state's water res	NA	NA	Ongoing: WMP staff participate in multiple meetings with NRCS, NDASCD, Extension Service, Grazing Coalition, Joint Water Resource Boards, USGS, ND Game & Fish Department, Industrial Commission, etc. to provide input on NPS pollution management in the state.
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.	5 Meetings	Several informal, small group meetings/year	Ongoing: NPS Program staff have several informal meetings, annually with NRCS staff to discuss NWQI watersheds, data sharing, PTMApp training, coordinator training, etc.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Periodic meetings with NPS Program partners (e.g., Extension Service, ND Association of Soil Conservation Districts, Commodity Groups, EPA, wildlife organizations) to keep them updated on the NPS Program. Multiple meetings annually throughout the Management Plan	NA	NA	Ongoing: Numerous meetings with NPS Program partners have been held throughout the year.
Participate in annual SCD Area meetings (5 meetings/year) to keep the SCD's in the state informed on the progress and future plans of the NPS and TMDL Programs, Basin Framework, Nutrient Reduction Strategy, other SWQMP Programs	25	5 SCD Area meetings/year	Ongoing: NPS Program staff participate in all the annual SCD Area meetings.

<u>Information and Education Objective</u>: 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.

Task 1: Maintain delivery of a balanced statewide I&E Program that addresses priority NPS pollution issues and targets all age groups.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Network of 8-10 statewide or regional educational programs targeting K-12 students, teachers, resource management professional, agricultural producers, landowners, and the general public. Approximately one third of the projects will be focused on youth education and the balance will be designed to train-the-trainer, promote new agricultural management systems; distribute educational materials, provide technical support; demonstrate new technologies or practices; and/or disseminate information on specific NPS pollution issues and solutions	I&E Network	10-15 I&E projects supported annually	Ongoing: Thirteen educational projects were supported in 2019. Refer to Section VI for details on specific projects.
Participate on project advisory committees to ensure I&E programs remain current and focused on NPS pollution education	NA	NA	Ongoing: NPS Program staff has participated on advisory committees for Project WET, Envirothon, Watershed Leadership Academy and Prairies Waters Education Center. Technical support has also been provided to the Watershed Leadership Academy, ECO ED Program and several watershed projects to conduct scheduled I/E events.
Educational components maintained in watershed-based projects to supplement the statewide educational network. Approximately, 35 educational events within the watershed projects each year	174 projects	10-20 events/year	On Schedule: All the active watershed projects have continued to conduct 1 or 2 educational events (e.g., workshops, tours, demonstrations) annually. This is in addition to scheduled newsletters, radio spots, news articles, etc. Annually, over 20 major events are conducted by the local watershed projects. The annual and final reports in the GRTS include listings of I&E events conducted by the watershed projects.
In-house library of various NPS pollution/water quality I&E materials developed by state, local, federal, and private organizations and make the information available to program partners and resource management	NA	NA	Ongoing: An in-house library is being maintained. The NPS Program web site also has NPS related links and materials available to all visitors. Twitter and Facebook accounts have also been established to share information with the project coordinators and Program partners.
NPS Program web site: https://deq.nd.gov/WQ/3_Watershed_Mgmt/1_NPS_Mgmt/NPS.aspx	NA	NA	Ongoing: The NPS Program web site has been maintained.

Task 2: Strengthen the abilities of resource managers and agricultural producers to recognize and address beneficial use impairments associated with NPS pollution.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Coordinate with NDSU Extension Service, NDASCD, SSCC, SCD Employees Association; NRCS and others to organize and conduct a series of 4 workshops that cover: 1) NPS pollution sources, causes and solutions; 2) watershed project development; 3) education and outreach methods; and 4) project implementation/management. The primary target audience will be local resource managers (e.g. SCD technicians & supervisors, County Agents, WRB supervisors) and NRCS field office staff	4 workshops	Four Level 1 Academy workshops and one Level 2 workshop in 2018-2019	Revised/Ongoing: To replace the resource-based workshops, the NPS Program has coordinated with NDSU Extension to develop the Watershed Leadership Academy. The Academy is a series of workshops that target SCD supervisors and staff to strengthen their watershed management and leadership skills.
Provide county newspapers and other local media with 2 articles per year that discuss local NPS pollution issues; management options for NPS pollution; and any other subjects related to NPS pollution and water quality	10 articles	8-10 articles/year	Ongoing: NPS pollution/water quality related articles were published in the Water magazine and sent out to all the county newspapers. 8-10 articles are distributed annually
Two training workshops addressing BMP planning and targeting to address water quality impairments. The target audience will include watershed project coordinators, SCD staff involved in watershed projects and NRCS field office staff within active or pending watershed project areas	2 Planning workshops	Annual Coordinators meetings and 3-4 resource management workshops annually	Revised/Ongoing: The annual NPS Program Watershed Coordinators Conferences will replace this task. Additional training opportunities are also provided through a multitude of workshops and conferences conducted by groups such as the ND Grazing Coalition, Menoken Farms, SCD, Extension Services, etc.
Annual watershed and NRCS DC conference	5	1 Coordinator meeting/year	Ongoing: All the NRCS DC's involved in an NPS Program watershed projects are invited to the annual NPS Program Watershed Coordinators Meeting.

