Lessard-Sams Outdoor Heritage Council

Roseau Lake Rehabilitation: Phase II

ML 2024 Request for Funding

General Information

Date: 06/22/2023

Proposal Title: Roseau Lake Rehabilitation: Phase II

Funds Requested: $9,000,000

Confirmed Leverage Funds: $3,000,000

Is this proposal Scalable?: No

Manager Information

Manager's Name: Tracy Halstensgard
Title: Administrator
Organization: Roseau River Watershed District
Address: 714 6th Street SW
City: Roseau, MN 56751
Email: rrwd@mncable.net
Office Number: 218-463-0313
Mobile Number: 218-242-1737
Fax Number:
Website: www.roseauriverwd.com

Location Information

County Location(s): Roseau.

Eco regions in which work will take place:

- Northern Forest
- Forest / Prairie Transition

Activity types:

- Enhance
- Restore

Priority resources addressed by activity:

- Wetlands
- Habitat

Narrative

Abstract

This multi-purpose project will partially restore a large drained lake, restore and reclaim stream reaches, provide water level management capacity to substantially improve wildlife habitat conditions and provide flood damage reduction benefits, and will contribute to water quality improvements in the Roseau River.

Design and Scope of Work

Roseau Lake was drained in the early 1900s when the Roseau River was channelized and dredged and associated ditch systems were constructed to increase agricultural production in the watershed. Prior to drainage, Roseau Lake provided excellent fish and waterfowl habitat. After drainage, much of the lake basin was farmed for many years and produced crops in drier times, but production was low and unreliable in wetter years. Over time, there has been recognition by local landowners that farming the lake bed would always be tenuous and large portions of the lake basin became part of the Roseau Lake Wildlife Management Area in the 1960s. Interest in a partial restoration of the lake has grown in recent year because the DNR, the watershed district, local governments, and citizens recognize that there are opportunities to develop a multipurpose project with significant wildlife habitat and flood damage reduction benefits.

The project has two primary design purposes:

1) To improve the quantity and quality of fish and wildlife habitat in and surrounding the Roseau Lake basin area. A key objective of the project is to provide migratory habitat (including an abundance of forage) for waterfowl and shorebirds in spring and in fall.

2) To effectively use the water storage capacity of the lake basin to reduce peak flows on the Roseau River downstream of the lakebed by 10% or more compared to current conditions as well as reduce the footprint of the 100-year floodplain.

The scope of work for this funding is to construct 7.5 miles of embankment, inlet control structure, and outlet structure.

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

Fish and wildlife habitat benefits will be achieved by constructing a system of levees and water control structures to provide capacity to actively manage water levels in the lake basin. This infrastructure will allow wildlife managers to manage lake levels throughout the year to achieve wildlife management objectives. Specifically, timely water level management in spring and fall will create conditions to provide suitable forage in abundance for migratory waterfowl and shorebirds. In addition, better management of water levels in the basin during the growing season will enhance the relative value of surrounding grass cover for nesting and provide brood-rearing cover for waterfowl and other waterbirds. Benefits to aquatic invertebrates, amphibians, reptiles, and aquatic mammals will accrue whenever water is present. Fish habitat on the river will improve as a result of stream restoration features of the project that improve water quality, hydrologic conditions and the habitat corridor along the Roseau River.

At the same time, this infrastructure will provide water managers the ability to manipulate the timing of flood flows in the area to optimize the water storage capacity of the lake bed to achieve flood damage reduction

objectives. In its current state, the Roseau Lake basin area floods in the early portion of the flood hydrograph such that flood storage is unavailable when the flood peak passes through the area. Flood damage reduction benefits will be achieved by altering the timing of water storage in the Lake Basin area so the available flood storage is more effectively used to reduce peak flows downstream.

The project has secondary benefits including improved hydrologic conditions in the Roseau River, which will contribute to improved water quality, stream stability, and fish habitat and will also benefit plant communities in the Big Swamp area downstream. The project is consistent with the watershed plan and will compliment other ongoing work in the watershed to improve fish and wildlife habitat, improve water quality, and reduce flood damage.

