Environment and Natural Resources Trust Fund

2022 Request for Proposal

General Information

Proposal ID: 2022-221

Proposal Title: Mustinka River Fish and Wildlife Habitat Corridor Rehabilitation

Project Manager Information

Name: Jamie Beyer

Organization: Bois de Sioux Watershed District

Office Telephone: (320) 563-4185

Email: bdswd@runestone.net

Project Basic Information

Project Summary: The Mustinka River Fish and Wildlife Habitat Corridor project will permanently rehabilitate a 5-mile straightened reach of the Mustinka River to a naturally functioning stream channel and floodplain.

Funds Requested: $3,025,000

Proposed Project Completion: November 30 2024

LCCMR Funding Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

Project Location

What is the best scale for describing where your work will take place?

Region(s): Central

What is the best scale to describe the area impacted by your work?

Region(s): Central, NW,

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

The Mustinka River is a tributary to Lake Traverse, forming the headwaters to the Red River of the North within the Lake Agassiz Glacial Plain (i.e., Red River Valley). Flooding and water quality are major regional issues in the Red River Valley. The Mustinka River is located within the Bois de Sioux Watershed District, which plans and implements watershed improvement projects as part of a flood damage reduction strategy. An 1896 State project and 1950s Army Corps of Engineers project converted approximately 43 miles of natural, sinuous river channel and floodplain to approximately 25 miles of straightened drainage channel without a functional riparian corridor. This straightened channel became known as Judicial Ditch 14. These past projects exacerbated flooding and water quality issues along the Mustinka and downstream areas. The downstream reach of the Mustinka River frequently experiences high flows that break out of this altered watercourse, causing widespread damage to roads, agricultural lands, and structures. Additionally, agricultural practices have eliminated significant native prairie and wetlands, causing the loss of habitat and connectivity throughout the region.

What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.

Over the last decade, extensive project development, stakeholder input, agency collaboration, regulatory review, and funding partnerships have been accomplished for the project. Through a public legal proceeding, the BdSWD established this project under 103D in 2016. Extensive watershed, river, and fluvial geomorphology modeling and attention to natural stream processes have been used to inform project design, which considered hydrology and sediment load. Project design focuses on long-term channel stability and incorporation of natural enhancements. This project will rehabilitate 5 miles of the channelized and straightened Mustinka River to create over 8 miles of functioning riparian corridor. The rehabilitated corridor will provide flood reduction and water quality benefits, while creating aquatic and native upland habitat. A 300 foot wide, 260-acre floodplain corridor will be created, along with construction of an 8-mile long meandering channel that mimics a natural stream, including the use of natural vegetative bank stabilization measures and specific placement of pools and rock riffles for fish migration enhancement. Approximately 34 acres of wetland and 226 acres of native upland areas will be created along the stream channel and associated floodplain.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

Rehabilitation of the Mustinka River is a unique opportunity to create and permanently provide significant fish and wildlife habitat enhancements to a predominantly agricultural area known for its extensive altered hydrology. The project will contribute to the local and regional flood damage reduction and water quality improvement efforts for the Mustinka River and downstream waterbodies. The project will create 34 acres of wetland habitat and 226 acres of native riparian and upland habitat within a new floodplain corridor. The project lands have already been acquired by the BdSWD, offer permanent protection and public access for recreation.

Activities and Milestones

Activity 1: Restoration of Mustinka River Corridor

Activity Budget: $2,650,000

Activity Description:
A new 300-foot wide, 260-acre floodplain corridor will be constructed in the footprint of the historic Mustinka River, and Judicial Ditch 14 will no longer serve as the primary conveyance channel. The rehabilitation corridor will be constructed as a two-stage channel that consists of a low-flow meandering channel within a larger, channel and floodplain corridor. The channel was designed to maximize long-term stability to prevent degradation, aggradation and migration. The channel will be planted with native seed mixes to establish vegetation. Outer bends will be further stabilized using natural toe wood and vegetated reinforced slope stabilization measures to prevent channel migration. Pools and rock hammerheads will be placed to mimic natural stream habitat and promote fish migration. Wetlands will be created adjacent to the low flow channel.

