Lessard-Sams Outdoor Heritage Council

Mud River Enhancement Phase II

Laws of Minnesota 2027 Accomplishment Plan

General Information

Date: 10/16/2026

Project Title: Mud River Enhancement Phase II

Funds Recommended: $3,200,000

Legislative Citation:

Appropriation Language:

Manager Information

Manager's Name: Tammy Audette
Title: Administrator
Organization: Red Lake Watershed District
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City: Thief River Falls, MN 56701
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Location Information

County Location(s): Marshall.

Eco regions in which work will take place:

Forest / Prairie Transition

Activity types:

Enhance

Restore

Priority resources addressed by activity:

Wetlands

Narrative

Abstract

The Mud River drains thousands of acres of agricultural lands before flowing into the Agassiz National Wildlife Refuge (NWR). ML 2026 successfully began Phase I of this project. ML 2027-Phase II is intended to acquire full funding and complete 100% of the goals of the project, and provide 372 additional acres of riparian habitat. Both Phases I and II will bring riparian benefits back to a 6-mile segment of the original channel by restoring natural function.

Design and Scope of Work

Altered hydrology, flashiness, and incoming sediment from the Mud River watershed has multiple, harmful effects on the NWR. These include wetland bounce, attributed to runoff events during the nesting season which have negative effects on many waterfowl species, loss of meandered riparian habitat for species associated with this habitat type, deterioration of habitat quality as sediment accumulates in wetlands that then become infested with invasive cattail, increased flood impacts as sediment displaces storage volume within the NWR pools, rapid increases in and periodic spikes in turbidity levels in the Thief River when releases of water transfer sediment out of the NWR.

The project was developed using the Flood Damage Reduction Project Work Team approach. This team included Federal, State and Local units of government and both upstream and downstream stakeholders. Alternatives were developed, discussed and consensus reached on the preferred alternative. Project engineering focused on enhancing a six (6) mile segment of an abandoned natural stream. This project will direct at least 80% of the Mud River flow to the enhanced channel, returning it to a functioning state with natural meanders, base flow, low flow channel connected with the floodplain, and a design based on fluvial geomorphic principals. Habitat improvements will include restoring a diverse plant community along the floodplain gradient from emergent wetland vegetation up to forested margins.

The proposed Project consists of a diversion structure at the upstream end, a sinuous excavated two stage channel with low flow channel that conveys a 1 to 2 year design flow and a floodplain bench where needed to convey the 10-year flow. Also included is placement of spoil piles to add topographic variability and provide for increased vegetative diversity. The existing ditches will remain in place with the new channel providing increased flow capacity as compared to existing conditions. The recommended option allows the 10-year event to spread out across the floodplain as compared to being confined to the straightened ditch system. By allowing the flow to spread out there is a decrease in downstream peak flow from 675 cubic feet per second (cfs) to 575 cfs (15% reduction).

For ML 2027 the Project Work Team has considered additional design elements after further analysis, the need to include a large box culvert at the downstream end of the project, which is reflected in the overall cost of the project. In this Phase II request we are also accounting for inflation, resulting in a higher anticipated cost.

Explain how the plan addresses habitat protection, restoration, and/or enhancement for fish, game & wildlife, including threatened or endangered species conservation

Ditching in the early 1900's straightened the historic flow patterns of this watershed and separated a historic channel from its water source. The result was wetland destruction, increased flow into the water conveyance systems and increased erosion and transportation of sediment downstream.

This project will provide a water feature within the wildlife refuge that meets the purpose for which the refuge was established and, continues to maintain the function of the water conveyance for the watershed and improving wildlife habitat on both a local, state, and national level. By returning natural stream geomorphology to a segment of the Mud River, fish and wildlife species will benefit from the restoration of base flow and by returning a natural sinuous wetland and stream type to the wildlife refuge. The alteration of riparian wetland systems that occurred over 100-years ago, were constructed to facilitate efficient removal of water from the landscape. Straight, linear conveyance systems were, and still remain, an efficient method of draining wetland habitat, effecting many fish and wildlife species. This project is supported by the Thief River One Watershed One Plan and complements other best management practices being implemented in the watershed to improve fish and wildlife habitat, improve water quality and reduce effects of flooding. By restoring meandering wetland characteristics to the landscape, resident populations of reptiles, amphibians and mammals will utilize the newly provided habitat. A wide representation of migratory birds, from wading and shore birds to passerine species up to waterfowl will make use of the diversity of habitat types this project will provide. With North American bird populations having experienced a 30% decrease since 1970, habitat enhancement projects, such as the Mud River Enhancement Project will help address this loss.