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

This application for LSOHC funds will ensure construction phasing continues with this allocation. A watershed project team has developed this multipurpose project through the design phase utilizing previous LSOHC, State Flood Hazard Mitigation (FHM), and local funds. All environmental and cultural resource reviews are complete and at the time of this application all required permits are in hand, with the exception of the COE 404 permit, which is pending. Construction can be phased; phases 1-3 are funded using the original LSOHC grant (held by the MN DNR). It is critical that once we initiate earthwork we are able to continue to completion, which will consist of phases 4-7. An attached map shows construction phasing, which we anticipate to begin in fall 2023.

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

This project will improve the connectivity between the Roseau Lake and Big Swamp habitat complexes. Habitat fragmentation in the Roseau Lake habitat complex will be greatly reduced by this project. Presently the project area has an array of habitat, however due to the drainage networks constructed in the early 1900's these communities are fragmented. In addition to the physical barriers, the effects of drainage on natural habitat have resulted in a loss in quality of habitat and increase of invasive vegetation.
The proposed project will support a large mosaic of interconnected wetland, upland and stream habitat. The upper reaches of the project consist of 4000+ acres of peatlands, which will be hydrologically connected to the basin through disabling the present drainage ditches and diverting flows along their natural gradient towards the Roseau Lake Basin. Immediately downgradient of the peatlands are a complex of emergent and shrub dominated wetland communities, punctuated by bands of upland habitat formed on former beach ridges. Downgradient of the emergent and shrub wetlands are shallow and deep marsh habitat which comprise the former shallow lake basin. Within the basin, Pine Creek which is currently channelized, will be re-introduced to its historic channel, mimicking the pre-drainage dynamics of the stream and its connection to its floodplain and the lake basin. Within the river, the weir installed in the channelized reach will ensure that base flows will remain within the historic channel, thus enhancing aquatic and riparian habitat. Once completed, the project will support a large complex of predominantly wetland habitat extending from the Roseau Lake Basin into the province of Manitoba. Stream restoration components of the project are addressed in Phase I.

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

- Long Range Duck Recovery Plan
- North American Waterfowl Management Plan

Explain how this proposal will uniquely address habitat resilience to climate change and its anticipated effects on game, fish & wildlife species utilizing the protected or restored/enhanced habitat this proposal targets.

Recent analysis from the MNDNR has illustrated that the Roseau River is experiencing greater extremes in both high flow and low flow events compared to historical data. The project's ability to store water off-channel, provides attenuation of peak flows during and post flood to diffuse the impacts of climate change both within the basin and downstream along the Roseau River.
Conversely, the ability to retain water entering the basin, either from the river or from the northern catchments of Pine Creek and the Sprague Creek Peatlands can mitigate drought impacts on habitat within the basin. Currently during prolonged dry periods or drought, the wetlands dry down as a result of the open connection of drainage ditches to the river. Historically, during prolonged dry periods invasive vegetation expands further into the basin resulting in reduced quality of habitat.

Which LSOHC section priorities are addressed in this proposal?

Describe how this project/program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife, and if not permanent outcomes, why it is important to undertake at this time:

The project is a prime example of reversing human alterations on the natural landscape. Through restoring the hydrologic conditions within the lake basin and mimicking habitat composition prior to extensive drainage, the project will enhance habitat for fish, game, and wildlife. The size of the project and the composition of habitat which will be enhanced will provide significant benefit to wildlife within the project footprint, while also providing benefits to downstream habitat and connecting habitat corridors upstream and downstream of the basin. This project will have a beneficial conservation outcome for generations.
The project partners have reached common ground on the desired goals of this project through extensive planning and coordination that has been years in development. It's imperative the project continues to completion to achieve permanent conservation outcomes.

Outcomes

What other dedicated funds may collaborate with or contribute to this proposal?

- N/A

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.

This request will not supplant or be substituting for other funds for the project.

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

The Roseau River Watershed District and MN DNR will be responsible for all future maintenance of this project's infrastructure under the terms of a joint powers agreement. The Watershed District is authorized under Minnesota Statutes 103D to participate in long-term maintenance of this project.

Habitat enhancements within the rehabilitated lake basin will be the responsibility of the Mn DNR Section of Wildlife as part of ongoing habitat maintenance on the Wildlife Management Area.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2025 - 2030	Local RRWD Levy & MN DNR	Monitor	Maintain	-

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

The Project will provide:
-Free public access for fishing and hunting near a population center (city of Roseau)
-No-cost access to wildlife viewing mounds
Project Partners have done:
-outreach to tribal authorities on natural resource benefits
-consultation with tribal authorities on cultural resources associated with the Roseau Lake basin.
Project Partners plan additional education outreach on the cultural significance and history of the area.