Task 3: Document the degree of public awareness and understanding of NPS pollution issues in the state to identify steps needed to strengthen statewide educational offerings.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Statewide survey in 2016 to evaluate the general public's current understanding and awareness of NPS pollution issues and concerns in the state	1 survey	NA	Discontinued: Due to resource limitations the statewide survey will not be conducted. Instead, the NPS Program is conducting landowner surveys within the watershed assessments areas to gauge interest and understanding. Feedback through these surveys will be used to determine educational needs within the watersheds as well as statewide.
A five-year I&E strategy, based on the statewide survey results, that schedules actions that will eliminate "shortcomings" in the statewide educational network and increase public awareness and understanding of NPS pollution issues and solutions.	Five-year Statewide I&E Strategy	NA	Revised/Ongoing: Implementation of the objectives and tasks in Educational Section of the Management Plan will serve as the I&E Strategy.
Coordinated effort with local resource managers, universities and other state agencies to develop new statewide or local educational initiatives that will improve the balance of the statewide educational offerings	2 new initiatives	NA	Postponed: Due to staff limitations, this task has been postponed until the next Management Plan period.
Follow-up survey in 2020 to evaluate the benefits of past educational efforts and reassess the awareness and understanding of the general public regarding NPS pollution management and impacts	1 survey	NA	Discontinued: Since the initial survey was not completed the follow-up survey will also not be completed. The NPS Program will reevaluate the feasibility of a statewide survey in 2020.

<u>Evaluation Objective</u>: Document the effectiveness and success of the NPS Program and its state and local partners in identifying and addressing the sources and causes of NPS pollution impairing or threatening beneficial uses of waters of the state.

Task 1: Evaluate and document local NPS project progress toward approved PIP goals

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Approved annual and final project reports. Approximately 30 annual reports and 5 final project reports will be completed, annually	150 annual and 25 final reports	25-30 annual reports/year and 5-10 final reports/year	On Schedule: All the annual or final project reports for the projects listed in Appendices B and C have been completed and entered in the GRTS.
Final water quality reports for completed watershed projects that describe progress towards beneficial use and/or pollutant load reduction goals. 3-5 final water quality reports, annually, for inclusion in the final project reports	25	4-6 final water quality reports/year	On Schedule: The final reports submitted for watershed projects include a final water quality report. Table 6 in Section VII lists all the projects that submitted final reports, including the watershed projects that include a water quality report.
Estimated annual pollutant load reductions (based on modeled results) associated with applied BMP within the watershed and support project areas. Estimated annual load reductions for nitrogen and phosphorus are 100,000 pounds and 50,000 pounds, respectively	500,000 pounds of nitrogen & 250,000 pounds of phosphorus	Reductions of 100,000 lbs. of N & 50,000 lbs. of P annually	Behind Schedule: The estimated cumulative nitrogen and phosphorus load reductions reported in the GRTS for 2019 are 81,781 and 29,818 pounds, respectively.
Annual updates to the GRTS, including estimated pollutant load reductions and applied BMPs per applicable project	5 updates	Annual GRTS Updates	Ongoing: GRTS has been updated for 2019.

Task 2: Identify additional modeling options and/or improvements to generate better pollutant load reduction estimates.