What are the elements of this plan that are critical from a timing perspective?

Private land acquisition has been one of the most challenging tasks in the development of conservation projects. With appropriate funding, this project is ready for final design and implementation as it is located within the Elm Lake WMA and Agassiz NWR, eliminating the need for land acquisition. This project can be a showcase example of the positive impact that wetland and stream restoration can have on building climate resiliency into habitat management. The current RLWD Board of Managers and the MN DNR WMA, and NWR Managers are supportive of the project, and they will bring important community support required to accomplish and maintain the project goals.

Describe how the plan expands habitat corridors or complexes and/or addresses habitat fragmentation:

By nature, streams and rivers are the original corridors providing travel pathways that connect various habitat types and provide population and species migration on a spatial scale. These interchange/exchanges of wildlife and habitat are what historically sustained strong, healthy populations of plants and animals in Minnesota. The linear habitat that replaced our natural stream and river corridors in the early 1900's due to ditching forever disrupted and fragmented this historic natural system. This project will restore a six-mile segment of the historic Mud River corridor, providing meandered habitat that eliminates the long sight lines of traditional man-made ditches that adds to disturbance and predation.

Meandering waterways provide the intimate and secretive setting that is critical to wildlife during the breeding and nesting seasons. This project will restore a natural corridor and the function of how wildlife historically utilized it.

Which top 2 Conservation Plans referenced in MS97A.056, subd. 3a are most applicable to this project?

North American Waterfowl Management Plan

U.S. Fish and Wildlife Service Strategic Habitat Conservation Model

Which LSOHC section priorities are addressed in this program?

Forest / Prairie Transition

Protect, restore, and enhance habitat for waterfowl, upland birds, and species of greatest conservation need

Outcomes

Programs in forest-prairie transition region:

Increased waterfowl and upland bird migratory and breeding success ~ *Meandering waterways provide the intimate and secretive setting that is critical to wildlife during the breeding and nesting seasons. This project will restore a natural corridor and the function of how wildlife historically utilized it. By restoring 6 miles of riparian habitat several species of birds and mammals will once again be able to use this historic corridor. Water quality and quantity monitoring will be conducted to determine project benefits. Wildlife and vegetation response will be monitored by both the USWFS and the MnDNR.*

Per MS 97A.056, Subd. 24, Please explain whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose.

The Mud River Enhancement Project has not requested funding from sources other than LSOHC. This request does not supplant nor substitute funds from other previous local, state, or federal funding sources.

How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended?

This project is located entirely on State WMA and Federal Refuge lands. The MnDNR and USFWS will maintain these habitats to provide for the purposes for which these lands were acquired.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2030+	FWS Agassiz Refuge	Species Monitoring	Reporting	-
2030+	RLWD	Annual Water Quality Monitoring	Reporting	-
2029+	FWS Agassiz Refuge	Annual Inspection	Vegetation monitoring	Reporting - Repairs

Provide an assessment of how your program celebrates cultural diversity or reaches diverse communities in Minnesota, including reaching low- and moderate-income households:

The Project will provide: Free public access hunting near a population center (cities of Thief River Falls, Grygla, Gatzke, Middle River) No-cost access to wildlife viewing. Outreach to tribal authorities on natural resource benefits is on-going.
Project Partners plan additional education outreach on the cultural significance and history of the area.

Activity Details

Requirements

If funded, this program will meet all applicable criteria set forth in MS 97A.056?
Yes

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program?
Yes

Is the restoration and enhancement activity on permanently protected land per 97A.056, Subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 or on lands to be acquired in this program?
Yes

Where does the activity take place?