Activity Milestones:

Description	Completion Date
Create floodplain corridor	June 30 2023
Create low-flow meandering channel within constructed corridor	November 30 2024
Bioengineered structural practices for long-term river stability	November 30 2024

Activity 2: Restore / Create Wetland Function within Constructed Corridor

Activity Budget: $100,000

Activity Description:
Wetland basins will be created within a defined reach of the rehabilitation project. This designated reach has been specifically designed to ensure constructed basins will have the greatest extent of wetland function and value. Additional wetland characteristics may eventually develop within other portions of the corridor as well. A site-specific plan has been developed for this reach with guidance from USACE staff and input from BWSR staff. The goal is to develop approximately 34 acres of Type 2 wet meadow or Type 3 shallow marsh wetland communities. In order to ensure the greatest success, the plan includes a Restrictions and Covenants document to limit use of this stretch, signage to mark project boundaries, a site-specific planting and management plan, use of observation piezometers with data loggers to measure water levels, annual monitoring plan and an adaptive management strategy to ensure successful establishment. Once established, the wetlands will provide water quality benefits and habitat for a variety of species.

Activity Milestones:

Description	Completion Date
Excavation of wetland basins	December 31 2023
Field Monitoring	October 31 2024

Activity 3: Establishment of Native Vegetation

Activity Budget: $250,000

Activity Description:
A native vegetation establishment and management plan has been developed based on concepts in the MN Conservation Prairie Plan. Native seed mixes have been selected following the BWSR Native Vegetation Establishment

and Enhancement Guidelines. The rehabilitation plan has established three distinct planting zones based on soil, geology, topography and intended habitat function. Vegetation establishment will be monitored according to the operation and maintenance plan to determine when the target plant communities have become established throughout the corridor. Upon establishment of the plant communities, the corridor will be brought to full hydrologic function. The established native vegetation will provide habitat for upland species and establish native plant communities that could potentially benefit pollinator species, which is currently lacking in this area and region.

Activity Milestones:

Description	Completion Date
Native Vegetation Establishment: Floodplain and Low-Flow Channel	November 30 2024
Native Vegetation Establishment: Upland Buffer	November 30 2024
Field Monitoring	November 30 2024

Activity 4: Project Management and Grant Administration

Activity Budget: $25,000

Activity Description:
Project management and grant administration will include completing all requirements of the ENRTF. This activity will include fiscal oversight of project expenditures, management of consultant and contractor contracts, and required reporting and evaluation of progress.

Activity Milestones:

Description	Completion Date
Project evaluation following approved methods	November 30 2024
Complete annual progress reporting requirements	November 30 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Moore Engineering Inc	Moore Engineering Inc	Moore Engineering Inc. is the appointed District Engineer responsible for project design, coordination and implementation of the project.	No

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?

ENRTF will provide the necessary funds to construct the project via a public bid process. Following project construction, ongoing monitoring will be required to ensure that the project meets the standards of the site-specific restoration management plan. Sustainability and maintenance of this river rehabilitation is required by watershed district law (M.S. 103D). Long-term maintenance and management will be the responsibility of the BdSWD and funded through agricultural lease agreements from farmlands within a nearby impoundment owned by the District. Several funding partners (i.e., local, regional and state) are also included in the development and construction of this project.

Project Manager and Organization Qualifications

Project Manager Name: Jamie Beyer

Job Title: District Administrator

Provide description of the project manager's qualifications to manage the proposed project.

