1.0 PROJECT SUMMARY SHEET

PROJECT TITLE AND NAME:

Antelope Creek Watershed and the Riparian Corridor of the
Wild Rice River Implementation Project Phase IV

NAME AND ADDRESS OF LEAD PROJECT SPONSORS/SUBGRANTEES:

Richland County Soil Conservation District
1687 By Pass Road
Wahpeton, ND 58075

CONTACT PERSON: Jennifer Klostreich **TITLE**: Coordinator

PHONE 701-642-5997 ex 3 **FAX** 1-855-813-7554

STATE: North Dakota **WATERSHED:** Antelope Creek /Wild Rice River Riparian Corridor
HYDROLOGIC UNIT CODE: 09020105 **HIGH PRIORITY WATERSHED:** yes

PROJECT TYPES	WATERBODY TYPES	NPS CATEGORY
[ ] STAFFING & SUPPORT	[ ] GROUNDWATER	[x] AGRICULTURE
[x] WATERSHED	[x] LAKES/RESERVOIR	[ ] URBAN RUNOFF
[ ] I & E	[x] RIVERS	
	[x] STREAMS	
	[ ] WETLANDS	

EXTRACTION
[ ] STORAGE/LAND DISPOSAL
[ ] HYDRO MODIFICATION
[ ] OTHER

PROJECT AREA: Richland County, North Dakota

PROJECT TITLE AND NAME:

Antelope Creek Watershed and the riparian corridor of the
Wild Rice River Implementation Project Phase IV

SUMMARIZATION OF MAJOR GOALS:

GOAL FOR THE PROJECT: The primary goal of the project is to restore the recreational uses of the impaired reaches of Antelope Creek and the Wild Rice River to fully supporting status. As a secondary goal, the project will also protect and enhance the aquatic life use of Antelope Creek and the Wild Rice River through targeted implementation of BMP within or immediately adjacent to the riparian corridor.

PROJECT DESCRIPTION:

The Antelope Creek Watershed and the riparian corridor of the Wild Rice River Implementation Project will implement comprehensive conservation planning, BMP implementation, monitoring and assessment, and information and education project on the highest priority ranked subwatershed in terms of non-point (NPS) contribution to the Antelope Creek and Wild Rice River.

The main objectives are:

A. **OBJECTIVE:** Hire staff to provide one-on-one conservation planning assistance to producers.

B. **OBJECTIVE:** Reduce the E. coli bacteria concentrations at established monitoring sites to an annual geometric mean concentrations of less than 126 CFU/100 mL and less than 10% of the samples exceeding 409 CFU/100 mL.

C. **OBJECTIVE:** Improve the vegetative condition of the riparian corridor as well as the buffering capabilities of adjacent cropland along protions of the Antelope Creek and the Wild Rice River.

D. **OBJECTIVE:** Increase the public understanding of the impacts of NPS pollution and potential solutions to NPS problems.

FY18 Section 319 Funds Requested $ 430,000 **Match** $ 395,800

Other Federal Funds $ 1,199,500 **Total Project Cost** $ 2,025,300

ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT PHASE IV

2.0 STATEMENT OF NEED

The Richland County Soil Conservation District and local county leadership has long recognized the natural, economic, and recreational value of the many water bodies in the county. High priorities are maintenance of these water bodies and improved management of soils; along with the proper disposal of animal and human waste.

The Richland County Soil Conservation District (RCSCD) has been able to assist Richland County residents in the Phases I - III with water quality improvement practices. Staff has been able to assist residents with Septic System Renovations, Engineering Services, Well Decommissionings and Waste Management Systems. Please refer to Appendix 5 for a list of all accomplishments in Phases I - III, including de-listing of the Wild Rice River (ND-09020105-001-S_00) in the 2014 Integrated Report.

The RCSCD will assist producer/landowners with water quality improvement projects in local waterways which include Antelope Creek and its tributaries, Wild Rice River and its tributaries, Bois De Sioux River and the Red River. The staff will focus on practices which fall within one mile of the waterbodies. The Wild Rice River, Antelope Creek, Bois de Sioux and Red River are listed in the 2016 List of Section 303(d) TMDL Waters. See Appendix 6 for a 303 (d) TMDL Waters for the Red River Basin in North Dakota list in Richland County.

Two TMDLs have been developed one for the Antelope Creek and one for the Wild Rice River in Sargent and Richland Counties to address the recreational use impairments. Based on these TMDLs, fecal coliform bacteria have been identified as the pollutant impairing the recreational uses of the listed reaches. The state of North Dakota has eliminated the fecal coliform bacteria standard and is only using the E.coli standard for bacteria. This standards change is recommended by the US EPA as E. coli is believed to be a better indicator of recreational use risk (i.e., incidence of gastrointestinal disease). Major sources of the E. coli bacteria are animal feeding operations (AFOs) and failed privately owned septic systems. For Phase IV, restoration of the recreational uses is the main priority and the RCSCD will address this priority by focusing its efforts on AFOs and failed septic systems within one mile of the Antelope Creek and its tributaries, Wild Rice River and its tributaries, Bois De Sioux River and the Red River in Richland County.

A full copy of the Antelope Creek and Wild Rice River TMDL are posted on the North Dakota Department of Health web site at:
http://www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

A secondary concern is the aquatic life use impairments. The impairments listed in the 2016 List of Section 303(d) TMDL Waters for the Red River Basin in North Dakota lists Dissolved Oxygen, Sedimentation and Siltation as impairments to the Antelope Creek, Wild Rice River, Bois de Sioux and Red River. The likely sources of these pollutants are determined to be cropland erosion and runoff, wetland drainage, and poor grazing management along waterways. The RCSCD would like to focus on installing practices such as cover crops, septic system replacement and grassed waterways that would improve water quality within one mile of water bodies in Richland County.

Antelope Creek

The Antelope Creek watershed is a 122,923 acre watershed located in Richland County in southeastern North Dakota. Antelope Creek is a tributary of the Wild Rice River and lies within the Level IV Lake Agassiz Plains Ecoregion (48).

The Lake Agassiz Plain ecoregion (48a) is comprised of thick beds of glacial drift overlain by silt and clay lacustrine deposits from glacial Lake Agassiz. The topography of this ecoregion is extremely flat, with sparse lakes and pothole wetlands. Tall grass prairie was the dominant habitat prior to European settlement and has now been replaced with intensive agriculture. Agricultural production in the southern region consists of corn, soybeans, wheat and sugar beets. The Sand Deltas and Beach Ridges (48b) ecoregion disrupts the flat topography of the Red River Valley. The beach ridges are parallel lines of sand and gravel that were formed by wave action of the contrasting shoreline levels of Lake Agassiz. The deltas consist of lenses of fine coarse sand and are blown into dunes (USGS, 2006)

The dominant soil associations in the Antelope Creek subwatersheds are the Fargo, Overly-Gardena, Hecla-Hamar-Arveson, Embden-Glyndon-Tiffany, and Galchutt-Fargo-Aberdeen. The Fargo association consists of mostly to nearly level topography, except for steeper elevations along streams and drainage ways, with poorly drained, fine textured soils formed in clayey lacustrine sediments. The Overly-Gardena association consists of nearly level, moderately well drained; medium textured and moderately fine textured soils formed in silty lacustrine sediments. The Hecla-Hamar-Arveson association nearly level to undulating, moderately well drained to very poorly drained, coarse-textured to medium-textured soils formed in sandy and loamy lacustrine sediments. The Embden-Glyndon-Tiffany association is described as nearly level, to moderately well drained to poorly drained, moderately coarse textured and medium textured soils formed in loamy and silty lacustrine sediments; some are shallow over lime. The Galchutt-Fargo-Aberdeen association again is similar in topographical characteristics as the aforementioned associations, the soils of this associations consist of somewhat poorly drained and poorly drained, with medium to moderately fine textured soils formed in silty and clayey lacustrine sediment, some soils are shallow over a sodic claypan subsoil (NRCS, 1975).

The dominant land uses in the Antelope Creek watershed is row crop agriculture. According to the 2006 National Agricultural Statistical Service (NASS) land survey data, approximately 86 percent of the land is active cropland, 5 percent in mid-density urban development, 9 percent is either wetlands, water, woods, barren, pasture/rangeland or in the conservation reserve program (CRP). The majority of the crops grown consist of soybeans, corn, spring wheat, alfalfa, sugar beets, sunflowers and dry beans. Animal feeding operations and "hobby farms" are also present in the Antelope Creek watershed, but their number and locations are unknown.

Wild Rice River

The Wild Rice River watershed is a 1.4 million acre watershed located in Cass, Dickey, Ransom, Richland and Sargent Counties in southeastern North Dakota and Marshall and Roberts Counties in northeastern South Dakota. There are 925,184 acres located in Richland County. The RCSCD would like to focus on installing practices such as cover crops, septic system replacement and grassed waterways that would improve water quality within one mile of the Wild Rice River in Richland County.