Activity Details

Requirements

If funded, this proposal 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?

- WMA
- Permanently Protected Conservation Easements
- Other : Watershed District owned land

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program?
No

Will neonicotinoid pesticide products be used within any activities of this proposal?
No

Other OHF Appropriation Awards

Have you received OHF dollars in the past through LSOHC that are current OPEN appropriations?
Yes

Approp Year	Funding Amount Received	Amount Spent to Date	Funding Remaining	% Spent to Date
2020	$3,036,000	$400,000	$2,636,000	13.18%
Totals	$3,036,000	$400,000	$2,636,000	13.18%

Timeline

Activity Name	Estimated Completion Date
construction	12-31-2027

Budget

Totals

Item	Funding Request	Total Leverage	Leverage Source	Total
Personnel	-	-	-	-
Contracts	$8,500,000	$3,000,000	Red River Watershed Management Board	$11,500,000
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	$500,000	-	-	$500,000
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	**$9,000,000**	**$3,000,000**	**-**	**$12,000,000**

Amount of Request: $9,000,000
Amount of Leverage: $3,000,000
Leverage as a percent of the Request: 33.33%
DSS + Personnel: -
As a % of the total request: 0.0%
Easement Stewardship: -
As a % of the Easement Acquisition: -

Total Leverage (from above)	Amount Confirmed	% of Total Leverage	Amount Anticipated	% of Total Leverage
$3,000,000	$3,000,000	100.0%	-	0.0%

Detail leverage sources and confirmation of funds:
The Red River Watershed Management Board (RRWMB) is a cooperative organization of member watershed districts with levy authority to invest in capital projects for flood damage reduction. The RRWMB committed funds to the through their Step Process in 2019.

Does this proposal have the ability to be scalable?
No

Please explain why this project can NOT be scaled:
The current project scope has been vetted though the Project Work Team, and Environmental Assessment Worksheet has received a Record of Decision, and construction permits have been applied for and in most cases received.

Contracts

What is included in the contracts line?
The engineer's estimate for the remaining construction.

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?
No

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	-	0	0	-	0
Protect in Fee with State PILT Liability	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0
Protect in Easement	0	0	0	0	0
Enhance	3,000	0	0	1,900	4,900
Total	**3,000**	**0**	**0**	**1,900**	**4,900**

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	$5,510,000	-	-	$3,490,000	$9,000,000
Total	**$5,510,000**	**-**	**-**	**$3,490,000**	**$9,000,000**

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee w/o State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	0	3,000	0	0	1,900	4,900
Total	**0**	**3,000**	**0**	**0**	**1,900**	**4,900**

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	-	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	-	$5,510,000	-	-	$3,490,000	$9,000,000
Total	**-**	**$5,510,000**	**-**	**-**	**$3,490,000**	**$9,000,000**

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	$1,836	-	-	$1,836

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	-	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-

Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	$1,836	-	-	$1,836

Target Lake/Stream/River Feet or Miles

Roseau River (3.2 miles)

Parcels

Sign-up Criteria?
No

Explain the process used to identify, prioritize, and select the parcels on your list:
All project related land rights have been secured. This funding will be allocated to construction.

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Jadis Unorganized 15	Roseau	16340215	4	$6,666	Yes
Jadis Unorganized 21	Roseau	16340221	320	$533,334	Yes
Jadis Unorganized 19	Roseau	16340219	626	$1,043,334	Yes
Jadis Unorganized 30	Roseau	16340230	104	$173,334	Yes
Jadis Unorganized 29	Roseau	16340229	640	$1,066,666	Yes
Jadis Unorganized 20	Roseau	16340220	640	$1,066,666	Yes
Jadis Unorganized 17	Roseau	16340217	640	$1,066,666	Yes
Jadis Unorganized 18	Roseau	16340218	640	$1,066,666	Yes
Jadis Unorganized 7	Roseau	16340207	221	$368,334	Yes
Dieter 25	Roseau	16341225	183	$305,000	Yes
Dieter 26	Roseau	16341226	194	$323,334	Yes
Dieter 23	Roseau	16341223	88	$146,666	Yes
Dieter 24	Roseau	16341224	620	$1,033,334	Yes
Dieter 13	Roseau	16341213	480	$800,000	Yes