Jamie Beyer has served at the pleasure of the BdSWD Board of Managers as the District Administrator since 2016. The District Administrator is responsible for carrying out the actions of the Board, fiscal management of the organization, and project coordination with District staff and consultants. Ms. Beyer has extensive experience working with state and federal funding programs and associated requirements, implementing flood damage reduction, water quality, and natural resources enhancement projects, and managing staff, the Board, and consultants to successful plan, design, and implement large-scale, water resources projects. The BdSWD is leading the project development and engineering of this project with full collaboration with a watershed-based "project team" composed of landowners and representatives of local, state, and federal agencies.

Organization: Bois de Sioux Watershed District

Organization Description:

The Bois de Sioux Watershed District is a special purpose unit of government operating under MN Statute 103D, for the purpose of conserving natural resources of the state by land use planning, flood control, and other conservation projects. The BdSWD is also a public drainage authority responsible for administering Chapter 103E drainage systems under its jurisdiction in accordance with all applicable current laws.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
District Administrator		BdSWD District Administrator fiscal oversight and contract management for the project as well as coordination of all project activities.			0%	0.3		$25,000
							Sub Total	**$25,000**
Contracts and Services								
To Be Determined via Public Bid Process	Professional or Technical Service Contract	Contracted services for construction of the project secured through the public bidding process. Includes, construction of the corridor, low flow-channel and wetland basins, spoil bank leveling, erosion control, water quality BMPs for side inlets and road crossings, and vegetation establishment.				0		$3,000,000
							Sub Total	**$3,000,000**
Equipment, Tools, and Supplies								
							Sub Total	**-**
Capital Expenditures								
							Sub Total	**-**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								
							Sub Total	**-**

Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$3,025,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
Cash	Outdoor Heritage Fund (OHF)	Excavation of river rehabilitation floodplain and meandering channel, topsoil stripping and replacement, seeding, construction of road crossings, and misc.	Secured	$2,440,000
Cash	BWSR Clean Water Fund - Project and Practices Competitive Grant Program	Excavation of river rehabilitation floodplain and meandering channel, topsoil stripping and replacement, seeding, construction of road crossings, and misc.	Potential	$800,000
Cash	MN DNR Flood Hazard Mitigation	Hauling of excavated material from river mitigation project and construction of Redpath impoundment levees.	Potential	$3,500,000
			State Sub Total	**$6,740,000**
Non-State				
Cash	Red River Water Management Board Clean Water Grant (RRWMB CWG)	Excavation of river rehabilitation floodplain and meandering channel, topsoil stripping and replacement, seeding, construction of road crossings, and misc.	Pending	$800,000
Cash	Bois de Sioux River Watershed District Construction Funds	Engineering, construction inspection, and misc. construction activities.	Secured	$1,200,000
Cash	Fargo-Moorhead Diversion Authority	Hauling of excavated material from river mitigation project and construction of Redpath impoundment levees.	Pending	$1,800,000
Cash	Red River Water Management Board Flood Damage Reduction (RRWMB FDR)	Hauling of excavated material from river mitigation project and construction of Redpath impoundment levees.	Pending	$3,500,000
			Non State Sub Total	**$7,300,000**
			Funds Total	**$14,040,000**

Acquisition and Restoration

Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
Parcel 1	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition.Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	25.58	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 10	Grant	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	33.94	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 13	Grant	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	38.8	-	-	Public	Bois de Sioux Watershed District	Has not begun

Parcel 2	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	25.21	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 3	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	49.32	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 4	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	45.42	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 5	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow	Restoration	46.65	-	-	Public	Bois de Sioux Watershed District	Has not begun

		meandering channel, created and natural wetlands, and native prairie plant communities.							
Parcel 6	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	62.27	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 7	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	41.56	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 8	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor. Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.	Restoration	60.13	-	-	Public	Bois de Sioux Watershed District	Has not begun
Parcel 9	Traverse	This parcel has been acquired by the BdSWD for the purposes of this project. No ENRTF funds are proposed for acquisition. Site of proposed Mustinka River Fish and Wildlife Habitat Corridor.	Restoration	19.54	-	-	Public	Bois de Sioux Watershed District	Has not begun

		Existing land use is agricultural. Future condition will consist of functional floodplain corridor with low flow meandering channel, created and natural wetlands, and native prairie plant communities.							
Totals				**448.42**	**0**	**-**			

Restoration

1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.
The BdSWD has already acquired ownership of all necessary lands for project construction through its authorities under MN Statute 103D. Lands will be permanently protected and open to the public for outdoor recreation.