The Tewaukon Dad Ice Moraine (46e) ecoregion is a continuation of the Prairie Coteau extending below the Prairie Coteau Escarpment. A large density of semi permanent wetlands provides feeding and nesting habitat for many species of waterfowl, with the remaining upland areas under cultivation. The Drift Plains (46i) ecoregion was formed by the retreating Wisconsinan glacier that left a thick mantle of glacial till. The landscape consists of temporary and seasonal wetlands. Due to the productive soil of this ecoregion almost all of the area is under cultivation. The Glacial Lake Agassiz Plain ecoregion (48a) is compromised of thick beds of glacial drift overlain by silt and clay lacustrine deposits from glacial Lake Agassiz. The topography of this ecoregion is extremely flat, with sparse lakes and pothole wetlands. Tall grass prairie was the dominant habitat prior to European settlement and has now been replaced with intensive agriculture. Agricultural production in the southern region consist of corn, soybeans, wheat and sugar beets. The Sand Deltas and Beach Ridges (48b) ecoregion disrupts the flat topography of the Red River Valley. The beach ridges are parallel lines of sand and gravel that were formed by wave action of the contrasting shoreline levels of Lake Agassiz. The deltas consist of lenses of fine to coarse sand and are blown into dunes (USGS, 2006).

The dominant land use in the Wild Rice River watershed is row crop agriculture. According to the 2006 National Agricultural Statistical Services (NASS) land survey data, approximately 59 percent of the land is cropland, 16 percent is grassland, and 11 percent is in wetlands, the remaining 14 percent is either developed space, water, woods, barren, pasture, or in the conservation reserve program (CRP). The majority of the crops grown consist of corn soybeans, spring wheat, alfalfa, winter wheat, sunflowers and dry beans. Unpermitted animal feeding operations and "hobby farms" are also present in the Wild Rice River watershed, but their number and location are unknown.

TMDL Listings

Antelope Creek

A TMDL has been developed for a 40.73 mile segment (ND-09020105-005-S_00) of Antelope Creek, in Richland County, from its headwaters downstream to its confluence with the Wild Rice River as fully supporting, but threatened for recreational uses. The impairment is due to fecal coliform bacteria. The state of North Dakota has eliminated the fecal coliform bacteria standard and is only using the E.coli standard for bacteria. The North Dakota water quality standard for E. coli bacteria is a geometric mean concentration of 126 CFU/100 mL during the recreation season from May 1 to September 30. In addition, no more than ten percent of samples collected for E. coli bacteria should exceed 409 CFU/100 mL

The TMDL listed segment on the Antelope Creek is experiencing E. coli bacteria pollution from non-point sources in the watershed. Various sources include animal feeding operations (AFOs) and "hobby farms" with fewer than 100 animals in proximity to Antelope Creek, wildlife, and failing septic systems.

Livestock management BMPs are designed to promote healthy water quality and riparian areas through management of livestock and associated grazing land. Fecal matter from livestock, erosion from poorly managed grazing, land and riparian areas can be a significant source of E. coli bacteria loading to surface water. These specific BMPs are known to reduce nonpoint source pollution from livestock:

- Livestock exclusion from riparian areas
- Water well and tank development
- Prescribed grazing
- Manure Management System

Wild Rice River

A TMDL has been developed for a 53.4 mile segment (ND-09020105-009-S_00) of the Wild Rice River from Elk Creek (ND-09020105-010-S_00), downstream to its confluence with a tributary 3.5 miles NE of Great Bend, ND (ND-09020105-008-S_00). Each segment is not supporting recreational uses, because the impairments are due to fecal coliform bacteria. The state of North Dakota has eliminated the fecal coliform bacteria standard and is only using the E.coli standard for bacteria. The North Dakota water quality standard for E. coli bacteria is a geometric mean concentration of 126 CFU/100 mL during the recreation season from May 1 to September 30. In addition, no more than ten percent of samples collected for E. coli bacteria should exceed 409 CFU/100 mL.

The TMDL listed segments on the Wild Rice River are experiencing E. coli bacteria pollution from non-point sources in the watershed. Various sources include animal feeding operations (AFOs) and "hobby farms" with fewer than 100 animals in proximity to Antelope Creek, wildlife, and failing septic systems.

Livestock management BMPs are designed to promote healthy water quality and riparian areas through management of livestock and associated grazing land. Fecal matter from livestock, erosion from poorly managed grazing, land and riparian areas can be a significant source of fecal coliform bacteria loading to surface water. These specific BMPs are known to reduce nonpoint source pollution from livestock:

- Livestock exclusion from riparian areas
- Water well and tank development
- Prescribed grazing
- Manure Management System

A full copy of the Antelope Creek and Wild Rice River TMDL are posted on the North Dakota Department of Health web site at:
http://www.ndhealth.gov/WQ/SW/Z2_TMDL/default.htm.

WATERBODY IMPROVED

The listed segment that was improved by previous project efforts is a 38.6 mile portion of the Wild Rice River from its confluence with the Colfax watershed, downstream to its confluence with the Red River (ND-09020105-001-S_00).

The segment of Wild Rice River was first listed in North Dakota's 1998 303(d) TMDL list as fully supporting but threatened, for recreation due to fecal coliform bacteria.

With the implementation of watershed/water quality improvement project, best management practices were installed to improve livestock manure management and restore failed septic systems. Subsequently, the listed segment of the Wild Rice River has seen a decrease in E. coli bacteria counts and an improvement in water quality.

This is supported by the water quality data that show improved E. coli bacteria results that allowed the NDDoH to de-list the Wild Rice River (ND-09020105-001-S_00) in the 2014 Integrated Report. See attached non-point source program success story in Appendix 5.

The Richland Soil Conservation was proud to be featured in the publication distributed by the Environmental Protection Agency (EPA). Jennifer Klostreich was interviewed for success of the three EPA section 319 grants that have been administered in Richland County. An example of a diversion dike was featured in the report. The full report can be found at https://www.epa.gov/nps/highlights. See Appendix 5.

Stream Visual Assessment Conclusion: Riparian assessment concluded that out of 47 sampling sites, 60% were in poor condition and 40% were in fair condition. These assessments do point out a continued need for proper grazing use and pasture management. It also points out native plant communities provide superior protection in the riparian zone as opposed to tame or introduced plants. Land use management, which enhances native plant communities through proper utilization and season of use, will significantly improve the watersheds riparian health. On the ground technical assistance from a watershed conservationist is needed to assist land users in implementing resource management systems on their land. This assistance could be provided through an established watershed workgroup using a voluntary approach.

The riparian assessment also indicated primary sources of the NPS pollutants in sub watersheds are generally human influences such as excessive tillage, over fertilization, livestock water, human wastes, and construction are often the main contributors to the degradation of water quality and should be targeted for improvement. Some the largest sources of nonpoint pollution included low residue croplands. Failed private onsite sewage systems and livestock feeding areas are also a source for increased levels of ammonia, nitrate=nitrite, TON, and fecal coliform bacteria. But perhaps the single most overlooked factor affecting water quality is riparian area management. Riparian areas not only provide a buffer between cropland and the stream, they are critical to providing necessary stream habitat for aquatic organisms.

The Richland Soil Conservation District has the complete Stream Visual Assessment report for reference.

Red River Basin Decision Information Network/Water Quality Decision Support System

The Richland Soil Conservation District coordinated with the Wild Rice Soil Conservation District and The International Water Institute to develop a Water Quality Decision Support System (WQDSS) for the Wild Rice River Basin. The District is using the tool to set priority areas that have a higher potential for sedimentation or erosion along the Wild Rice River. See attached maps as an example of what the tool can do to help identify areas of concern. See Appendix 7.

3.0 PROJECT GOALS

3.1 **GOALS FOR THE PROJECT:** The primary goal of the project is to restore the recreational uses of the impaired reaches of Antelope Creek and the Wild Rice River to fully supporting status. As a secondary goal, the project will also protect and enhance the aquatic life use of Antelope Creek and the Wild Rice River through targeted implementation of BMP within or immediately adjacent to the riparian corridor.

A. OBJECTIVE: Hire staff to provide one-on-one conservation planning assistance to producers.

TASK 1: Employ a Watershed Coordinator and Administrative Assistant to assist producers/landowners with installation of BMP's in project area.

Output: 1 Watershed Coordinator (full time) and Administrative Assistant (6 hours a month).

Cost: $303,000 (includes 319 funds and 40% match)

B. OBJECTIVE: Reduce the E. coli bacteria concentrations at established monitoring sites to an annual geometric mean concentration of 126 CFU/100 mL during the recreation season from May 1 to September 30. In addition, no more than ten percent of samples collected for E. coli bacteria should exceed 409 CFU/100 mL for all TMDLs developed for Richland County.

TASK 2: Provide financial and technical assistance to producers to plan and install BMP's that will improve management on livestock feeding areas.

Output: Management improved on 2 partial Manure Management Systems; See attached BMP Budget Table for specific BMP costs and quantities.

Cost: $50,000 (includes 319 funds and 40% match)

TASK 3: Conduct follow up contacts to assist with conservation plan updates and monitor O & M of Section 319 cost shared practices. NRCS personnel will conduct quality review and compliance checks of BMPs that are designed by NRCS personnel. Local NRCS personnel will provide approved BMP standards and specifications from the NRCS technical guide.

Output: Database of BMPs applied

Cost: "Costs are included in the Task 1 cost."

TASK 4: Utilize the Wild Rice River Watershed Water Quality Decision Support System to further define the high priority areas in the watershed. This will assist in the prioritization process on a field level basis.

Output: Map showing the locations in priority areas

Cost: "Costs are included in the Task 1 cost."