Outputs	Total Planned Quantity	2015-19 Quantity	Status/Actual Outputs to Date
Additional BMP efficiency coefficients that will expand the STEPL modeling capabilities to more fully account for the pollutant load reductions for a broader range of applied BMPs	5-10 new BMP efficiency coefficients	NA	Complete: The developers of STEPL have incorporated additional BMP efficiency coefficients.
Pilot modeling process (i.e., AnnAGNPS, Decision Support Tool) to evaluate the feasibility to efficiently and accurately estimate pre- and-post BMP load reductions on small acreages to accommodate a performance-based cost share system	1 pilot project	NA	Complete: The continued development and use of the PTMApp should fulfill the intent of this task.
LiDAR-based Decision Support Tools for estimating load reductions in priority areas in the James and Wild Rice River Basins	2 Decision Support Tools	1 Basin Decision Support Tool & 2 PTMApp models	Revised/On Schedule: The PTMApp and Decision Support Tool for the Wild Rice Basin are complete. PTMApp is also complete for the James River Basin and most of the watersheds in the Red River Basin. The remaining watersheds include the Sheyenne River, Devils Lake and Pembina River watersheds. These basins should be completed by 12/2020. PTMApp has replaced the Decision Support Tool for establishing priorities within the NPS project areas in the James and Red River Bains.

Task 3: Track the sustainability of the benefits achieved through BMPs applied within the watershed projects and document delayed responses to BMPs applied near the end of the watershed projects.			
Outputs	**Total Planned Quantity**	**2015-19 Quantity**	**Status/Actual Outputs to Date**
Data collected through post- project monitoring of priority watershed projects completed through the Basin Framework. Given the status of the development of the Basin Monitoring Framework, the first post-project monitoring efforts will be initiated in the Red River Basin in 2018.	Post-project monitoring in 5 completed watersheds	NA	Postponed: With the delays in the implementation of the Basin Framework, this task has been postponed indefinitely and will be revisited during the next Management Plan update in 2020.
Task 4: Review and update the Management Plan in 2017 and 2020, as needed, to ensure the program will effectively address coordination with other pending WMP initiatives or strategies and account for any changes in NPS pollution impacts to the water quality and beneficial uses of the state's water resources.			
Outputs	**Total Planned Quantity**	**2015-19 Quantity**	**Status/Actual Outputs to Date**
Interim review and update to the Management Plan in 2017 to incorporate any revisions needed to better describe coordination with the pending Basin Framework, TMDL Vision, and Nutrient Reduction Strategy	1 interim update	1	Complete: No updates were needed for the Management Plan in 2017
Two NPS Task Force meetings in 2020 to obtain input on updates to the Management Plan for the next 5-year period	2 Task Force meetings	NA	Pending: The Management Plan will be updated and submitted to the Task Force for review and approval in 2020.
Questionnaire distributed to sponsors and partners in 2019 to solicit feedback regarding delivery of NPS Program financial assistance and technical support	1 Questionnaire	NA	Pending: The need for the sponsor/partner survey will be completed in 2020.
Updated Management Plan for the period of 2020 – 2025 based on recommendations and feedback	Updated Management Plan	NA	Pending: The Management Plan update for the next 5-year period will be completed in 2020.

Appendix B
Section 319 Expenditures by Projects Supported under the 2011-2019 Grants during the Management Plan period

January 1, 2015 – December 31, 2019

Development Phase - NPS Assessment	Cumulative 319 Expenditures
Bouret Dam Rehabilitation and Erosion Control Study - Phase I	$4,720.20
Bouret Dam Rehabilitation and Erosion Study - Phase II	$7,384.80
BSA Environmental Services (PSA for HABs Monitoring)	$6,240.00
Fargo Water Quality Stewardship: Addressing WQ at the Community Level	$21,827.26
James River Basin Decision Support Tool Development - Phase II	$56,420.00
James River Basin Decision Support Tool Development Project	$246,983.63
Janke-James River Riparian Restoration Project	$20,705.00
Little Missouri River Tributaries Assessment (Bowman SCD Support)	$1,162.74
Little Missouri Tributary Riparian & Stream Stability Assessment	$22,994.50
Local Land Use Plan Development Project	$5,000.00
Middle Sheyenne River Watershed Plan Development	$21,184.10
Mill Dam Rehabilitation and Erosion Control Study - Phase I	$4,934.71
Mill Dam Rehabilitation and Erosion Study - Phase II	$9,649.00
Precision Ag Business Planning Pilot Program	$5,708.55
Red River Basin Cold Climate Ag Nutrient Management BMP Workshop	$20,000.00
Red River Basin PTMApp Development - Phase I	$100,000.00
Red River Basin PTMApp Development Project - Phase II	$199,999.99
Upper Sheyenne Riparian Erision & Sedimentation Assessment – Phase II	$3,608.70
Upper Sheyenne Riparian Erosion & Sedimentation Assessment	$37,500.00
	$796,022.48

