
NPS BMP Team – Phase V

PERIOD: 11-1-2024 to 11-30-2028

PROJECT TITLE: NPS BMP Team

PROJECT SPONSOR: Ransom County Soil Conservation District

CONTACT PERSON: Bob Flath

TITLE: Ransom County Soil Conservation District Manager

P.O. Box 431

Lisbon, ND 58054

PHONE: 701-683-5832 ext.3

E-MAIL: Robert.Flath@nd.nacdnet.net

STATE: North Dakota **WATERSHED:** Statewide

HYDROLOGIC UNIT NUMBER: statewide

HIGH PRIORITY WATERSHED: Yes

TMDL STATUS: NA

PROJECT TYPES	WATERBODY TYPES	NPS CATEGORY
<input checked="" type="checkbox"/> STAFFING & SUPPORT	GROUNDWATER	<input checked="" type="checkbox"/> AGRICULTURE
<input type="checkbox"/> WATERSHED	<input checked="" type="checkbox"/> LAKES/RESERVOIRS	<input type="checkbox"/> URBAN UNOFF
<input type="checkbox"/> I & E	<input checked="" type="checkbox"/> RIVERS	
	<input checked="" type="checkbox"/> STREAMS	
	<input type="checkbox"/> WETLANDS	

PROJECT LOCATION: North Dakota

SUMMARIZATION OF MAJOR GOALS: The primary goal of this proposal is to provide timely engineering assistance to all the local Section 319 watershed projects in North Dakota as well as to the statewide manure management programs sponsored by ND Stockmen’s Association and the ND Department of Agriculture. This will be accomplished through the continued employment of the “NPS BMP Team”. The team consists of a contracted private engineering firm which is selected through a competitive proposal process.

PROJECT DESCRIPTION: North Dakota presently has seventeen locally sponsored watershed projects functioning in the state. 11 of the 18 currently active 319 watershed projects, which include the ND Stockmen’s Association and ND Department of Agriculture, have prioritized BMP’s that require engineering assistance. The NPS BMP Team has been assembled to provide timely and cost-efficient engineering services to these projects.

FY2024 319 Funds Requested: \$376,000

Cash Match: \$200,000

In-Kind Match: \$232,000

Total Project Cost: \$808,000

1.0 PREVIOUS ACCOMPLISHMENTS

The NPS BMP Team has been providing local watershed projects and landowners timely engineering assistance since July 1, 1998. The Team has worked with watershed coordinators, the ND Stockmen's Association and ND Department of Agriculture programs to design and implement BMPs. (See Appendix A - Active Watershed Projects & Manure Systems Designed by the NPS BMP Team maps.)

BMP Team services include site investigations, soil borings, topographical surveys, designs, and construction oversight for practices to improve and/or to protect water quality. Example practices the team has provided engineering services for include manure management systems, livestock water developments, streambank stabilization, grassed waterways, and wetland creations.

To date, the NPS BMP Team has assisted more than 300 producers with designs and oversight of their BMPs to improve/protect water quality within their watershed. They have also aided in designing other practices such as spring developments, livestock watering facilities, and streambank bioengineering.

2.0 STATEMENT OF NEED

The beneficial use aquatic life is assessed as fully supporting for 1,608.57 miles of the rivers and streams assessed according to the 2022 305(b) report, while another 2,123.37 miles of rivers and stream are assessed as fully supporting but threatened for aquatic life use. The remaining 1,711.15 miles of rivers and streams assessed for the 2022 305(b) report were assessed as not supporting aquatic life use. In other words, if current water quality trends persist, the miles of rivers and streams classified as not supporting for aquatic life will continue to rise into the future.

NPS pollution (e.g., livestock waste, siltation/sedimentation, and stream habitat loss or degradation) was the primary cause of aquatic life use impairment. Organic enrichment creates conditions in the stream that cause dissolved oxygen (DO) to be depleted. Rivers and streams impaired by siltation/sedimentation, organic enrichment, eutrophication due to excess nutrients and habitat alteration also will result in a degradation of the biological community. Other forms of pollution causing impairment are trace element contamination, flow alteration and oxygen depletion.