TASK 5: Work with homeowners to identify septic systems that would be eligible for cost share under the guidelines for NPS pollution control best management practices.

Output: Assist 60 homeowners in identifying the potential to pollute our water bodies and assist them in moving forward with project to deal with septic waste in an appropriate manner.

Cost: "Costs are included in the Task 1 cost."

TASK 6: Coordinate the repair and/or replacement of 18 septic systems and assist homeowner to get required permit (On-site sewage disposal permit) thru the Richland County Health Department. These on-site sewage systems need to be located within one mile of the major waterways in Richland County. These waterways include: Antelope Creek and its tributaries, Wild Rice River and its tributaries, Bois de Sioux River and Red River.

Output: Assist in repair/replacement of 18 private septic systems that are a primary source of pollutant.

Cost: $180,000 (includes 319 funds and 40% match)

C. OBJECTIVE: Improve the vegetative condition of the riparian corridor as well as the buffering capabilities of adjacent cropland along portions of the Antelope Creek and the Wild Rice River.

TASK 7: Provide financial and technical assistance to producers/landowners to stabilize degraded waterways and establish annual (ie. Cover Crops) or perennial vegetative buffers on acres immediately adjacent to the creek or river.

Output: Restore 800 feet of grassed waterway, stabilize 1000 feet of streambank along the creek/river and 1991 acres of Cover Crop. See attached BMP Budget Table for estimated BMP costs and quantities.

Cost: $105,320 (includes 319 funds and 40% match)

D. OBJECTIVE: Increase the public understanding of the impacts of NPS pollution and potential solutions to NPS problems.

TASK 8: Organize and conduct scheduled I/E events focusing on NPS pollution control within agricultural areas and coordinate them with ongoing state/federally sponsored I/E programs.

Output: The RCSCD will sponsor 1 meetings/workshops with local cattle producers to discuss opportunities available through the partial manure management systems, annual cover crop/strip till demonstration, and continue to assist NDSU Extension with producer meetings pertaining to salinity and cover crops.

Cost: $4,000 (includes 319 funds and 40% match)

TASK 9: Prepare newsletter articles and/or direct mailings to local land users, general public, and media to promote the project and disseminate information on water quality and NPS pollution control. Information will be updated in a timely manner on the Richland Soil Conservation District website. www.richlandscd.com

Output: Minimum of (8) newsletters, news releases and direct mailings.

Cost: $4,000 (includes 319 funds and 40% match)

TASK 10: Complete annual and final project reports to update the GRTS. These will be provided NDDH, EPA, and all sponsors and interested individuals.

Output: Annual and 1 final report

Cost: "Costs are included in the Task 1 cost."

TASK 11*:* Continue partnering with Wild Rice SCD to operate the CCSP demonstration farm which is located in Oakes, to increase producer awareness of feasible cropland management options that will reduce erosion, improve soil health; minimize nutrient inputs; and protect water quality in the Wild Rice watershed.

Output: Annual tours; Information of success/failures of various cropping/tillage systems. Technical support for staff and producers.

Cost: $20,000 (includes 319 funds and 40% match)

3.2 See Milestone Table.

3.3 Permits: All necessary permits will be acquired. These may include CWA Section 404 permits. North Dakota State Historic Preservation Officer will be consulted as needed, regarding requirements relating to the protection of cultural resources. Project sponsors will work with NDDH to determine if National Pollution Elimination System permits are needed for the proposed livestock systems. The Richland County District Health Unit will issue an On-site sewage disposal permit for each privately owned septic system replaced in Richland County. This permit states installers will comply with all applicable county and township ordinances and the state law.

3.4 Richland County Soil Conservation District (RCSCD), and the Richland County Water Resource Board (RCWRB) are sponsoring this water quality project with RCSCD as the lead sponsor. The RCSCD has sponsored three other 319 projects. The RCSCD's annual and long range plans help to prioritize and guide the field service staff. The RCSCD has legal authorization to employ personnel and receive and expend funds. They have a track record for personnel management and addressing conservation issues for the constituency. The RCWRB is responsible for the management of water resources in Richland County. They will provide financial support for the project as well as assist the RCSCD in overseeing the project's progress. Other supporters include the Richland County Commission.

4.0 COORDINATION PLAN

4.1 This project is sponsored by the Richland County Soil Conservation District (RCSCD). The project partners will be: Richland County Water Resource Boards, Richland County Commissioners, Natural Resources Conservation Service, and ND County Extension Service.

1. Richland County Soil Conservation District (RCSCD) – The lead project sponsor is the RCSCD. The ND State Health Department will hold a Contract with the district. Land use assessment, BMP implementation (demonstration sites), project administration, computer entry, landowner contacts, water sampling, and water quality education will be the responsibility of the district.

2. USDA Natural Resources Conservation Service (NRCS) – The NRCS will provide day to day assistance in conservation planning, plan writing, contract writing, and technical assistance for construction and installation of planned BMPs. NRCS personnel will conduct quality review and compliance checks of BMPs that are designed by NRCS personnel. Local NRCS personnel will provide approved BMP standards and specifications from the NRCS technical guide. Standards and Specifications for approved BMPs will be provided by local NRCS personnel from the NRCS Technical Guide. Environment Quality Incentive Program funds will also be available in limited amounts. (NRCS will

provide assistance by facilitating local involvement and participating in educational outreach programs during the project period. An annual review will be conducted with ASTC (FO), DC, and the SCD to reconfirm and acknowledge NRCS's ability to commit to the project). Letter of support submitted.

3. North Dakota Department of Health (NDDH) – The NDDH will oversee 319 funding as well as provide training for proper water quality sample collection, preservation, and transportation to ensure reliable data is obtained. The NDDH will provide the sponsor oversight to ensure proper management and expenditures of Section 319 funds. They will assist NRCS and the Richland SCD personnel in review of O & M requirements for Section 319 funded BMP's.

4. The Richland County Health Department is responsible for issuing permits for installation of on-site septic systems. In August 2017 The Richland County Commission adopted an ordinance providing rules and regulations pertaining to the installation of residential on-site sewage systems. In reference to section VI of the Rules and Regulations governing the installation and use of on-site sewage disposal systems for Richland County, North Dakota. **"No person, firm, or corporation shall install, alter, repair, or extend any individual on-site sewage system in the county without first obtaining a permit from the designated officer."**

5. North Dakota Cooperative Extension Service (EXT) – To complement the project's information and education activities, local and state Extension personnel will contribute in-kind assistance. This will entail workshops and field tours. The specific role of EXT will be dependent on the type of information/education activity being implemented and availability of staff and materials.

6. Richland County Commission – The Richland County Commission will advisory input as well as promote the project. Letter of support submitted.

7. Richland County Water Resource Board (WRB) – Richland Water Resource Board will be involved in the project by acting as advisors. Richland WRB will contribute Technical assistance for the project and also promote the project in Richland County. Letter of support submitted

8. Outdoor Heritage Fund (OHF) – Additional funds have been leveraged from the OHF to install water quality improvements and streambank stabilization projects. $26,250 have been secured for projects in Richland County.

9. North Dakota Game & Fish Department (NDG&F) - Technical assistance will be provided to the project.

10. Sargent County Wild Rice River Watershed project-The Sponsor will provide an estimate of $50,000 Technical and "in-kind support" to the project. The Wild Rice SCD is the sponsor of the CCSP farm and is responsible for the administration and coordination of the project. The purpose of the CCSP farm is to educate producers and the general public on BMP practices to improve water quality and sustain the natural resource base. The sponsors of the Antelope Creek and Wild Rice Corridor 319 Project will work cooperatively with the CCSP farm to educate producers in both project areas on applicable BMP alternatives. The CCSP farm is located in the Oakes area and incorporates livestock and cover crops in the demonstration area.

11. Farm Services Agency (FSA) – Programs available through FSA will be pursued for cost share assistance.

12. US Fish and Wildlife (USF&W) – Programs and technical assistance available through USF&W will be pursued for project assistance.

13. International Water Institute (IWI) - Developed Water Quality Decision Support System (WQDSS) to help assist with prioritizing water quality improvement projects. IWI staff has assisted with training the watershed coordinator.

4.2 Letters of support are on file at the Richland County Soil Conservation District office. A list of those submitting letters of support can be found in Appendix 3.

5.0 EVALUATION AND MONITORING PLAN

The Quality Assurance Project Plan (QAPP) dated April 2013 will be followed for Phase IV. If any revisions are needed for Phase IV they will be written by the ND Department of Health.