Parcel Map


12
89
Pine Creek
ROSEAU
MINNESOTA
Roseau River
Roseau
ROSEAU
Lake of the
Marshall
Beltrami
0 2 4 6 mi
Protect in Easement
Protect in Fee with PILT
Protect in Fee W/O PILT
Restore
Enhance
Other

Roseau Lake Project

Roseau Lake is in NW Minnesota between the town of Roseau and the Canadian Border. The lake was drained in the early 1900's for agricultural purposes. Attempts to farm the lake basin have been abandoned due to frequent flooding. Currently, Roseau Lake and the surrounding lands flood on a frequency between 1-yr and 2-yrs. This frequent flooding leads to lost crops or greatly reduced yields and lost waterfowl production.

The stated purpose of the project is flood damage reduction & improved habitat for waterfowl, fish and other wildlife. This will be achieved with the construction of embankments and control structures along the Roseau River to better time the flood storage in the Roseau Lake basin.

PROJECT GOALS

Habitat Restoration

- **Stream flow restoration**
- **Enhanced waterfowl, fish and wildlife habitat**
- **Improved water level management on WMA lands to improve beneficial vegetation**
- **Reduction in riverbank erosion and bank sloughing on the Roseau River**
- **Improve water level management in Roseau Lake (e.g., control pool bounce to improve nesting success)**

Flood Damage Reduction

- **Provide more efficient flood storage**
- **Provide flood damage reduction downstream: Manage storage and flow release in beneficial consideration of Red River flows & and the Roseau River WMA (Big Swamp)**
- **Provide flood damage reduction in agricultural areas both in surrounding areas and downstream of Roseau Lake.**

PROJECT STATUS May '23

Planning:

- Project wetland mitigation & restoration plan under permit review
- Final engineering & design complete
- Operation & Maintenance Plans approved
- Access & Recreation Plans prepared

Permitting:

- Environmental Assessment Worksheet Record of Decision – No EIS required
- DNR, Dam Safety, & WCA approved
- COE 404 under review

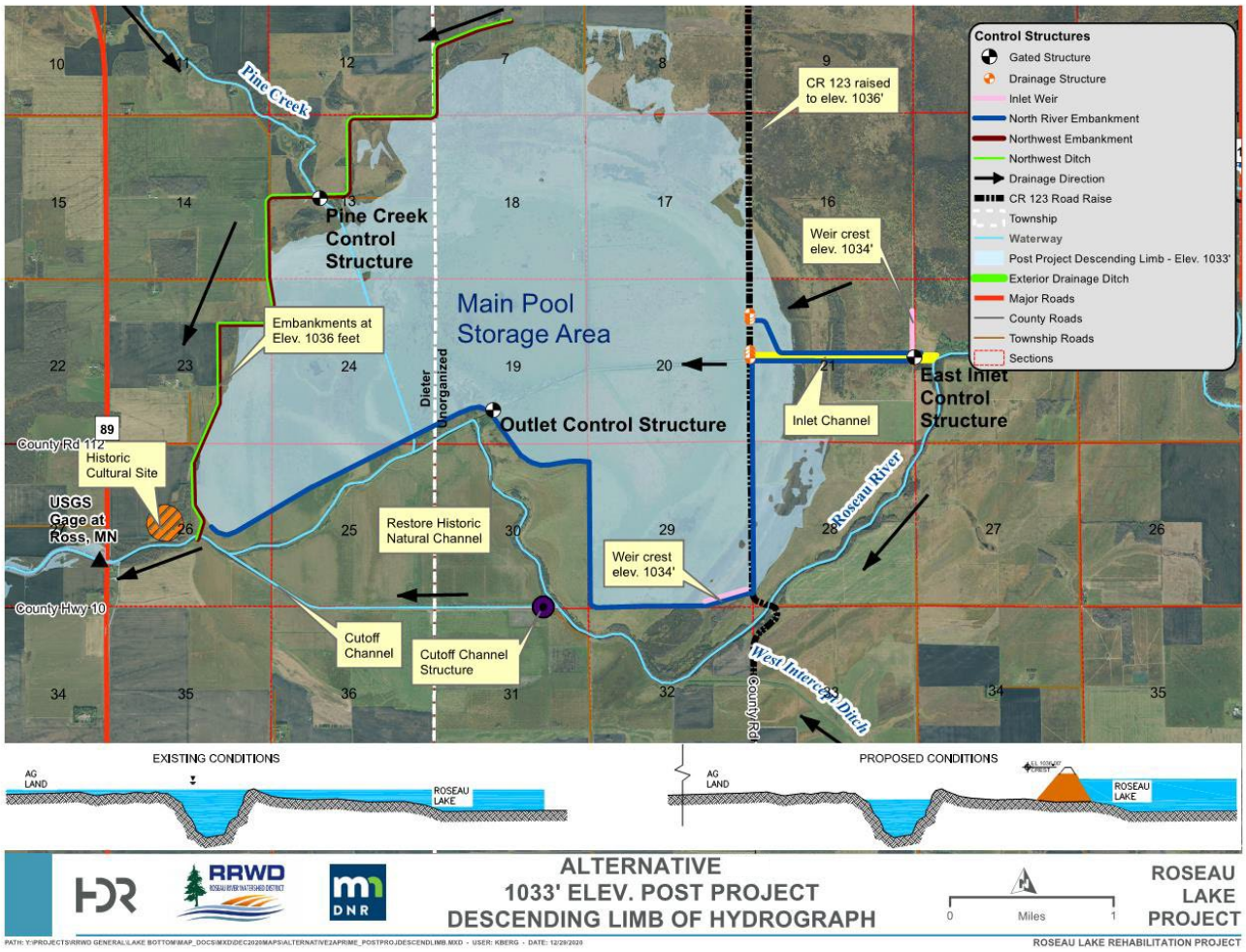
Funding:

- State FHM Funding commitment – $2,503,544
- RRWMB commitment - $3 M

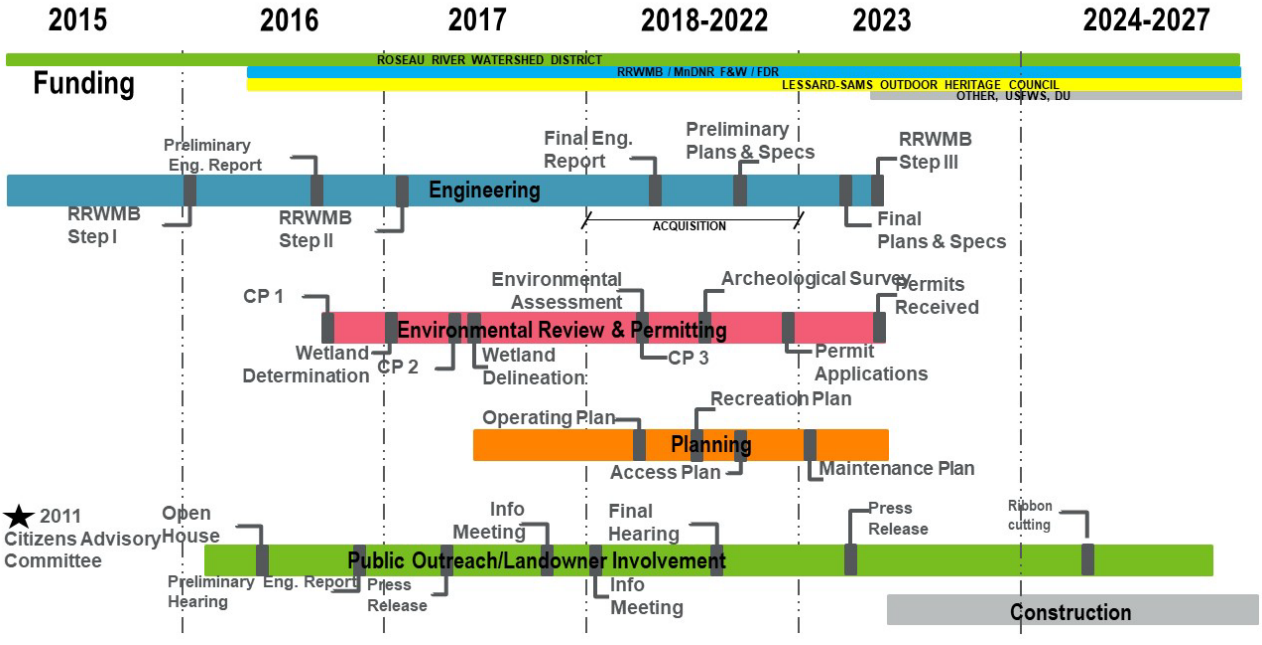
Total funding to date: State FHM $2.5M; **LSOHC $2.76M; RRWMB $0.480M; RRWD $1.5M M