Refuge Lands

WMA

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program, either by the proposer or the end owner of the property, outside of the initial restoration of the land?
No

Will insecticides or fungicides (including neonicotinoid and fungicide treated seed) be used within any activities of this program either in the process of restoration or use as food plots?
No

Timeline

Activity Name	Estimated Completion Date
Construction	July 1, 2029
Planning, design and permitting	July 1, 2027

Date of Final Report Submission: 10/01/2030

Availability of Appropriation: Subd. 7. Availability of Appropriation
(a) Money appropriated in this section may not be spent on activities unless they are directly related to and necessary for a specific appropriation and are specified in the accomplishment plan approved by the Lessard-Sams Outdoor Heritage Council. Money appropriated in this section must not be spent on indirect costs or other institutional overhead charges that are not directly related to and necessary for a specific appropriation. Money appropriated for fee title acquisition of land may be used to restore, enhance, and provide for public use of the land acquired with the appropriation. Public-use facilities must have a minimal impact on habitat in acquired lands.
(b) Money appropriated in this section is available as follows:
(1) money appropriated for acquiring real property is available until June 30, 2031;
(2) money appropriated for restoring and enhancing land acquired with an appropriation in this section is available for four years after the acquisition date with a maximum end date of June 30, 2035;
(3) money appropriated for restoring or enhancing other land is available until June 30, 2032;
(4) notwithstanding clauses (1) to (3), money appropriated for a project that receives at least 15 percent of its funding from federal funds is available until a date sufficient to match the availability of federal funding to a maximum of six years if the federal funding was confirmed and included in the original approved draft accomplishment plan; and
(5) money appropriated for other projects is available until the end of the fiscal year in which it is appropriated.

Budget

Budget reallocations up to 10% do not require an amendment to the Accomplishment Plan.

Totals

Item	Funding Request	Leverage	Leverage Source	Total
Personnel	-	$155,000	RLWD, MnDNR, USFWS	$155,000
Contracts	$3,000,000	$500,000	RLWD	$3,500,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	$200,000	-	-	$200,000
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$3,200,000**	**$655,000**	**-**	**$3,855,000**

Personnel

Position	Annual FTE	Years Working	Funding Request	Leverage	Leverage Source	Total
Technician	0.2	3.0	-	$50,000	RLWD	$50,000
Refuge Manager	0.1	3.0	-	$40,000	USFWS	$40,000
Wildlife Manager	0.1	3.0	-	$35,000	MnDNR	$35,000
Administrator	0.1	3.0	-	$30,000	RLWD	$30,000

Amount of Request: $3,200,000
Amount of Leverage: $655,000
Leverage as a percent of the Request: 20.47%
DSS + Personnel: -
As a % of the total request: 0.0%
Easement Stewardship: -
As a % of the Easement Acquisition: -

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount?
The Mud River Enhancement Project received full funding for Phases II.

Detail leverage sources and confirmation of funds:
RLWD Board has committed themselves to this project. USFWS and MnDNR are committed to in-kind staff time and resources.

Does this project have the ability to be scalable?
No

Contracts

What is included in the contracts line?
Construction of the project.

Professional Services

What is included in the Professional Services line?

Design/Engineering

Federal Funds

Do you anticipate federal funds as a match for this program?
Yes

Are the funds confirmed?
Yes

Is Confirmation Document attached?
Yes, on file

In Kind : $40,000

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	22	-	-	-	22
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	350	-	-	-	350
Total	**372**	**-**	**-**	**-**	**372**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	$2,500,000	-	-	-	$2,500,000
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	$700,000	-	-	-	$700,000
Total	**$3,200,000**	**-**	**-**	**-**	**$3,200,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	-	22	-	-	-	22
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	350	-	-	-	350
Total	**-**	**372**	**-**	**-**	**-**	**372**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	$2,500,000	-	-	-	$2,500,000
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	$700,000	-	-	-	$700,000
Total	**-**	**$3,200,000**	**-**	**-**	**-**	**$3,200,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	$113,636	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	$2,000	-	-	-

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	$113,636	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	$2,000	-	-	-