6.0 BUDGET

6.1 See Appendix 1 for Budget Table Part 1 & 2.

7.0 PUBLIC INVOLVEMENT

7.1 The community will be informed of project updates and cost share opportunities in our semiannual newsletter and the Richland Soil Conservation District website. www.richlandscd.com

Appendix 1

Budget Table Part 1
Budget Table Part 2
Best Management Practices (BMP's)

ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT
BUDGET TABLE FOR PHASE IV

PART 1: FUNDING SOURCES	2018	2019	2020	2021	2022	TOTAL
EPA SECTION 319 FUNDS						
1) FY18 319 Funds (FA)	$ 30,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 430,000
Subtotals	***$ 30,000***	***$ 100,000***	***$ 100,000***	***$ 100,000***	***$ 100,000***	***$ 430,000***
OTHER FEDERAL FUNDS						
1) NRCS (TA)	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 25,000
2) NRCS EQIP & CSP (FA)	$ 125,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 1,125,000
4) State NDDH (200 samples/year: TSS, E. coli, Nutrient)	$ 5,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 45,000
5) United States Fish and Wildlife (TA)	$ 500	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 4,500
Subtotals	***$ 135,500***	***$ 266,000***	***$ 266,000***	***$ 266,000***	***$ 266,000***	***$ 1,199,500***
STATE/LOCAL MATCH						
1) Local SCD (FA)	$ 1,250	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 11,250
2) Outdoor Heritage Fund Grant (OHF) (FA)	$ 26,250	$ -	$ -	$ -	$ -	$ 26,250
3) Local SCD (TA)	$ 7,000	$ 14,100	$ 14,100	$ 14,100	$ 14,100	$ 63,400
4) Cooperative Extension (TA)	$ 750	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 6,750
5) Richland County Commissioners (TA)	$ 2,000	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 20,000
6) Richland County Water Resource Board (TA)	$ 7,500	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 67,500
7) Sargent County EPA-319 (TA-"in-kind support")	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 50,000
8) Richland County Participating Producers (FA)	$ 10,550	$ 35,025	$ 35,025	$ 35,025	$ 35,025	$ 150,650
Subtotals	***$ 65,300***	***$ 82,625***	***$ 82,625***	***$ 82,625***	***$ 82,625***	***$ 395,800***
TOTAL BUDGET	**$ 230,800**	**$ 448,625**	**$ 448,625**	**$ 448,625**	**$ 448,625**	**$ 2,025,300**

FA = Financial Assistance
TA = Technical Assistance
FSA = Farm Services Agency
SCD = Soil Conservation District
NDDH = North Dakota Department of Health Dept.
NRCS = Natural Resources Conservation Service

ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT BUDGET TABLE FOR PHASE IV									
PART 2: Section 319 / Non-Federal Budget Funds	**2018**	**2019**	**2020**	**2021**	**2022**	**TOTAL**	***FUNDING***		
							Cash Costs	**In-Kind Match***	**319 Cost Share**
OBJECTIVE A: Employee staff									
1) Salary/Fringe - Watershed Coordinator (full-time : 2080 hrs/ year; 2018 3 months)	$ 14,000	$ 56,000	$ 57,500	$ 59,000	$ 60,500	**$ 247,000**	**$ 49,400**	**$ 49,400**	**$ 148,200**
2) Salary/Fringe - Admin. Assistant (part-time 6 hours month; 2018 3 months)	$ 500	$ 1,800	$ 1,850	$ 1,900	$ 1,950	**$ 8,000**	**$ 1,600**	**$ 1,600**	**$ 4,800**
3) Travel - Mileage	$ 2,300	$ 9,000	$ 9,000	$ 9,000	$ 9,000	**$ 38,300**	**$ 7,660**	**$ 7,660**	**$ 22,980**
4) Equipment/Supplies ($30/mo.)	$ 90	$ 360	$ 360	$ 360	$ 360	**$ 1,530**	**$ 306**	**$ 306**	**$ 918**
5) Training (4 training sessions/yr.)	$ -	$ 750	$ 750	$ 750	$ 750	**$ 3,000**	**$ 600**	**$ 600**	**$ 1,800**
1) Equipment costs (ie.meters,gauges,etc.)	$ -	$ 500	$ 500	$ 500	$ 500	**$ 2,000**	**$ 400**	**$ 400**	**$ 1,200**
2) Sample Transportation (coolers, postage, tape, etc.)	$ -	$ 800	$ 800	$ 800	$ 800	**$ 3,200**	**$ 640**	**$ 640**	**$ 1,920**
3) Land Use Inventory (Computer Hardware & Software)	$ -	$ 1,000	$ 1,000	$ 1,000	$ 1,000	**$ 4,000**	**$ 800**	**$ 800**	**$ 2,400**
6) Telephone/Postage (12/mo @ $100/mo.)	$ 300	$ 1,200	$ 1,200	$ 1,200	$ 1,200	**$ 5,100**	**$ 1,020**	**$ 1,020**	**$ 3,060**
Subtotals	*$ 17,190*	*$ 71,410*	*$ 72,960*	*$ 74,510*	*$ 76,060*	***$ 312,130***	***$ 62,426***	***$ 62,426***	***$ 187,278***
OBJECTIVES B: Reduce E. coli concentrations									
1) Manure management system - (2 Partial fencing, well and tank and seeding)	$ -	$ 20,054	$ 20,054	$ 20,054	$ 20,054	**$ 80,216**	**$ 16,043**	**$ 16,043**	**$ 48,130**
2) Septic System Replacement and well decommissioning	$ 21,000	$ 42,500	$ 42,500	$ 42,500	$ 42,500	**$ 191,000**	**$ 38,200**	**$ 38,200**	**$ 114,600**
Subtotals	*$ 21,000*	*$ 62,554*	*$ 62,554*	*$ 62,554*	*$ 62,554*	***$ 271,216***	***$ 54,243***	***$ 54,243***	***$ 162,730***

PART 2: Section 319 / Non-Federal Budget Funds	2018	2019	2020	2021	2022	TOTAL	FUNDING		
							Cash Costs	In-Kind Match*	319 Cost Share
OBJECTIVE C: Improve riparian corridor									
1) Buffers, cover crops, grassed waterways	$ 5,320	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 105,320	$ 21,064	$ 21,064	$ 63,192
Subtotals	*$ 5,320*	*$ 25,000*	*$ 25,000*	*$ 25,000*	*$ 25,000*	*$ 105,320*	*$ 21,064*	*$ 21,064*	*$ 63,192*
OBJECTIVE D: Information/Education									
1) Information/Education Meetings	$ -	$ 500	$ 500	$ 500	$ 500	$ 2,000	$ 400	$ 400	$ 1,200
2) Field Tours	$ -	$ 500	$ 500	$ 500	$ 500	$ 2,000	$ 400	$ 400	$ 1,200
3) CCSP Support Tasks	$ -	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 20,000	$ 4,000	$ 4,000	$ 12,000
4) Newsletters (2 mailings)	$ -	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 4,000	$ 800	$ 800	$ 2,400
Subtotals	*$ -*	*$ 7,000*	*$ 7,000*	*$ 7,000*	*$ 7,000*	*$ 28,000*	*$ 5,600*	*$ 5,600*	*$ 16,800*
TOTAL 319/NON-FEDERAL BUDGET	**$ 43,510**	**$ 165,964**	**$ 167,514**	**$ 169,064**	**$ 170,614**	**$ 716,666**	**$ 143,333**	**$ 143,333**	**$ 430,000**

ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT
PART 3: Selected Best Management Practices (BMPs)

Land Use Code	NRCS Code	Practice	No.	Acres	Linear Feet (LF)	*Rate*	TOTAL	FUNDING		
								Cost-share Rate	Total Costs	319 Cost Share
4		Partial Manure Management Systems	2			*$ 25,000.00*	$ 50,000	60%	$ 20,000	**$ 30,000**
1	340	Cover Crop (seed cost only)		1,991		*$ 20.00*	$ 39,820	60%	$ 15,928	**$ 23,892**
2, 3, 4	382	Fencing			5,049	*$ 1.80*	$ 9,088	60%	$ 3,635	**$ 5,453**
1	393	Filter Strip		140		*$ 125.00*	$ 17,500	60%	$ 7,000	**$ 10,500**
1	410	Grade Stabilization Structure	4			*$ 2,000.00*	$ 8,000	50%	$ 3,200	**$ 4,000**
1	412	Grassed Waterway		0	800	*$ 25.00*	$ 20,000	50%	$ 8,000	**$ 10,000**
1	590	Nutrient Management		100		*$ 27.00*	$ 2,700	60%	$ 1,080	**$ 1,620**
3	550	Range Planting (seeding)		250		*$ 40.00*	$ 10,000	60%	$ 4,000	**$ 6,000**
4	19	Septic System Renovation	18			*$ 10,000.00*	$ 180,000	60%	$ 72,000	**$ 108,000**
4	584	Stream Channel Stabilization			1,000	*$ 10.00*	$ 10,000	60%	$ 4,000	**$ 6,000**
4	580	Streambank & Shoreline Protection			1,000	*$ 10.00*	$ 10,000	60%	$ 4,000	**$ 6,000**
2, 3	614	Trough & Tank	4			*$ 1,000.00*	$ 4,000	60%	$ 1,600	**$ 2,400**
1,4	351	Well Decommissioning	10			*$ 1,100.00*	$ 11,000	60%	$ 4,400	**$ 2,160**
1, 4	380	Windbreak/Shelterbelt Establishment			1,968	*$ 2.25*	$ 4,428	60%	$ 1,771	**$ 2,657**
		SUBTOTALS	**38**	**2,481**	**9,817**		**$ 376,536**		**$ 150,614**	**$ 218,682**

Land Use Codes: 1 = Cropland 2 = Pasture Hayland 3 = Rangeland 4 = Farmstead/Misc

$105,320	Buffers, cover crops, grassed waterways
$80,216	Livestock Manure management
$191,000	Septic System and Well Decommissioning

Appendix 2

Milestone Table

MILESTONE TABLE FOR ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENTATION PROJECT PHASE IV

GOALS FOR THE PROJECT:

The primary goal of the project is to restore the recreational uses of the impaired reaches of Antelope Creek and the Wild Rice River to fully supporting status. As a secondary goal, the project will also protect and enhance the aquatic life use of Antelope Creek and the Wild Rice River through targeted implementation of BMP's within or immediately adjacent to the riparian corridor.