2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.
The project has three main components: channel and riparian corridor rehabilitation, wetland creation, and native vegetation establishment. The expected outcomes include flood damage reduction, water quality improvements to the river and downstream waterbodies, aquatic habitat creation, native upland habitat, fishery benefits, and public outdoor recreation land. The rehabilitated river channel and floodplain will provide contiguous wildlife habitat, wetlands, and native vegetation in an area that has been in agricultural production for over 100 years. Ongoing monitoring and adaptive management will ensure the project is successful for its intended purposes for future generations. The design plans, management plans, and other relevant project plans are kept on file at the BdSWD office in Wheaton, MN and also by the BdSWD consultant, Moore Engineering, Inc. Overall strategies for long-term plan implementation have been outlined in the plans, and includes monitoring and management of the project and dedicated funding sources for annual project maintenance by BdSWD staff and their consultants.

3. Describe how restoration efforts will utilize and follow the Board of Soil and Water Resources "Native Vegetation Establishment and Enhancement Guidelines" in order to ensure ecological integrity and pollinator enhancement.
BdSWD worked with Minnesota Native Landscapes to develop a native seeding, monitoring and management plan for the rehabilitation corridor. All restoration design components have followed the BWSR Native Vegetation Establishment and Enhancement Guidelines to determine target plant communities, seed selection, establishment methods and overall management strategies. Site-specific monitoring plans have been developed following this guidance. Habitat and native vegetation establishment is also consistent with goals in the MN Prairie Conservation Plan.

4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.
The project has been designed with long-term stability in mind which has been documented in plans that will direct construction and maintenance of the project. The BdSWD staff and its consultants will ensure the successful establishment of the project through monitoring and adaptive management. Sustainability and maintenance of this project is the responsibility of the BdSWD as required by watershed district law (Minnesota Statutes 103D). Long-term maintenance and management needs will be funded from income generated from agricultural lease agreements on farmlands within a nearby impoundment owned by the BdSWD. Maintenance and management funds are available from the BdSWD's "Construction and Maintenance Fund" which receives an annual contribution through the membership with the Red River Watershed Management Board.

5. Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.
BdSWD will annually review project needs as these will likely vary each year. The BdSWD will contact the Minnesota Conservation Corps regional manager to determine if the needs of the project can be met by an available field crew in a given year.

6. Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or

elsewhere.

For the first three years, project site monitoring will occur monthly during the growing season to determine native vegetation establishment. Adaptive management will be used to document and determine methods to address poor establishment, weed control, and other potential issues. Annual monitoring will continue in years 3-5 to document weed populations and any areas of poor establishment. Adaptive management will focus on practices to suppress undesirable weed growth and increase desired species diversity. Practices may include controlled burns, grazing management, mowing or haying. Monitoring results will be compiled. The monitoring results will be used to evaluate whether the project has been successful in improving the parcel and meeting desired project outcomes, identify potential problems areas and corrective measures, and summarize findings for potential future restorations.

Attachments

Required Attachments

Map

File: 7e1dfa9f-4d5.pdf

Alternate Text for Map

Map of the overall project area including the proposed Mustinka River Rehabilitation Corridor located within Grant and Traverse Counties. Map identifies parcels impacted by the project which have been acquired by the BdSWD. Map provides a 3D view of a section of the proposed corridor and low-flow, meandering channel....