Education - Demonstration	Cumulative 319 Expenditures
Menoken Farm Planting Green Project	$70,497.00
NDSU Discovery Farm - Phase II	$77,942.00
NDSU Discovery Farms Program	$135,870.35
NDSU Vegetative Buffer Demonstration & Evaluation Project - Phase II	$29.57
	$284,338.92

	Cumulative 319

Education - Public Outreach	**Expenditures**
Envirothon Program - Phase III	$0
Envirothon Program - Phase V	$36,833.88
Envirothon Program Phase IV	$133,000.00
Foster Co. TREES - Phase II	$150,437.28
Foster Co. TREES - Phase III	$375,802.00
Menoken Farm Soil Foodweb Project	$1,266.37
Menoken Farm Soil Foodweb Project - Phase II	$151,489.82
NDSU Eastern ND Soil Salinity Demonstration Network	$112,474.00
NDSU Eastern ND Soil Salinity Program	$26,980.57
NDSU Livestock Environmental Nutrient Management Education Program	$19,677.78
NDSU Nutrient Management Education & Support Program - Phase II	$365,558.01
NDSU Nutrient Management Educational Support Program	$95,405.91
NDSU Soil Conservation & Watershed Leadership Academy	$3,004.77
NDSU Watershed Leadership Academy	$85,362.01
Partners for Improving Water Quality I&E Program	$92,672.90
Prairie Waters Education and Research Center	$29,935.21
Prairie Waters Education and Research Center - Phase II	$190,000.00
Prairie Waters Education and Research Center - Phase III	$260,044.01
Prairie Waters Education and Research Center - Phase IV	$49,707.75
Project WET - Phase II	$108,979.52
Project WET - Phase III	$175,000.00
Project WET - Phase IV	$194,000.00
Ranchers Mentoring and Outreach Program	$179,539.50
Ranchers Mentoring Project	$108,892.34
Statewide ECO ED Program - Phase III (NGAs 13.001 & 15.947)	$236,451.09
Statewide ECO ED Program - Phase IV	$72,576.49
Water Wisdom Project	$136,012.44
	$3,391,103.65

Local Project Support - TA or FA	**Cumulative 319 Expenditures**
Livestock Pollution Prevention Program	$68,738.76
Livestock Pollution Prevention Program - Phase III	$479,300.00

Local Project Support - TA or FA (continued)	**Cumulative 319 Expenditures**

Livestock Pollution Prevention Program - Phase IV	$358,262.00
Livestock Pollution Prevention Program - Phase V	$209,900.00
Livestock Pollution Prevention Program - Phase VI	$47,969.38
NDSU Riparian Ecological Site Description Development Project	$23,326.12
NDSU Riparian Ecological Site Description Development Project - Phase II	$73,750.92
NPS BMP Team - Phase II	$140,233.66
NPS BMP Team - Phase III (NGAs G15.599 & G15.1080)	$246,534.68
Precision Ag Business Planning Support Project	$99,836.77
Stockmen's Association Environmental Services Program - Phase III	$798,920.17
Stockmen's Association Environmental Services Program - Phase IV	$418,722.00
Stockmen's Association Environmental Services Program - Phase V	$442,532.89
	$3,408,027.35