The following partners provide assistance on the tasks under each objective listed on this table:

Group 1 - **Natural Resources Conservation Service** - Provide technical assistance for developing and carrying out the project.

Group 2 **- Richland Co. Soil Conservation District -** Assist in providing guidance documents, training, and local program management.

Group 3 - **Richland Co. Water Resource Boards** - Assist in providing guidance on water resource issues within the county and to promote.

Group 4 - **Richland Co. Commissioners** - Assist in coordinating and promoting the project within the county.

Group 5 - **North Dakota State Health Department -** Section 319 program management including oversight of 319 planning and expenditures.

Group 6 - **North Dakota Game & Fish** - Provide technical assistance for developing and carrying out the project.

MILESTONE TABLE FOR ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT

TASK/RESPONSIBLE ORGANIZATIONS	OUTPUT	QTY	2018	2019	2020	2021	2022
Objective A: *Hire staff to provide one-on-one conservation planning assistance to producers.*							
Task 1 - Employ a Watershed Coordinator and Administrative Assistant to assist producers/landowners with installation of BMP's in project area. Group # 2, 5	Watershed Coordinator &Admin Assistant	1					

Group 1 - Natural Resources Conservation Service
Group 2 - Richland Co. Soil Conservation District
Group 3 - Richland Co. Water Resource Boards
Group 4 - Richland Co. Commissioners
Group 5 - North Dakota State Health Department
Group 6 - North Dakota Game & Fish

MILESTONE TABLE FOR ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT																					
TASK/RESPONSIBLE ORGANIZATIONS	OUTPUT	QTY	2018				2019				2020				2021				2022			
Objective B: *Reduce the E. coli bacteria concentrations at established monitoring sites to an annual geometric mean of less than 200 CFU/100 mL, with less than 10% of the samples exceeding 400 CFU/100 mL and/or E. coli bacteria geometric mean concentrations of less than 126 CFU/100 mL and less than 10% of the samples exceeding 409 CFU/100 mL for all TMDLs developed for Richland County.*																					
Task 2 - Provide financial and technical assistance to producers to plan and install BMP's that will improve management on livestock feeding areas. Group # 1, 2, 5	Installed BMPS (see "Part 3: Selected BMPs")	On-going																			
Task 3 - Conduct follow up contacts to assist with conservation plan updates and monitor O & M of Section 319 cost shared practices. NRCS personnel will conduct quality review and compliance checks of BMPs that are designed by NRCS personnel. Local NRCS personnel will provide approved BMP standards and specifications from the NRCS technical guide. Group # 1, 2	Database of BMPs applied	On-going																			
Task 4 - Utilize the Wild Rice River Watershed Water Quality Decision Support System to further define the high priority areas in the watershed. Group # 2,5	Map of Priority areas	On-going																			
Task 5 - Work with homeowners to identify septic systems that would be eligible for cost share under the guidelines for NPS pollution control best management practices. Group # 2, 5	Conduct one on one meeting with homeowners to establish if they qualify	On-going																			
Task 6 - Coordinate the repair and/or replacement of 18 septic systems and assist homeowner to get required permit (On-site sewage disposal permit) thru the Richland County Health Department. These on-site sewage systems need to be located within one mile of the major waterways in Richland County. These waterways include: Antelope Creek and its tributaries, Wild Rice River and its tributaries, Bois de Sioux River and Red River. Group # 2, 5	Installed BMPS (see "Part 3: Selected BMPs")	18																			
Group 1 - Natural Resources Conservation Service											**Group 4 - Richland Co. Commissioners**										
Group 2 - Richland Co. Soil Conservation District											**Group 5 - North Dakota State Health Department**										
Group 3 - Richland Co. Water Resource Boards											**Group 6 - North Dakota Game & Fish**										

MILESTONE TABLE FOR ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT							
TASK/RESPONSIBLE ORGANIZATIONS	**OUTPUT**	**QTY**	**2018**	**2019**	**2020**	**2021**	**2022**
Objective C: *Improve the vegetative condition of the riparian corridor as well as the buffering capabilities of adjacent cropland along portions of the Antelope Creek and the Wild Rice River.*							
Task 7 - Provide financial and technical assistance to producers/landowners to stabilize degraded riparian areas and establish annual (ie. Cover Crops) or perennial vegatative buffers on acres immediately adjacent to the creek or river. Group # 1, 2, 5	Install BMPs (see "Part 3: Selected BMPs)	On-going					

Group 1 - Natural Resources Conservation Service
Group 2 - Richland Co. Soil Conservation District
Group 3 - Richland Co. Water Resource Boards
Group 4 - Richland Co. Commissioners
Group 5 - North Dakota State Health Department
Group 6 - North Dakota Game & Fish

MILESTONE TABLE FOR ANTELOPE CREEK WATERSHED AND THE RIPARIAN CORRIDOR OF THE WILD RICE RIVER IMPLEMENATION PROJECT																					
TASK/RESPONSIBLE ORGANIZATIONS	**OUTPUT**	**QTY**	**2018**				**2019**				**2020**				**2021**				**2022**			
Objective D: *Increase the public understanding of the impacts of NPS pollution and potential solutions to NPS problems.*																					
Task 8 - Organize and conduct scheduled I/E events focusing on NPS pollution control within agricultural areas and coordinate them with ongoing state/federally sponsored I/E programs. Group # 1, 2, 3, 4, 6	1 meetings with cattle producers, cover crop tour and ladies ag night	15																			
Task 9 - Prepare newsletter articles and/or direct mailings to local land users, general public, and media to promote the project and disseminate informtion on water quality and NPS pollution control. Group # 1, 2	2 newsletters per year. Articles in local media when needed	8																			
Task 10 - Complete annual and final project reports to update the GRTS. These will be provided NDDH, EPA and all sponsors and interested individuals. Group # 2	annual progress report each year and final report	5																			
Task 11 - Continue partnering with Wild Rice SCD to operate the CCSP demonstration farm, which is located in Oakes to increase producer awareness of feasible cropland management options that will reduce erosion, improve soil health; minimize nutrient inputs; diversify crop rotations and protect water quality in Wild Rice watershed. Group # 2	Assist with annual field day, have 2 Richland County residents serve as board members on CCSP board	On-going																			

Group 1 - Natural Resources Conservation Service
Group 2 - Richland Co. Soil Conservation District
Group 3 - Richland Co. Water Resource Boards
Group 4 - Richland Co. Commissioners
Group 5 - North Dakota State Health Department
Group 6 - North Dakota Game & Fish

Appendix 3

Letters of Support

- **USDA Natural Resources Conservation Service**
- **Richland County Administration (Commission)**
- **Southeast Water Users**
- **Richland County Water Resource District**

USDA

United States Department of Agriculture

Natural Resources
Conservation Service

Wahpeton Field Office

1687 Bypass Road
Wahpeton
ND 58075-3100
Voice 701.642.5997

September 7, 2017

Jennifer Klostreich
Watershed Coordinator
Richland County Soil Conservation District
1687 Bypass Road
Wahpeton, ND 58075

Dear Jennifer,

Your application for **Phase IV of the Antelope Creek Wild Rice River Corridor Project** is within the scope of our NRCS mission: to assist private agricultural landowners to implement conversation pratices on private lands through a voluntary approach.

Your goals for water quality improvements and soil erosion reduction efforts through BMP's such as Well Decommissioning, Streambank Restoration, Filter Strips, Grade Stablization Structures, Cover Crops, and replacement of existing Septic Systems will help to conserve our precious natural resources in Richland county (and beyond).

The Wahpeton NRCS Field Office is in full support of your application for **Phase IV of the Antelope Creek Wild Rice River Corridor Project**. This project will not only continue our current partnership, but it will also allow us to continue to build upon our momentum to provide technical and financial assistance throughout Richland County. With support for your project, we can continue to expand our reach by "Helping People Help the Land".

Sincerely,

Jason H. Hanson
District Conservationist

United States Department of Agriculture
Natural Resources Conservation Service
1687 Bypass Road
Wahpeton, ND 58075
(701) 642-5997 Ext. 3

http://www.nd.nrcs.usda.gov

RICHLAND COUNTY ADMINISTRATION
418 2ND AVE N
WAHPETON ND 58075
701-642-7700
Fax: 701-642-7701

September 19, 2017

Jennifer Klostreich
Watershed Coordinator
Richland County Soil Conservation District
1687 Bypass Road
Wahpeton ND 58075

Dear Ms. Klostreich,

On behalf of the Richland County Commission, I would like to express the Board's support for Phase IV of the EPA 319 grant in Richland County. The Board has supported the Richland County Soil Conservation District with previous grants.

The Board appreciates any help that is available with water quality efforts in Richland County, whether it is education of our residents or installing best management practices for water quality through the local EPA 319 project.