Board Resolution or Letter

Title	File
BdSWD Letter Authorizing Application	de4383ef-86e.pdf

Optional Attachments

Support Letter or Other

Title	File
Financial Statement	2ebd7f1d-470.pdf
Certificate of Survey showing affecting parcels	7cf4172c-9d5.pdf
Red River Basin Commission Support Letter	381f40d7-3e5.pdf
Red River Watershed Management Board_Support Letter	5bf26659-3ad.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

Yes: Restoration,

Does your project have potential for royalties, copyrights, patents, or sale of products and assets?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

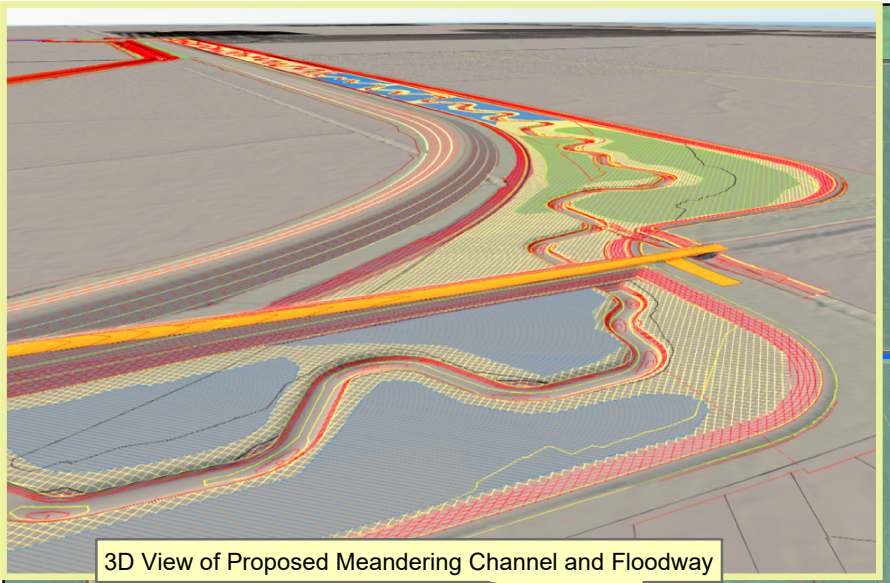
N/A

Does your project include original, hypothesis-driven research?

Yes

Does the organization have a fiscal agent for this project?

Yes, Bois de Sioux Watershed District



3D View of Proposed Meandering Channel and Floodway

GORTON

Grant County

JD 14 (Channalized Mustinka River)

Construction Limits

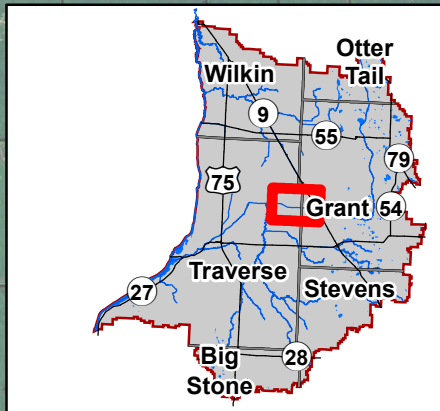
JD-14 Mustinka River

Mustinka River Rehabilitation Corridor

Proposed Redpath Impoundment Project

Split Flow Structures (Project Construction Limits)

Traverse County



Mustinka River Fish and Wildlife Habitat Corridor Rehabilitation Project Location
Bois de Sioux Watershed District, MN

Created By: KTH Date Created: 02/26/18 Date Saved: 04/02/21 Date Plotted: 03/14/16 Date Exported: 04/02/21
Plotted By: james.guler Parcel Date: NA Aerial Image: Elevation Data: Lidar
Horizontal Datum: NAD 1983 HARN Adj MN Traverse Feet Vertical Datum: NAVD1988
T:\Projects\18300\18325\18325_Redpath_LCCMR.mxd

N W E S

0 1,750 3,500 7,000 Feet

1 in = 3,500 feet

Bois de Sioux Watershed District