Recreational use was assessed on 7,979.50 miles of rivers and streams. Recreation use was fully supporting; fully supporting but threatened; and not supporting on 1,368.83 miles, 3,262.74 miles and 3,347.93 miles, respectively. E. coli or fecal coliform bacteria data collected from monitoring stations across the state are the primary indicators of recreation use attainment. The primary sources of E. coli and fecal coliform bacteria contamination are wildlife, animal feeding operations, riparian grazing and failing or poorly designed septic systems. Other factors that can affect the use of the state's rivers and streams for recreation would be eutrophication from excessive nutrient loading, resulting in nuisance algae and plant growth.

A total of 201 lakes are included in the state's water quality standards. One lake is listed with all uses attained. One-hundred-forty-eight (148) lakes and reservoirs list one use is fully supporting (i.e., industrial and agricultural) but other uses were not assessed. Nineteen (19) lakes and reservoirs were assessed as fully supporting but threatened. A threatened assessment means that if water quality and/or watershed trends continue, it is unlikely these lakes will continue to support aquatic life use. The lakes and reservoirs will begin to experience more frequent algal blooms and fish kills. They will display a shift in trophic

status from a mesotrophic or eutrophic condition to a hypereutrophic condition. Thirty-Three (33) lakes and reservoirs had at least one beneficial use impaired and a TMDL required.

One of the primary causes of aquatic life impairment to lakes and reservoirs is low dissolved oxygen (DO) in the water column. Low DO in lakes can occur in summer (summer kills) but usually occurs in the winter under ice-cover conditions. When fish kills occur, low DO-tolerant fish species (e.g., carp, bullhead, white suckers) will be favored, resulting in a lake dominated by these rough fish species. Pollutants which stimulate the production of organic matter, such as plants and algae can also cause aquatic life impairment. Two secondary concerns impacting lakes include excessive nutrient loading and siltation. Major sources of nutrient loads include cropland runoff and other nonpoint sources such as animal feeding operations. Two major sources of siltation are streambank and shoreline erosion.

According to the National Agriculture Statistics Service inventory from January 1, 2023 quantities of cattle and calves in North Dakota totaled 1.75 million. The report also lists a total of 14,000 milk cows, 155,000 pigs, and 64,000 sheep. Runoff from these feeding areas and improper manure management has the potential to impair all lakes, rivers, streams, and wetlands.

11 of the 18 active 319 watershed projects as of September of 2023, which include the ND Stockmen's Association and ND Department of Agriculture, have prioritized BMP's that require engineering assistance. The NPS BMP Team was established to ensure these projects and the producers/landowners they support have access to engineering services that could be provided in a timely manner and within the time periods of the projects. (See Appendix A - Active Watershed Projects & Manure Systems Designed by the NPS BMP Team map.)

On an annual basis, the NPS BMP Team provides engineering services to approximately 10 to 15 producers and/or landowners to design and construct manure management systems and riparian restoration projects. These services typically include: 1) completion of 8 manure management system designs; 2) construction oversight for 5 manure management systems and 3) provide engineering services for the design and/or construction of 4 riparian restoration projects. Given the extent of water quality impacts associated with improper manure management and/or degraded riparian areas, the demand for timely engineering services will continue into the foreseeable future.

3.0 PROJECT DESCRIPTION

GOAL 1:

To provide efficient and timely delivery of engineering services to all Non-Point Source Pollution control projects in North Dakota.

Objective 1) To administer a delivery process to provide the engineering services needed across the state to allow projects to develop, design, and install the BMPs needed to achieve their NPS pollution management objectives.