Sincerely,

Nathan Berseth
Chairman, Richland County Commission

SOUTHEAST WATER USERS

PO Box 10
MANTADOR, ND 58058
PHONE (701) 242-7432 • TOLL FREE (800) 400-8888
FAX (701) 242-7807 • EMAIL: sewu@rrt.net

September 7, 2017

Watershed Coordinator
Richland Soil Conservation District
1687 Bypass Road
Wahpeton ND 58075

Dear Soil Conservation District:

Southeast Water Users District (SEWUD) is in total support of the 319 project that has been operating in Richland County over the past 11 years including this year's Phase IV. SEWUD stands behind and promotes any projects or measures that are used to improve water quality, conserve water or protect our current aquifers for future generations.

SEWUD acknowledges the importance of quality and elite management practices to those who protect our resources. We currently supply a clean water source to a number of Pasture Taps to rural farmsteads who are using the rural water to feed livestock.

Our mission statement says: "It is the mission of Southeast Water Users District to provide all of our member/owners the highest quality of water and service at the most affordable price possible. For now and well into the future."

Thanks you for your time.

Sincerely,

Steve Hansen
General Manager

SH/df

RICHLAND COUNTY
WATER RESOURCE DISTRICT

MANAGERS:
Gary Friskop, Chr. (Wahpeton)
Arv Burvee, Vice Chr. (Fairmount)
James Haugen (McLeod)
Don Moffet (Barney)
Robert Rostad (Colfax)

SECRETARY /TREASURER:
Monica Zentgraf
(701)642-7773 (Phone)
(701)642-6332 (Fax)
mzentgraf@co.richland.nd.us (E-mail)

CIVIL TECHNICIAN:
Justin Johnson
(701)642-7835 (Phone)
justinj@co.richland.nd.us (E-mail)

September 19, 2017

Jennifer Klostreich
Watershed Coordinator
Richland County Soil Conservation District
1687 ByPass Road
Wahpeton, ND 58075

RE: EPA 319 Grant

Dear Ms. Klostreich,

On behalf of the Richland County Water Resource Board, I would like to express the Board's support for the EPA 319 Grant in Richland County. The Board has been happy to work with the Richland County Soil Conservation District in the previous phases of the grant.

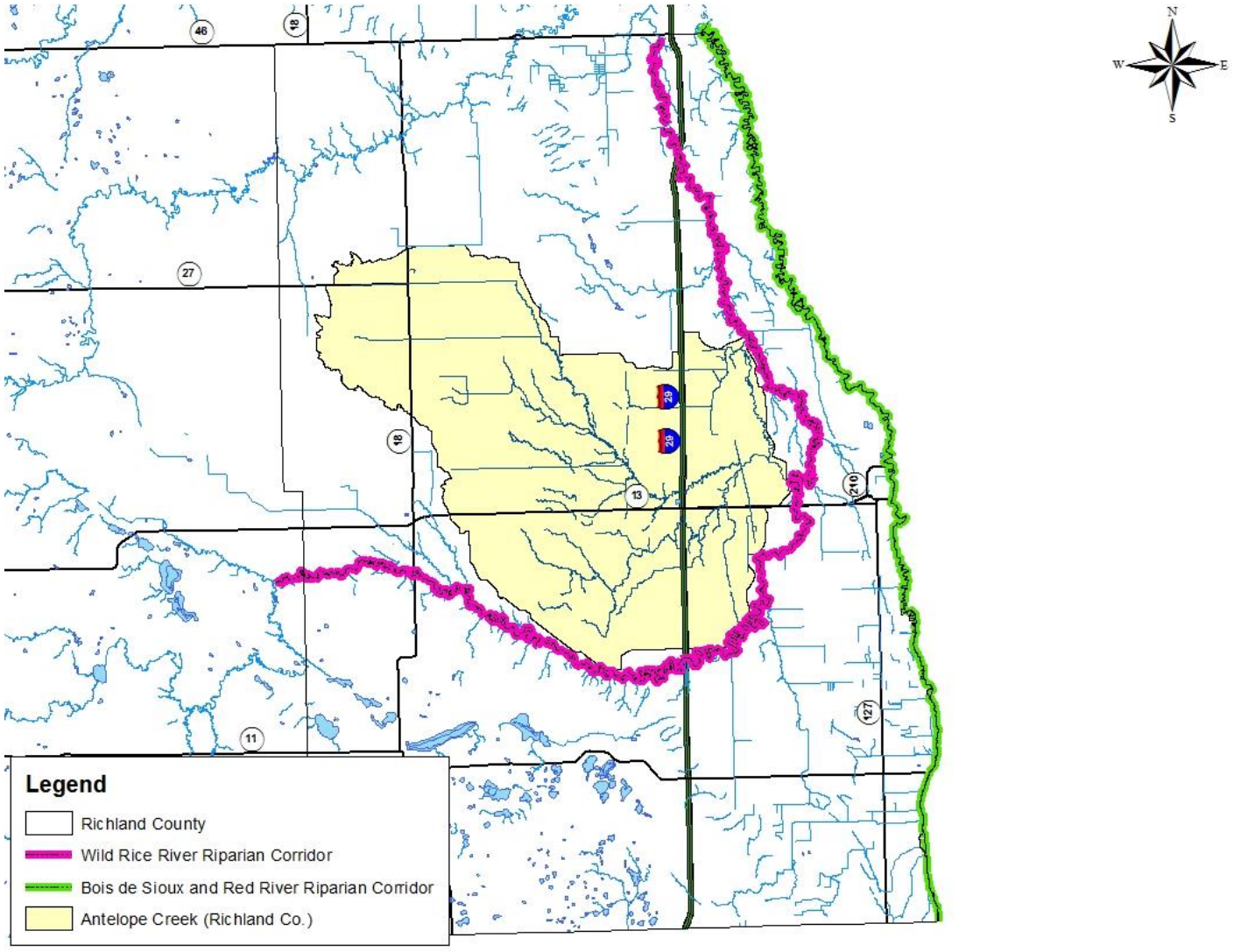
The Board appreciates having someone in the County who can assist with education and implementation of Best Management practices which will improve our water quality. Water quality affects everyone and we are pleased to have a successful project in Richland County.

Sincerely,

Gary Friskop
Chairman

Appendix 4

Project Map


N
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Legend
Richland County
Wild Rice River Riparian Corridor
Bois de Sioux and Red River Riparian Corridor
Antelope Creek (Richland Co.)

Appendix 5

Phase I, II and III Accomplishments

De-listing Wild Rice River (ND-09020105-001-S_00)

EPA – Report on Highlights featuring Richland County

Phase I Accomplishments

Engineering Services – Preconstruction	1 system
Septic System Renovations	95 systems
Waste Management System (Phase I & II)	1 system
Well Decommissioning	11 units

Phase II Accomplishments

Partial Manure Management System	1 system
Septic System Renovations	51 systems
Well Decommissioning	30 units
Misc. practice backhoe for decommissioning	2 units
Cover Crop	1888 acres
Cross fencing pasture	1645 feet
Perimeter Fencing (Ag Waste)	12,690 feet
Pipeline	300 feet
Solar Pumps	3 solar panels/pump
Water Tanks	3 tank
Well for Livestock	2 wells

Phase III Accomplishments

Cover Crop	2640 acres
Cultural Resource Review	1 unit
Septic System Renovations	31 systems
Well Decommissioning	23 units
Riparian Area Management	1 unit
Riparian Herbaceous Cover	2.5 acres

Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
North Dakota

Recreational Use Attained Through Best Management Practice Implementation and Targeted Technical Assistance

Waterbody Improved

Runoff from agricultural lands and septic systems led to high bacteria levels in North Dakota's Wild Rice River. As a result, North Dakota added the Wild Rice River to its 1998 Clean Water Act (CWA) section 303(d) list of impaired waters for having its recreation designated use threatened due to fecal coliform bacteria. Best management practices were installed to improve livestock manure management and restore failed septic systems in the watershed. Subsequent samples showed reduced bacteria levels in the listed segment of the Wild Rice River and the segment was taken off the CWA section 303(d) list in 2014.

Problem

The Wild Rice River drains 1.43 million acres in Dickey, Sargent, Ransom, Richland, and Cass counties in southeastern North Dakota, and Marshall and Roberts counties in northeastern South Dakota. It is a sub-watershed of the larger Upper Red River Watershed (hydrologic unit code [HUC] 09020105). The listed segment of concern is a 38.6-mile portion of the Wild Rice River from its confluence with the Colfax watershed, downstream to its confluence with the Red River (segment ND-09020105-001-S _ 00).

Watershed assessments by the Richland County Soil Conservation District (SCD) and Cass County SCD determined that pasture and rangeland, degraded riparian areas, livestock concentration areas and hobby farms in close proximity to the river could be negatively affecting water quality in the Wild Rice River. The watershed coordinator also cited improperly functioning individual septic systems as a major contributor to water quality problems.

North Dakota's water quality standards for fecal coliform bacteria require geometric means during any consecutive 30-day period in the swimming season (May 1 to September 30) to be less than 200 colony-forming units per 100 milliliters of water (cfu/100 mL), with no more than 10 percent of those monthly samples higher than 400 cfu/100mL. A sample collected by North Dakota in June 1993 at the STORET 380031 sampling station had a fecal coliform bacteria count of 700 cfu/100mL. Therefore, in 1998 the Wild Rice River was listed as having its recreational designated use threatened due to fecal coliform bacteria. Subsequent sampling during the watershed assessment (2002–2005) supported that listing (Figure 2).