Target Lake/Stream/River Feet or Miles

6 miles

Parcels

Parcel Information

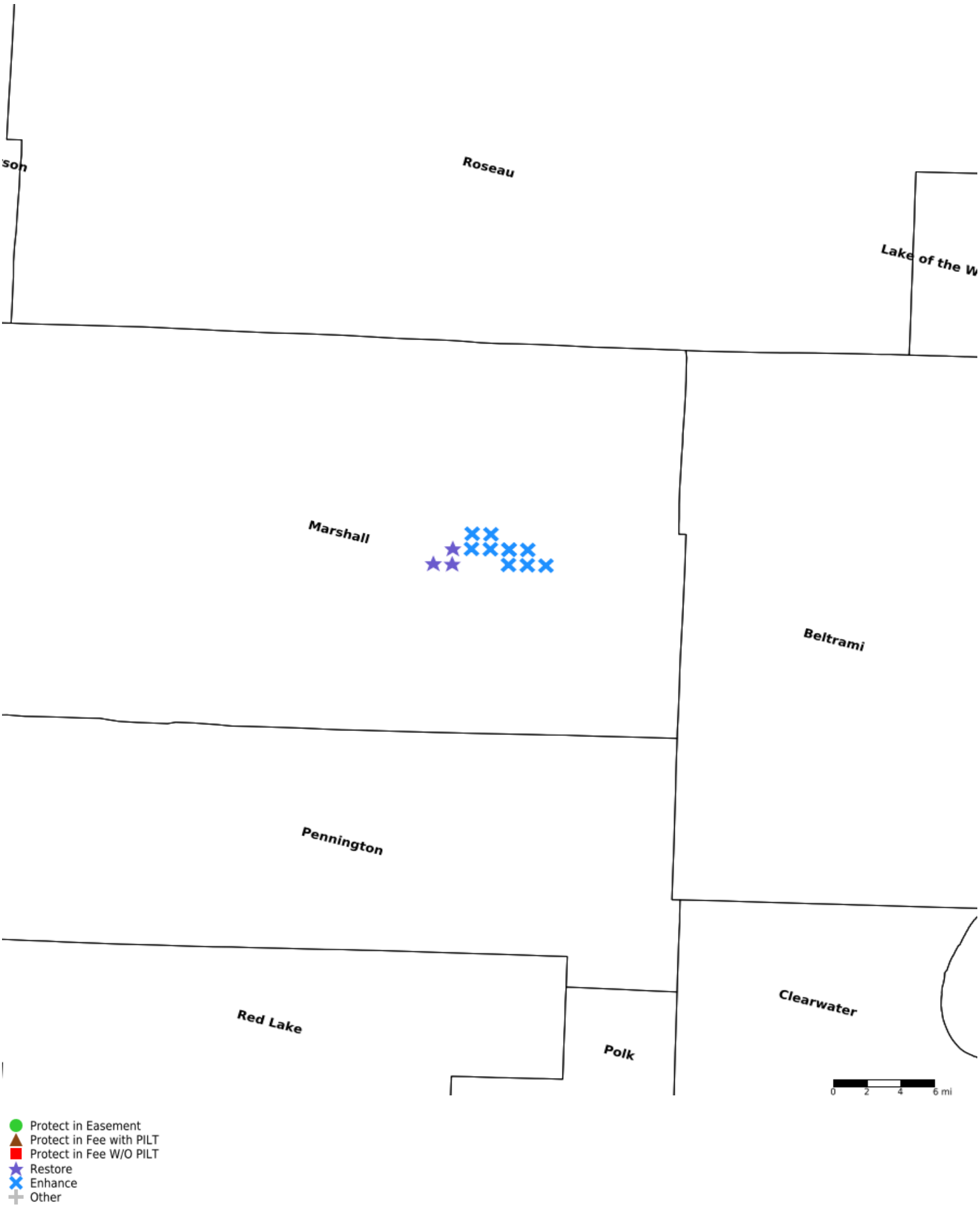
Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
Project site is currently owned by federal and state agencies.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection	Description
14-4017-001	Marshall	1564005	480	-	Yes	AGASSIZ NATL WILDLIFE REFUGE
14-4018-001	Marshall	1564006	599	-	Yes	AGASSIZ NATL WILDLIFE REFUGE
14-4018-002	Marshall	1564007	636	-	Yes	AGASSIZ NATL WILDLIFE REFUGE
14-4018-003	Marshall	1564008	640	-	Yes	AGASSIZ NATL WILDLIFE REFUGE
14-4018-007	Marshall	1564009	320	-	Yes	UNITED STATES OF AMERICA
14-6018-004	Marshall	1564009	320	-	Yes	DNR REAL ESTATE MANAGEMENT
14-6018-005	Marshall	1564010	240	-	Yes	DNR REAL ESTATE MANAGEMENT
14-6039-001	Marshall	1564014	160	-	Yes	DNR REAL ESTATE MANAGEMENT
14-6042-002	Marshall	1564015	560	-	Yes	DNR REAL ESTATE MANAGEMENT
14-6042-003	Marshall	1564016	640	-	Yes	DNR REAL ESTATE MANAGEMENT
60-0001-00	Marshall	1564112	640	-	Yes	MUD LAKE NATL WILDLIFE REFUGE
60-0001-00	Marshall	1564114	640	-	Yes	MUD LAKE NATL WILDLIFE REFUGE
60-0001-00	Marshall	1564113	640	-	Yes	MUD LAKE NATL WILDLIFE REFUGE