Task 1: Secure engineering services of a private firm for the continuation of the NPS BMP Team. (Contracted engineer is selected through a competitive proposal process. Contracts are for a 5-year time period.)

Product: A NPS BMP Team equipped to handle state-wide 319 requests in a timely manner.

Cost – \$5,000

Task 2: Process engineering requests submitted by local Section 319 projects to develop designs for priority manure management systems or riparian restoration projects identified by the local projects. Also included for assistance is any Best Management Practice requiring an engineer's estimate in the NPS Program Annual BMP Guidelines. (See Appendix B – Engineering request forms)

Product: A location for an estimated 10 to 15 engineering services requests per year.

Cost - \$15,000

Task 3: Manage the project's financial records and develop the annual and final project reports for submittal to the NDDEQ.

Product: Grants management; grant and matching fund solicitation; monthly/quarterly reimbursement requests; 4 annual progress reports and 1 final project report.

Cost - \$20,000

Objective 2) Coordinate with the local NPS project staff and participating landowners to deliver engineering assistance to design and construct 20-30 projects addressing manure management, degraded riparian areas, and any other Best Management Practices requiring engineering estimates in the NPS Program Annual BMP Guidelines.

Task 4: Priority BMPs to be addressed and expected deliverables for these BMPs include: 1) design 8 manure management systems and provide construction oversight for 5 manure management systems; 2) design and/or construct 4 riparian restoration projects; 3) provide engineering assistance for BMP's listed in NPS Program Annual BMP Guidelines; and 4) provide assistance for watershed project staff across the state with site visits, producer visits, cost analysis, and general program management.

Product: 32 manure management system designs, 20 manure management systems completed, and 10 riparian restoration projects (riverbank or shoreline stabilization, wetland creations, water developments, grassed waterways, etc.) over the 4 years.

Cost – \$336,000

3.3 Milestone Table (See Appendix C – Milestone Table)

4.0 COORDINATION PLAN

- 1) The Ransom County SCD will be the lead sponsor responsible for project administration. The SCD will remain in close contact with the engineering firm to confirm availability of services. They will also work closely with all local projects on their engineering requests.
- 2) Locally sponsored watershed projects will be responsible for working directly with producers and landowners in their watershed project areas to address manure management in confined feeding areas, address degraded riparian areas and other sites experiencing severe erosion, and also aid with other Best Management Practices requiring engineering estimates in the NPS Program Annual BMP Guidelines. To ensure equal opportunity for use of BMP funding for watershed project sponsors, priority will be given to requests addressing Manure Management Systems or Riparian Restoration projects. Projects receiving assistance from the NPS BMP Team will be asked to provide assistance in the form of cash or In-Kind Match to assist with costs not covered by the 319 grant. Costs associated with installing engineered practices are the responsibility of the entity requesting engineering assistance and the landowner/producer.
- 3) ND Stockmen’s Association Environmental Services Program will be responsible for working directly with producers and landowners outside the active watershed project areas throughout the state to address manure management in confined feeding areas. They will be in charge of submitting only their high priority projects for engineering assistance. Projects receiving assistance from the NPS BMP Team will be asked to provide assistance in the form of cash or In-Kind Match to assist with costs not covered by the 319 grant. Costs associated with installing engineered practices are the responsibility of the entity requesting engineering assistance and the landowner/producer.
- 4) ND Department of Agriculture Livestock Pollution Prevention Program will be responsible for working directly with producers and landowners outside the active watershed project areas throughout the state to address manure management in winter crop aftermath feeding areas and in confined feeding areas. They will be in charge of submitting high priority projects for engineering assistance. Projects receiving assistance from the NPS BMP Team will be asked to provide assistance in the form of cash or In-Kind Match to assist with costs not covered by the 319 grant. Costs associated with installing engineered practices are the responsibility of the entity requesting engineering assistance and the landowner/producer.
- 5) The order in which requests are received and the type of BMP determines any priority that may be given to any one project over another. Some requests may take priority over others in specific situations. Perhaps a landowner/producer sets a timeline for construction that allows engineering services to be delayed while those projects which are being expedited may receive more immediate attention.