Watershed Projects	**Cumulative 319 Expenditures**
Antelope Creek Watershed (Grant Co.)	$121,091.58
Antelope Creek Watershed/Wild Rice Corridor Project - Phase II	$89,084.46
Antelope Creek Watershed/Wild Rice Corridor Project - Phase III	$673,750.00
Antelope Creek/Wild Rice Riparian Corridor Project - Phase IV	$224,992.49
Baldhill Creek Watershed - Griggs Co.	$109,674.97
Bear Creek Watershed - Phase II	$48,054.05
Beaver Creek/Seven Mile Coulee Watershed - Phase II	$319,401.55
Cannonball River-Dogtooth Creek Watershed	$235,672.07
Cottonwood Creek Watershed - Phase II	$77,550.21
Coyote Creek Watershed & Little Missouri Tributaries Assessment	$55,659.78
Danzig Dam & Hailstone Creek Watershed	$21,524.74
English Coulee Watershed	$167,304.00
English Coulee Watershed – Phase II	$9,344.05
Griggs Co. Sheyenne River Riparian Corridor Project	$5,978.04
Goodman Creek Watershed	$5,312.29
Gully Erosion Reparation Project	$83,136.71
James River Headwaters Watershed - Phase II	$59,574.07

Watershed Projects (continued)	**Cumulative 319 Expenditures**
Kelly Creek Watershed	$79,435.55

Little Missouri River Tributaries Watershed	$192,006.18
Maple River Watershed - Phase II	$78,554.75
Maple River Watershed Phase II - Buffalo Creek	$223,954.64
Middle Sheyenne River Watershed	$174,043.84
Morton Co. Northeastern Watersheds	$409,513.13
Park River Watershed	$33,140.68
Powers Lake Watershed - Phase III	$163,453.41
Powers Lake Watershed Restoration Action Strategy - Phase II	$61,807.17
Red River Riparian Project - Phase V	$316,224.06
Red River Riparian Project - Phase VI	$0
Sheyenne Watershed Sedimentation Reduction Project	$270,062.10
Spiritwood Lake Watershed	$163,141.25
Spring Creek Watershed	$68,924.78
Spring Creek Watershed - Phase II	$353,360.71
Stutsman Co. Livestock Manure Management Program	$463,137.91
Stutsman Co. Livestock Manure Management Program - Phase II	$367,534.37
Timber Coulee Watershed	$189,665.47
Turtle Creek Watershed	$326,733.54
Upper Turtle River Watershed - North & South Branches	$76,085.01
Walsh Co. Homme Dam Watershed	$136,089.24
Wild Rice River Restoration & Riparian Project - Phase IV	$38,177.41
Wild Rice River Restoration and Riparian Project - Phase II	$208,104.73
Wild Rice River Restoration and Riparian Project - Phase III	$329,603.01
	$7,029,857.99
Total:	**$17,770,790.34**

Appendix C

Final Section 319 Budgets for Projects Supported under the 2014 Grant

Project Name	Project Type	Final 319 Budget
Wild Rice River Restoration & Riparian Project-Phase II	Watershed	$309,920
James River Decision Support Tool Development Project	Development	$14,728
Little Missouri Tributary Riparian & Stream Stability Assessment	Development	$6,739
Sheyenne Watershed Sedimentation Reduction Project	Watershed	$305,205
James River Decision Support Tool Development – Phase II	Development	$56,420
Statewide ECO ED Program – Phase III	Education	$34,054
Baldhill Creek Watershed – Griggs Co.	Watershed	$123,317
Cannonball River Dogtooth Creek Watershed	Watershed	$247,733
Livestock Pollution Prevention Program – Phase III	Support	$84,300
Maple River Watershed Phase II – Buffalo Creek	Watershed	$229,169
Morton County Northeastern Watersheds	Watershed	$220,000
Upper Sheyenne Riparian Erosion & Sedimentation Assessment	Development	$37,500
Walsh County Homme Dam Watershed	Watershed	$145,100
Antelope Creek Watershed & Wild Rice Corridor Project – Phase III	Watershed	$110,750
The Regional Environmental Education Series (TREES) – Phase III	Education	$25,000
English Coulee Watershed	Watershed	$27,046
Livestock Pollution Prevention Program – Phase IV	Support	$230,262
NDSU Nutrient Management Education Program - Phase II	Education	$282,500
Red River Riparian Project – Phase V	Watershed	$316,315
Turtle Creek Watershed	Watershed	$75,947
Little Missouri River Tributaries Watershed	Watershed	$45,000
Total		**$2,927,005**