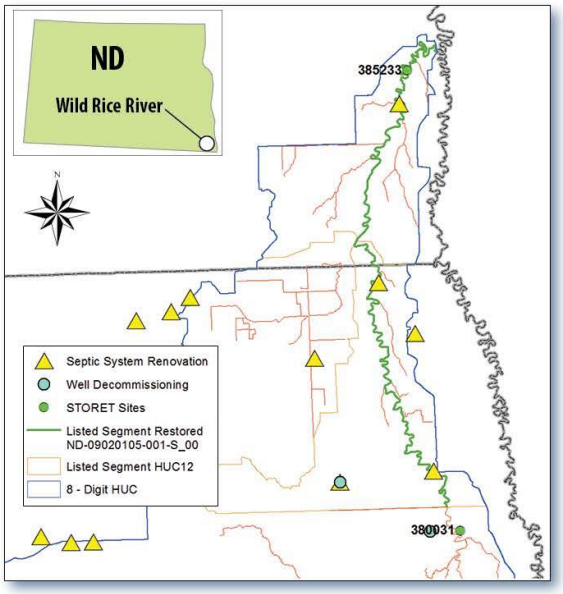


Figure 1. North Dakota's Wild Rice River is in southeastern North Dakota. Partners installed numerous best management practices, including agricultural projects that are not indicated on map.

Project Highlights

In 2006 the Richland County SCD developed a watershed project implementation plan to restore the recreational uses of the Wild Rice River. As a secondary goal, the project would also protect and enhance the aquatic life use of Antelope Creek and the Wild Rice River. As a part of this plan, through partnerships with local landowners and homeowners, seven septic system renovations and one well decommissioning have been completed within the 12-digit HUCs associated with the listed segment. Restoration practices completed from 2007 to present within the entire Wild Rice River watershed included 136 septic systems renovated, 31 wells decommissioned, 868 acres of cover crop planted, 12,690 feet of perimeter fencing installed, one watering facilitated constructed and one partial livestock waste management system installed.

Results

In 2009 North Dakota's bacteria standard changed to *Escherichia coli*. The new standard requires that geometric means during any consecutive 30-day period during the swimming season are less than 126 cfu/100 mL, and that no more than 10 percent of the samples exceed 409 cfu/100 mL. Based on the most recent data, these standards were met (see Figure 2). These results allowed the North Dakota Department of Health (NDDoH) to de-list the Wild Rice River (segment ND-09020105-001-S _ 00) in the 2014 Integrated Report for bacterial impairment.

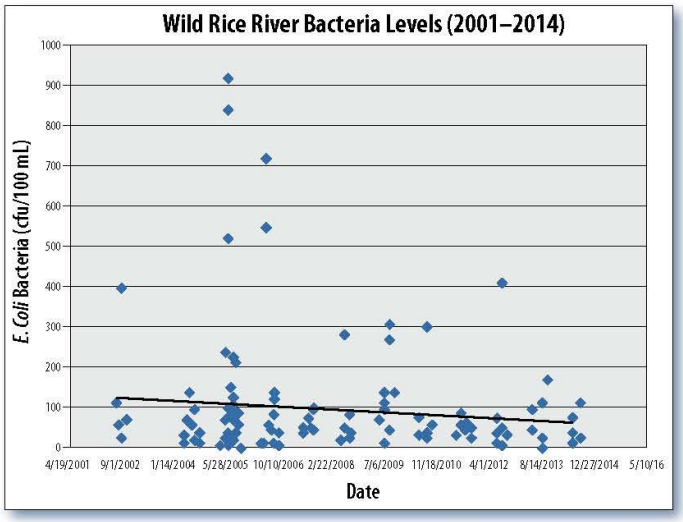


Figure 2. Post-restoration water quality data at STORET sampling site 385233 indicate that the Wild Rice River meets bacteria water quality standards. The line indicates declining bacteria levels over time. Dots represent individual sampling events.

Partners and Funding

In 2002 the Richland County SCD, along with NDDoH, initiated a project to assess water quality and land use conditions within the Wild Rice River watershed. The Richland County SCD also led the development of the 2006 Wild Rice River watershed project implementation plan. The SCD hired staff to assist producers and homeowners in the watershed with the development of contracts and delivery of technical assistance for the implementation of best management practices. In addition, project staff works closely with partners at the federal, state and local levels to achieve the goals of the watershed implementation project.

The U.S. Environmental Protection Agency granted $45,486 in CWA section 319 funding that was matched by $30,324 in local funds (cash and in-kind services) from local individuals to cost-share renovations within the 12-digit HUCs of the listed segment. The NDDoH provided oversight for project management; developed the quality assurance project plan and conducted training for proper water quality sample collection. NDDoH also assisted with development and implementation of information and education activities. Public involvement has been encouraged and maintained through various workshops, newsletters and presentations provided to community groups.

U.S. Environmental Protection Agency
Office of Water
Washington, DC

EPA 841-F-15-001B
January 2015

For additional information contact:

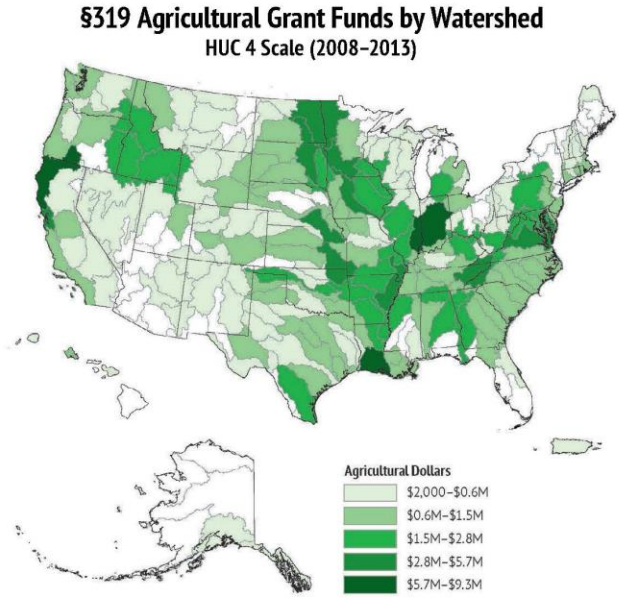
Jennifer Klostreich, Richland Soil Conservation District
jen.klostreich@nd.nacdnet.net
Greg Sandness, North Dakota Department of Health
701-328-5232 • gsandnes@nd.gov
Eric Steinhaus, North Dakota Watershed Coordinator, Region 8
303-312-6837 • steinhaus.eric@epa.gov

EPA 841-R-16-009

National Nonpoint Source Program

—a catalyst for water quality improvements

A REPORT ON HIGHLIGHTS OF THE §319 PROGRAM



Source: USEPA Grants Reporting and Tracking System[9]

As shown on the maps on pages 10 and 11, the §319 funds awarded for agriculture and silviculture broadly align with two of the country's major land uses—farms and forests.

Richland Soil Conservation District

Installing a vegetated diversion dike reduces soil erosion, holds the soil in place, and reduces flooding in crop fields.

The Faces of Success

Donny Latiolias, Capital Resource Conservation & Development Council, Louisiana

"Little Silver Creek would not have been removed from the list of impaired waters without Section 319 funding which covered 34 percent of the cost of grain drills, pasture renovators, and aerator equipment for producers to lease from a local co-op," says Donny Latiolias, watershed coordinator with the Capital Resource Conservation & Development Council. Landowners saw the benefits of this equipment immediately. One even noted that when it rained after his first time using the pasture renovator, he could see the water infiltrating the soil instead of standing on the surface and making its way downhill to local waterbodies as it had done in the past.

Jennifer Klostreich, Richland Soil Conservation District, North Dakota

Jennifer Klostreich has used funding from three §319 grants to upgrade many older septic systems in addition to improving agricultural practices that were causing high bacteria levels in the Wild Rice River. "Whether it's a new farming practice or a septic system upgrade, the Nonpoint Source Program gives landowners the little bit of a push they need to try something new," says Klostreich.

"The 319 program helps us guide people through the process of making a change and ultimately, making that change become the new status quo."

Appendix 6

303(d) TMDL List

Table VI-2. 2016 List of Section 303(d) TMDL Waters for the Red River Basin in North Dakota.

Assessment Unit ID	AU Description	AU Size	Designated Use	Use Support	Impairment	TMDL Priority	5A
ND-09020101-001-S_00	Bois De Sioux River from the ND-SD border, downstream to its confluence with the Rabbit River on MN side. Located in the SE corner of Richland County.	13.08 Miles					
			Fish and Other Aquatic Biota	Fully Supporting, but Threatened			
					Combination Benthic/Fishes Bioassessments	L	Yes
					Sedimentation/Siltation	L	Yes
ND-09020101-002-S_00	Bois De Sioux River from its confluence with the Rabbit River (MN), downstream to its confluence with the Ottertail River. Located on the Eastern border of Richland County.	15.32 Miles					
			Fish and Other Aquatic Biota	Fully Supporting, but Threatened			
					Sedimentation/Siltation	L	Yes
					Benthic-Macroinvertebrate Bioassessments	L	Yes
			Recreation	Fully Supporting, but Threatened			
					Escherichia coli	H*	No
ND-09020104-001-S_00	Red River of the North from its confluence with the Ottertail River downstream to its confluence with the Whiskey Creek on the MN side. Located in Eastern Richland	27.33 Miles					
			Fish Consumption	Not Supporting			
					Methylmercury	L	No
			Recreation	Fully Supporting, but Threatened			
					Escherichia coli	H*	No
ND-09020104-002-S_00	Red River of the North from its confluence with Whiskey Creek, downstream to its confluence with the Wild Rice River. Located in NE Richland and SE Cass Counties.	52.28 Miles					
			Fish Consumption	Not Supporting			
					Methylmercury	L	No
ND-09020104-003-S_00	Red River of the North, from its confluence with the Wild Rice River, downstream to the 12th Ave bridge in Fargo, ND (just upstream from Moorhead, MN waste water discharge). Eastern Cass County.	21.56 Miles					
			Fish Consumption	Not Supporting			
					Methylmercury	L	No
ND-09020104-004-S_00	Red River of the North, from the 12th Ave N. bridge in Fargo, ND downstream to its confluence with the Sheyenne River. Eastern Cass County.	20.04 Miles					
			Fish Consumption	Not Supporting			
					Methylmercury	L	No

*High priority waterbody/pollutant combination targeted for TMDL development or alternative plan in the next two years.