- 6) The Program Coordinator with the Ransom County Soil Conservation District strives to ensure duplication is not occurring with other agencies/projects. Communication is key, visiting with the project coordinators about the process and even speaking directly with the other agencies/projects that may be involved. Statewide projects like those sponsored by ND Stockmen's Assoc. and the ND Dept. of Ag can in some cases work with producers in existing 319 project areas. When this occurs the local project staff will be notified so that they can coordinate efforts concerning the project and measure the impacts to their project. The contracted engineer is also very open with cooperating agencies. In many cases these agencies look to the BMP Team to assist with projects they are involved with to aid in reducing workload. Some examples of other agencies would be the Natural Resources Conservation Service, State Water Commission/Department of Water Resources, and ND Game and Fish.
- 7) Natural Resources Conservation Service will provide technical assistance, help with coordinating project activities, target resources, and be able to incorporate existing USDA programs at the local level.
- 8) NDSU Extension Services will assist the project by providing information and education activities.
- 9) North Dakota State Water Commission will contribute financial assistance, which is beneficial in keeping the project effective. Legislative approval allows for \$200,000 from the State Water Commission for use in this project over the current biennium. Not only does this cash cover expenses but it also qualifies as In-Kind match. Using these funds as match leverages Section 319 funds of up to \$300,000 when used and documented properly.
- 10) Participating Landowners/Producers are responsible for following the recommendations and design criteria provided to them by the BMP Team. Construction contractors are the responsibility of the Landowner/Producer. Contract paperwork that can be used between the Landowner/Producer and Contractors is available upon request from watershed project staff or through the BMP Team. Cost share that is not covered by programs like 319, EQIP, CSP, etc. is the responsibility of the Landowner/Producer.

5.0 EVALUATION AND MONITORING PLAN

The NPS BMP Team is a service-based project that focuses on delivering timely and efficient engineering support to all 319 watershed projects state-wide. The water quality benefits of the practices designed by the NPS BMP Team are tracked by the projects receiving engineering assistance.

The criteria used to determine the success of the project includes the number of manure management systems, river/stream/lake stabilizations, and all other practices designed by the NPS BMP Team.

Annually the Ransom County SCD board will request written evaluations from the 319 watershed sponsors and producers which have received engineering assistance. This feedback will be used to continue the best, most cost-effective engineering services across the state.

6.0 BUDGET

See Attachments (Appendix D – Budget Tables)