Appendix D

Summary of Partner Organization Assistance to the NPS Program

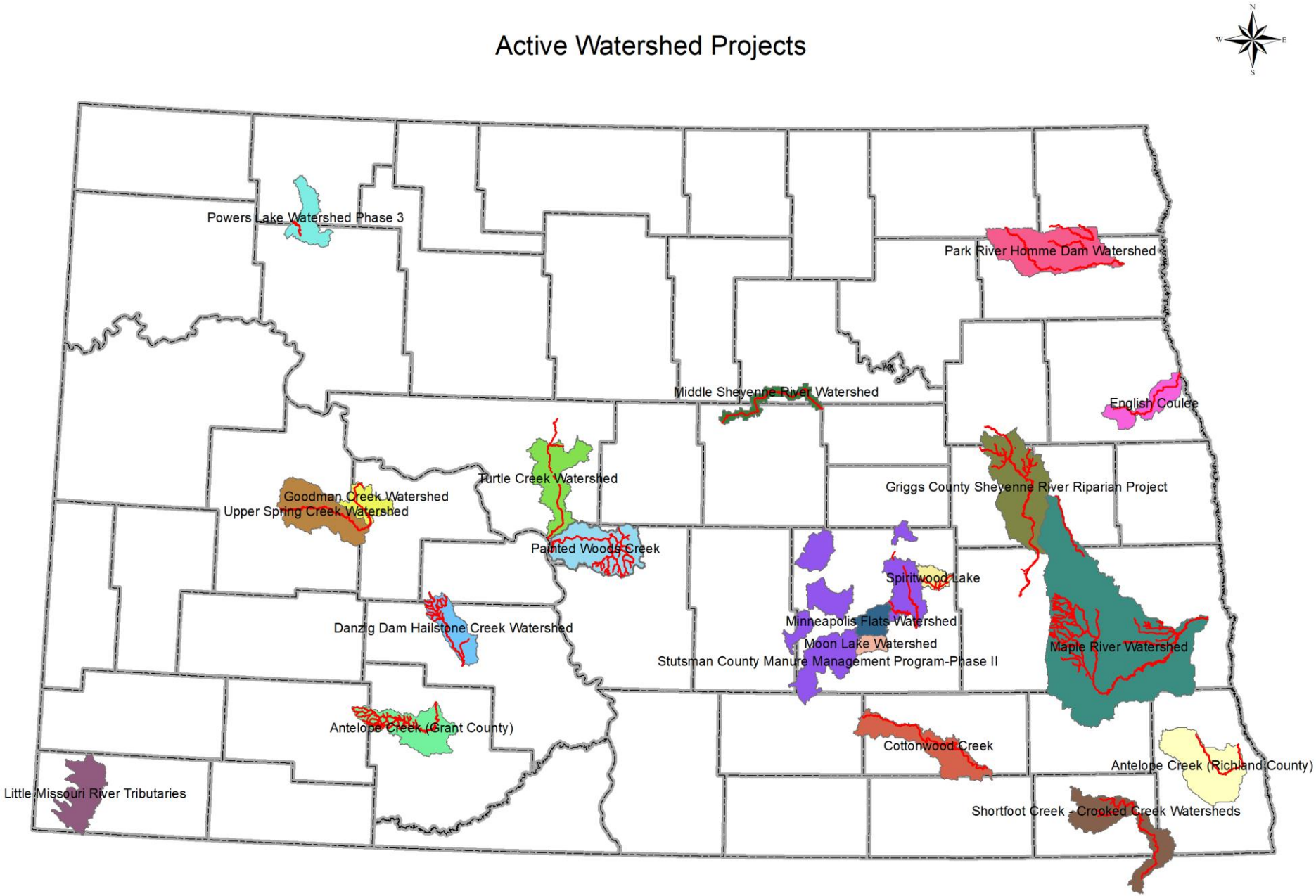
	Organization Type	Assistance Type **		NPS Program Interaction with Partner Organizations				
Agency or Organization	**Federal, NGO* or State/Local**	**TA**	**FA**	**Task Force Member**	**Attend Partner Meetings**	**NPS Project Sponsor**	**BMP Support**	**NPS Project Planning Assistance**
Natural Resource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

* NGO- Nongovernmental Organization

** TA – Technical Assistance; FA – Financial Assistance

Appendix E
Map of the Active Watershed Projects during the 2019 Reporting Period

Active Watershed Projects



Appendix F
Amounts and Costs of Best Management Practices Implemented during the Management Plan Period under the 2011-2019 Grants
January 1, 2015 – December 31, 2019