Parcel Map


son
Roseau
Lake of the W
Marshall
Beltrami
Pennington
Red Lake
Polk
Clearwater
0
2
4
6 mi
Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other

Lessard-Sams Outdoor Heritage Council

Mud River Enhancement Phase II

Comparison Report

Program Title: ML 2027 - Mud River Enhancement Phase II
Organization: Red Lake Watershed District
Manager: Tammy Audette

Budget

Requested Amount: $3,200,000
Appropriated Amount: $3,200,000
Percentage: 100.0%

Item	Requested Proposal	Leverage Proposal	Appropriated AP	Leverage AP	Percent of Request	Percent of Leverage
Personnel	-	$155,000	-	$155,000	-	100.0%
Contracts	$3,000,000	$500,000	$3,000,000	$500,000	100.0%	100.0%
Fee Acquisition w/ PILT	-	-	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-	-	-
Easement Acquisition	-	-	-	-	-	-
Easement Stewardship	-	-	-	-	-	-
Travel	-	-	-	-	-	-
Professional Services	$200,000	-	$200,000	-	100.0%	-
Direct Support Services	-	-	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-	-	-
Capital Equipment	-	-	-	-	-	-
Other Equipment/Tools	-	-	-	-	-	-
Supplies/Materials	-	-	-	-	-	-
DNR IDP	-	-	-	-	-	-
Grand Total	**$3,200,000**	**$655,000**	**$3,200,000**	**$655,000**	**100.0%**	**100.0%**

If the project received 70% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?
The Phase 1 request was funded in ML 2026 at 57%. Full funding would allow completion of the project under this Phase II application.

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?

If the project received 50% of the requested funding

Describe how the scaling would affect acres/activities and if not proportionately reduced, why?

Describe how personnel and DSS expenses would be adjusted and if not proportionately reduced, why?

Output

Acres by Resource Type (Table 1)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	22	22	100.0%
Protect in Fee with State PILT Liability	0	-	-
Protect in Fee w/o State PILT Liability	0	-	-
Protect in Easement	0	-	-
Enhance	350	350	100.0%

Total Requested Funding by Resource Type (Table 2)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	$2,500,000	$2,500,000	100.0%
Protect in Fee with State PILT Liability	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-
Protect in Easement	-	-	-
Enhance	$700,000	$700,000	100.0%

Acres within each Ecological Section (Table 3)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	22	22	100.0%
Protect in Fee with State PILT Liability	0	-	-
Protect in Fee w/o State PILT Liability	0	-	-
Protect in Easement	0	-	-
Enhance	350	350	100.0%

Total Requested Funding within each Ecological Section (Table 4)

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	$2,500,000	$2,500,000	100.0%
Protect in Fee with State PILT Liability	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-
Protect in Easement	-	-	-
Enhance	$700,000	$700,000	100.0%