APPENDIX LIST

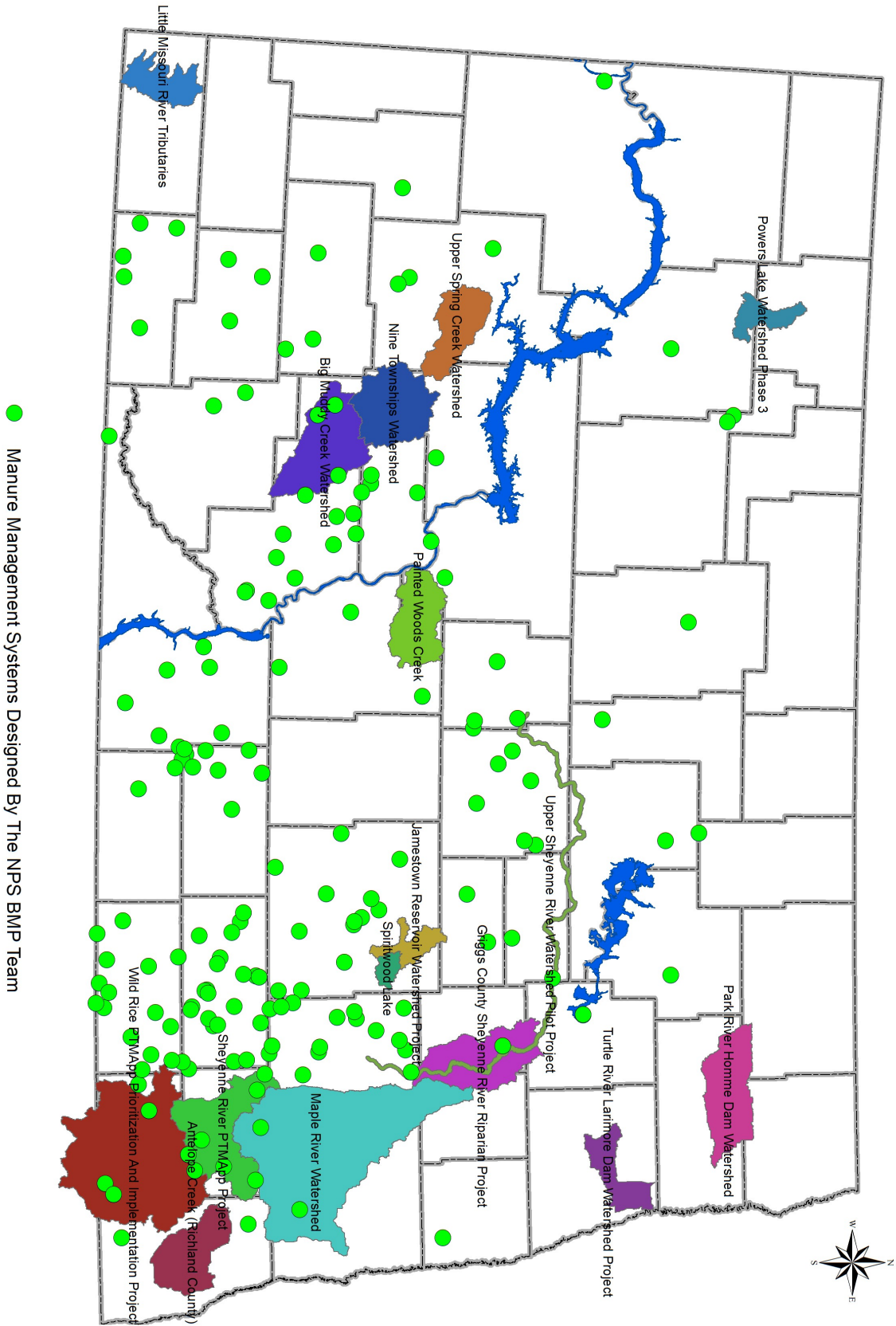
- A) Active Watershed Projects
Manure Management System Designed
- B) Request Forms
- C) Milestone Table
- D) Budget Tables

Appendix A

Active Watershed Projects And Manure Management Systems Designed by NPS BMP Team as of August 8, 2023

*As new watershed projects are developed, they will be added to the map and be eligible for engineering support. The statewide manure management programs sponsored by the ND Stockmen's Association and ND Department of Agriculture are also eligible for NPS BMP Team assistance.

Active Watershed Projects and Manure Management Systems Designed by the NPS BMP Team (as of 8/8/2023)



Appendix B

Request Forms

APPLICATION FOR ENGINEERING ASSISTANCE FOR **MANURE MANAGEMENT SYSTEMS**

Date: _____ Watershed Project: _____ Coordinator: _____

Landowner: _____ Coordinator Phone: _____

Address: _____

Phone Number: _____ Section _____ Township _____ Range _____

GENERAL INFORMATION

1) Engineering assistance is being requested to develop designs for a:

Existing Facility _____ Relocation _____ Expansion _____ New System _____

2) Number of years livestock have been fed at this site: _____

(a) If less than 5 years explain why: _____

3) Type of livestock to be fed in constructed feeding area (dairy, beef, swine, etc.): _____

(a) Number currently being fed: _____ (b) Number to be fed after construction: _____