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Cropland Management					
Cover Crop	25,863.71	Acres	$230,257.44	$153,504.89	$383,762.32
Nutrient Management	3,209.58	Acres	$39,343.00	$26,228.67	$65,571.66
Pasture/Hayland Planting	80.00	Acres	$2,394.72	$1,596.48	$3,991.20
		Total	**$271,995.16**	**$181,330.04**	**$453,325.18**
Erosion Control					
Critical Area Planting	53.60	Acres	$45,706.66	$30,471.11	$76,177.77
Miscellaneous (Erosion Control)	2.00	Misc	$0.00	$0.00	$0.00
		Total	**$45,706.66**	**$30,471.11**	**$76,177.77**
Grazing Management					
Alternative Power Source (Livestock Watering Only)	13.00	Number	$31,714.26	$21,142.83	$52,857.09
Cultural Resource Review	1.00	Number	$900.00	$600.00	$1,500.00
Electric Fence Energizer	4.00	Number	$1,390.20	$926.80	$2,317.00
Fencing	247,815.00	Linear Feet	$131,639.31	$87,759.54	$219,398.85
Fencing (Barbed)	501,800.70	Linear Feet	$258,035.27	$172,023.51	$430,058.78
Fencing (Multiple Wire Electric)	208,586.90	Linear Feet	$79,029.49	$52,686.32	$131,715.82
Fencing (Single Wire Electric)	36,947.00	Linear Feet	$12,690.00	$8,460.00	$21,150.00
Fencing (Woven Wire)	3,913.00	Linear Feet	$1,761.21	$1,174.14	$2,935.35
Miscellaneous (Grazing Management)	15.00	Misc	$15,072.35	$10,048.23	$25,120.58
Pasture/Hayland Planting	5,361.61	Acres	$163,381.10	$108,920.76	$272,301.84
Pipelines	178,842.50	Linear Feet	$373,574.76	$249,049.86	$622,624.60
Pond	5.00	Number	$9,870.00	$6,580.00	$16,450.00

Portable Windbreaks	2.00	Number	$3,203.15	$2,135.44	$5,338.58

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Grazing Management (continued)					
Prescribed Grazing	6,721.50	Acres	$0.00	$0.00	$0.00
Range Planting	137.25	Acres	$45.88	$30.60	$76.48
Rural Water Hookup	22.00	Number	$18,328.77	$12,219.20	$30,547.97
Solar Pumps	2.00	Number	$9,097.45	$6,064.96	$15,162.41
Spring Development	4.00	Number	$5,282.76	$3,521.84	$8,804.60
Trough and Tank	140.00	Number	$131,257.78	$87,505.17	$218,762.95
Use Exclusion	111.00	Acres	$0.00	$0.00	$0.00
Well (Livestock Only)	41.00	Number	$215,277.06	$143,517.99	$358,795.05
		Total	**$1,461,550.80**	**$974,367.19**	**$2,435,917.05**
Livestock Manure Management System -Full Systems					
Phase I Waste Management System	17.00	System(s)	$1,289,146.58	$859,431.06	$2,148,577.64
Phase II Waste Management System	13.00	System(s)	$497,286.51	$331,524.32	$828,810.82
Phase III Waste Management System	3.00	System(s)	$188,757.87	$125,838.58	$314,596.45
Waste Management System (Coordinated With EQIP)	1.00	System(s)	$24,998.40	$16,665.60	$41,664.00
Waste Management System (Full System Completed)	2.00	System(s)	$350,000.00	$233,333.32	$583,333.32
		Total	**$2,350,189.36**	**$1,566,792.88**	**$3,916,982.23**
Livestock Manure Management System - Partial Systems					
Fencing	7,409.00	Linear Feet	$8,001.72	$5,334.48	$13,336.20
Fencing (Ag Waste)	3,960.00	Linear Feet	$4,276.80	$2,851.20	$7,128.00
Fencing (Barbed)	10,488.00	Linear Feet	$0.00	$0.00	$0.00

Livestock Manure Management System - Partial Systems (continued)