Table VI-2 (con't). 2016 List of Section 303(d) TMDL Waters for the Red River Basin in North Dakota.

Assessment Unit ID	AU Description	AU Size	Designated Use	Use Support	Impairment	TMDL Priority	5A
ND-09020104-005-S_00	Red River of the North from its confluence with the Sheyenne River, downstream to its confluence with the Buffalo River on the MN side of the border. Located in NE Cass	10.45 Miles					
			Fish Consumption	Not Supporting			
					Methylmercury	L	No
ND-09020105-001-S_00	Wild Rice River from its confluence with the Colfax Watershed, downstream to its confluence with the Red River Of The North. Located in NE Richland and SE Cass	38.58 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Sedimentation/Siltation	L	Yes
					Oxygen, Dissolved	L	No
					Combination Benthic/Fishes Bioassessments	L	Yes
ND-09020105-002-L_00	Mooreton Pond	36.8 Acres					
			Fish and Other Aquatic Biota	Not Supporting			
					Total Dissolved Solids	L	No
ND-09020105-003-S_00	Wild Rice River from its confluence with a tributary about 3.6 miles NE of Great Bend, ND downstream to its confluence with the Colfax Watershed. Located in Eastern Richland County.	47.49 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Combination Benthic/Fishes Bioassessments	L	Yes
					Sedimentation/Siltation	L	Yes
					Oxygen, Dissolved	L	No
			Recreation	Fully Supporting, but Threatened			
					Escherichia coli	H*	No
ND-09020105-005-S_00	Antelope Creek, in Richland County, from its headwaters downstream to its confluence with the Wild Rice River.	44.48 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Sedimentation/Siltation	L	Yes
					Benthic-Macroinvertebrate Bioassessments	L	Yes
			Recreation	Fully Supporting, but Threatened			
					Escherichia coli	H*	No

*High priority waterbody/pollutant combination targeted for TMDL development or alternative plan in the next two years.

Table VI-2 (con't). 2016 List of Section 303(d) TMDL Waters for the Red River Basin in North Dakota.

Assessment Unit ID	AU Description	AU Size	Designated Use	Use Support	Impairment	TMDL Priority	5A
ND-09020105-009-S_00	Wild Rice River from Elk Creek (ND-09020105-010-S_00), downstream to its confluence with a tributary 3.5 miles NE of Great Bend, ND (ND-09020105-008-S_00). Located in South Central Richland County.	53.44 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Oxygen, Dissolved	L	No
					Sedimentation/Siltation	L	Yes
ND-09020105-010-S_00	Elk Creek, including all tributaries. Located in SE Ransom, NE Sargent, and West Central Richland Counties.	26.05 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Combination Benthic/Fishes Bioassessments	L	Yes
ND-09020105-012-S_00	Wild Rice River from its confluence with Shortfoot Creek (ND-09020105-016-S_00) downstream to its confluence with Elk Creek (ND-09020105-010-S_00).	45.68 Miles					
			Fish and Other Aquatic Biota	Not Supporting			
					Sedimentation/Siltation	L	Yes
					Combination Benthic/Fishes Bioassessments	L	Yes
			Recreation	Not Supporting			
					Escherichia coli	H*	No
ND-09020105-014-S_00	Unnamed tributary to the Wild Rice River (ND-09020105-012-S_00) located near Milnor, ND in NE Sargent County.	25.25 Miles					
			Recreation	Not Supporting			
					Escherichia coli	H*	No
ND-09020105-016-S_00	Shortfoot Creek from its confluence with the Wild Rice River upstream to the ND-SD border, including all tributaries.	24.78 Miles					
			Recreation	Not Supporting			
					Escherichia coli	H*	No
ND-09020105-017-S_00	Unnamed tributaries to the Wild Rice River (ND-09020105-015-S), including Crooked Creek.	43.5 Miles					
			Recreation	Not Supporting			
					Escherichia coli	H*	No
ND-09020105-018-S_00	Wild Rice River from its confluence with the Silver Lake Diversion downstream to Lake Tewaukon.	20.09 Miles					
			Recreation	Not Supporting			
					Escherichia coli	H*	No

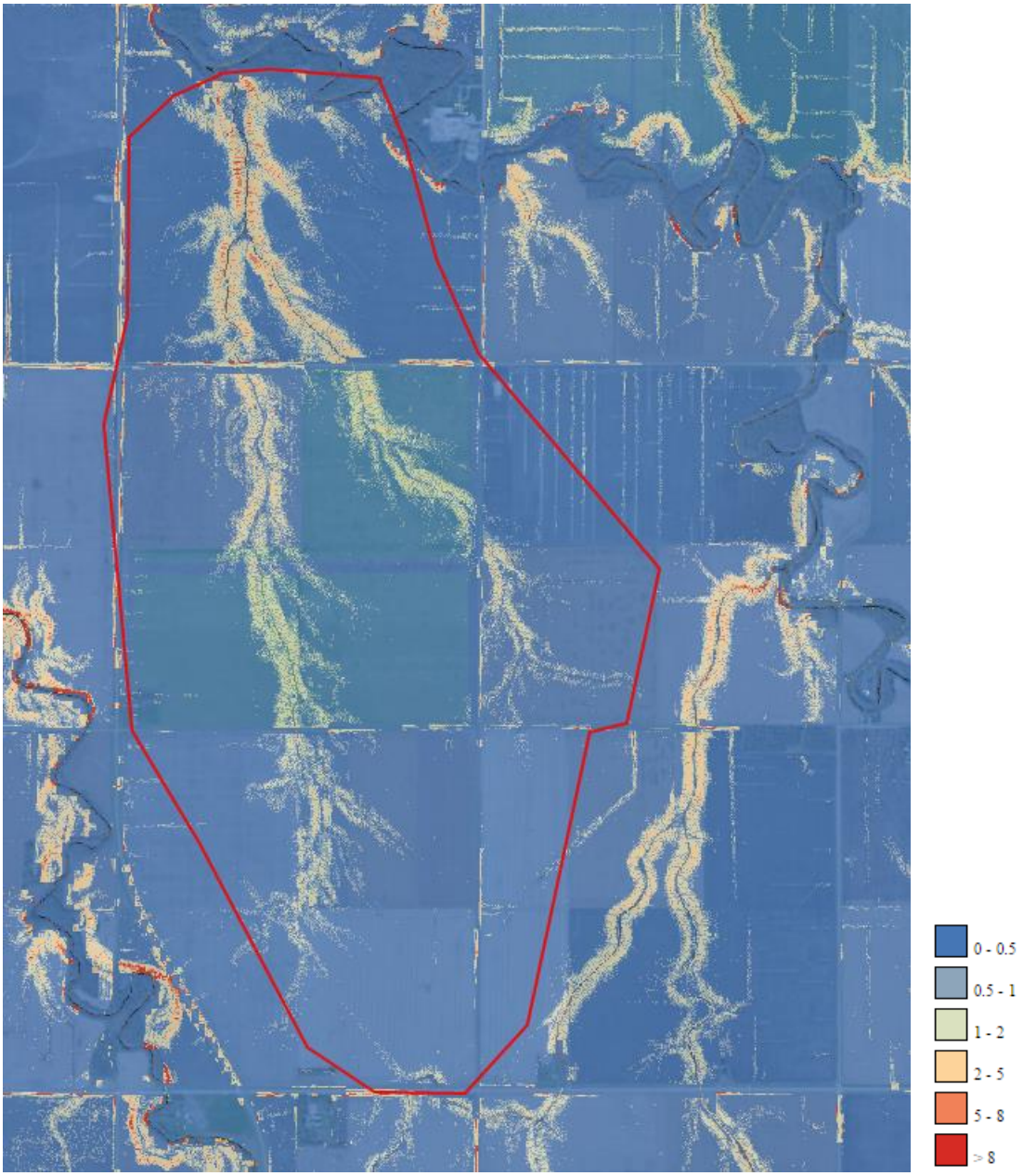
*High priority waterbody/pollutant combination targeted for TMDL development or alternative plan in the next two years.

Appendix 7

Red River Basin Decision Information Network Maps

Sediment yield loading to catchment outlet in tons/acre/year

Wild Rice River, Richland County



Sediment load ranking to catchment outlet

Wild Rice River, Richland County