4) Total acres of current feeding area: _____

5) Do you have any plans to change size of operation in the future? _____yes _____no

(a) Please explain when and amount of size change: _____

6) How many months per year will the constructed feeding area be used? _____months

7) Approximate date for the completion of the system: _____

8) What is the proximity of the feeding area to the nearest waterbody (river, creek, etc): _____miles

9) Will a permit be obtained from ND Dept. of Health: _____yes _____no

- 10) **Cultural Resources approval from SHPO:** Obtained Applied for
 Will be applied for
- 11) **Project status:** Approved Demonstration Project Approved Implementation Project
 Pending final approval (PIP submitted)
- 12) **Type of assistance needed:** Survey & design only Survey through check-out
 Soil boring/site investigation Consultation Other
- 13) **Cost-share assistance:** Approved for 319 funding Approved for other funding
 Application submitted, pending approval Considering funding sources
- 14) **Does this project fit within your 319 project goal?** Yes No
If so—how? _____

- 15) **Local 319 project office priority ranking:** High Medium Low
- 16) An **aerial** (ArcGIS or GoogleEarth) and **topographic** map of the planned feeding area must be attached to the request.

Landowner Signature: _____ Date: _____

319 Watershed Coordinator _____ Date: _____

Please remit form to Ransom County SCD , P.O. Box 431, Lisbon ND 58054
 when requesting engineering assistance or E-mail to: Robert.flath@nd.nacdnet.net

APPLICATION FOR ENGINEERING ASSISTANCE FOR **STREAMBANK RESTORATION**

Date: _____ Watershed Project: _____ Coordinator: _____

Landowner: _____ Coordinator Phone: _____

Address: _____

Phone Number: _____ Section _____ Township _____ Range _____

GENERAL INFORMATION

1) Engineering assistance is being requested to develop design to protect:

Home Other Bldg. Other _____

Road Private Township County State Hwy Federal Hwy

(Please circle appropriate choice)

2) Army Corp of Engineer's permit :

Obtained Applied For Will be Applied For

3) Cultural Resources approval from SHPO

Obtained Applied For Will be Applied For

4) Will cost-share be provided by entities other than 319: Yes No

If Yes please list below

5) **Project status:** _____Approved Demonstration Project _____Approved Implementation Project
_____Pending final approval (PIP submitted)

6) **Type of assistance needed:** Survey & design only Survey through check-out
 Soil boring/site investigation Consultation Other

7) **Cost-share assistance:** Approved for 319 funding Approved for other funding
 Application submitted, pending approval Considering funding sources

8) **Does this project fit within your 319 project goal?** Yes No

If so—how? _____

9) **Local 319 project office priority ranking:** High Medium Low

10) An **aerial** (*ArcGIS or Google Earth*) and **topographic** map of the area must be attached to the request.

Landowner Signature: _____ Date: _____

319 Watershed Coordinator: _____ Date: _____

Please remit form to Ransom County SCD , P.O. Box 431, Lisbon, ND 58054
when requesting engineering assistance or E-mail to: Robert.flath@nd.nacdnet.net

Date: _____	Watershed Project: _____	Coordinator: _____
Landowner: _____		Coordinator Phone: _____
Address: _____		
Phone Number: _____	Section _____	Township _____ Range _____

GENERAL INFORMATION

1) Engineering assistance is being requested to develop design for:

Grade Stabilization Grassed Waterway

Water and Sediment Control Basin (WASCOB)

Other

2) Army Corp of Engineer's permit:

Obtained Applied for Will be Applied

For Not required

3) Cultural Resources approval from SHPO

Obtained Applied for Will be Applied for

4) Will cost-share be provided by entities other than 319: Yes No

If Yes please list below

5) **Project status:** _____Approved Demonstration Project _____Approved Implementation Project
 _____Pending final approval (PIP submitted)

6) **Type of assistance needed:** Survey & design only Survey through check-out
 Soil boring/site investigation Consultation Other

7) **Cost-share assistance:** Approved for 319 funding Approved for other funding
 Application submitted, pending approval Considering funding sources

8) **Does this project fit within your 319-project goal?** Yes No

If so—how? _____

9) **Local 319 project office priority ranking:** High Medium Low

10) An **aerial** (*ArcGIS or Google Earth*) and **topographic** map of the area must be attached to the request.