Miscellaneous (Grazing Management)	1.00	Misc	$3,639.95	$2,426.64	$6,066.59
Miscellaneous (Partial Manure Management System)	1.00	Misc	$800.00	$533.00	$1,333.00
Perimeter Fencing (Ag Waste)	10,560.00	Linear Feet	$14,304.03	$9,536.02	$23,840.04
Pipelines	1,162.00	Linear Feet	$14,898.97	$9,932.65	$24,831.62
Portable Windbreaks	16,755.00	Linear Feet	$179,867.00	$119,911.33	$299,778.33
Trough and Tank	4.00	Number	$807.72	$538.48	$1,346.20
Waste Utilization	23,803.00	Tons	$8,076.64	$5,384.43	$13,461.07
Water Supply (Ag Waste)	1.00	Number	$2,167.32	$1,444.88	$3,612.20
Watering Facility (Ag Waste:Tank,Pipeline,Well)	5.00	Number	$43,935.97	$29,290.63	$73,226.60
Well (Livestock Only)	2.00	Number	$11,911.71	$7,941.14	$19,852.85
		Total	**$292,687.83**	**$195,124.88**	**$487,812.70**

Miscellaneous Practices

Cultural Resource Review	6.00	Number	$3,910.00	$2,606.67	$6,516.67
Grade Stabilization	1.00	Number	$4,443.46	$2,962.31	$7,405.77
Miscellaneous (Grazing Management)	2.00	Misc	$415.74	$277.16	$692.90
Miscellaneous (Miscellaneous Practices)	55.00	Misc	$8,277.99	$5,518.59	$13,796.58
Portable Windbreaks	240.00	Linear Feet	$5,004.00	$3,336.00	$8,340.00
Septic System Renovation	88.00	Number	$633,318.71	$422,212.49	$1,055,531.20
Solar Pumps	7.00	Number	$17,246.86	$11,497.89	$28,744.75
Well Decommissioning	43.00	Number	$24,896.23	$16,597.48	$41,493.71
		Total	**$697,512.99**	**$465,008.59**	**$1,162,521.58**

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Riparian Area Management					
Miscellaneous (Riparian Area Management)	2.00	Misc	$10,782.40	$7,188.27	$17,970.67
Riparian Easement (On Cropland)	62.40	Acres	$51,091.98	$46,271.60	$97,363.58
Riparian Herbaceous Cover	270.35	Acres	$7,471.95	$6,127.12	$13,599.07
Selective Debris Removal (Site-Specific Approval Required)	43.56	Site	$0.00	$0.00	$0.00
Stream Channel Stabilization	5,200.00	Linear Feet	$14,397.50	$9,598.33	$23,995.83
Streambank and Shoreline Stabilization	380.00	Linear Feet	$0.00	$0.00	$0.00
Tree Hand Plants - 2' Non-Rooted Stakes	100.00	Number	$240.00	$160.00	$400.00
Tree Handplants	945.00	Number	$0.00	$0.00	$0.00
Tree Planting - Machine (Scalp Plant/Site Prep)	10.20	Per 100 Ft	$465.12	$310.08	$775.20
Weed Control for Established Trees (Chemical)	5.00	Acres	$24.00	$16.00	$40.00
		Total	**$84,472.95**	**$69,671.40**	**$154,144.35**
Upland Tree Planting					
Miscellaneous (Upland Tree Planting)	6,520.00	Misc	$0.00	$0.00	$0.00
Tree Handplants	128.00	Number	$0.00	$0.00	$0.00
Tree Tube Shelters (3 Foot)	420.00	Number	$0.00	$0.00	$0.00
Tree/Shrub Establishment	504.09	Per 100 Ft	$1,019.52	$679.68	$1,699.20
Weed Control for Established Trees (4x4 Weed Barrier Sq.)	7.00	Number	$0.00	$0.00	$0.00
Weed Control for Established Trees (Weed Barrier)	440.36	Per 100 Ft	$4,604.40	$3,069.60	$7,674.00
Windbreak/Shelterbelt	4,767.86	Per 100 Ft	$1,995.24	$1,330.16	$3,325.40
		Total	**$7,619.16**	**$5,079.44**	**$12,698.60**

Category/Practice	Amount	Units	Cost Share	Producer Match	Total Cost
Vegetative Buffers					
Grassed Waterway	1.00	Acres	$0.00	$0.00	$0.00
		Total	**$0.00**	**$0.00**	**$0.00**
		Grand Total	**$5,211,734.91**	**$3,487,845.53**	**$8,699,580.36**