Landowner Signature: _____ Date: _____

319 Watershed Coordinator: _____ Date: _____

Please remit form to Ransom County SCD , P.O. Box 431, Lisbon, ND 58054
when requesting engineering assistance or E-mail to: Robert.flath@nd.nacdnet.net

Appendix C

Milestone Tables

Milestone Table for NPS BMP Team - Phase V					
Task/Responsible Organizations	Output	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Objective 1					
Task 1	Ransom County SCD Secure engineering services	*	*	*	*
Task 2	Ransom County SCD Process engineering requests	*	*	*	*
Task 3	Ransom County SCD Grant management, financial records, reports	*	*	*	*
Task 4	Ransom County SCD 32 manure mgt system designs	8 designs	8 designs	8 designs	8 designs
	20 completed manure mgt systems	5 systems	5 systems	5 systems	5 systems
	16 riparian designs &/or competed systems	4 projects	4 projects	4 projects	4 projects
	8 miscellaneous practices	2 projects	2 projects	2 projects	2 projects
* Ransom County SCD - Local project manager and sponsor will be responsible for project coordination, reimbursement payments, tracking, and progress.					
Landowners will make land management decisions and provide cash and in-kind match for BMPs.					

Appendix D

Budget Tables

Budget Table for NPS BMP Team - Phase V					
Part 1					
	2025	2026	2027	2028	Totals
EPA 319 Funds					
1) FY 2024	\$94,000	\$94,000	\$94,000	\$94,000	\$376,000
Subtotal	\$94,000	\$94,000	\$94,000	\$94,000	\$376,000
State / Local Match					
1) ND Dept. of Water Resources	\$0	\$100,000	\$100,000	\$0	\$200,000
2) In-Kind Match *	\$58,000	\$58,000	\$58,000	\$58,000	\$232,000
Subtotal	\$58,000	\$158,000	\$158,000	\$58,000	\$432,000
Total Budget	\$152,000	\$252,000	\$252,000	\$152,000	\$808,000
* In-Kind donations will come from 319 projects					

Budget Table for NPS BMP Team - Phase V								
Part 2								
	2025	2026	2027	2028	Totals	Cash	In-Kind	319 (60%)
Objective 1: Tasks 1-3								
Personnel/Support								
1) Administration	\$16,667	\$16,667	\$16,667	\$16,667	\$66,668	\$0	\$26,667	\$40,000
Subtotal	\$16,667	\$16,667	\$16,667	\$16,667	\$66,668	\$0	\$26,667	\$40,000
Objective 2: Task 4								
Applying BMP's								
1) 32 Manure Mgt. Designs/oversight	\$81,250	\$81,250	\$81,250	\$81,250	\$325,000	\$125,000	\$130,000	\$195,000
2) 16 riparian Designs/oversight	\$25,417	\$25,417	\$25,417	\$25,417	\$101,667	\$75,000	\$40,667	\$61,000
3) Other BMP's	\$16,667	\$16,667	\$16,667	\$16,667	\$66,667		\$26,667	\$40,000
4) Program Assistance	\$16,667	\$16,667	\$16,667	\$16,667	\$66,667		\$26,667	\$40,000
Subtotal	\$140,000	\$140,000	\$140,000	\$140,000	\$560,000	\$200,000	\$224,000	\$336,000
Total 319/Non-Federal Budget	\$156,667	\$156,667	\$156,667	\$156,667	\$626,667	\$200,000	\$250,667	\$376,000