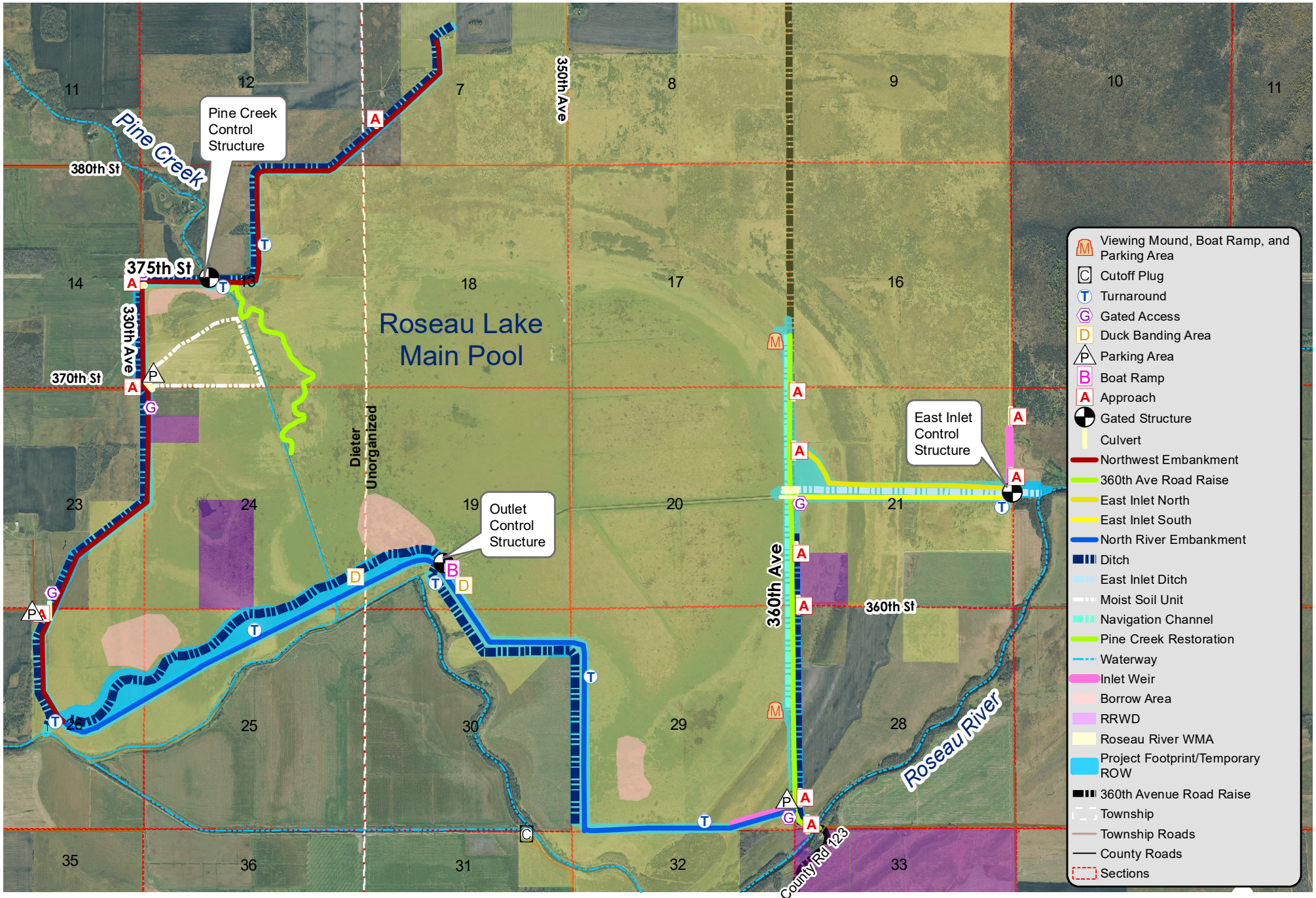
	Previous Funding (through FY20)	FY2021 (7/1/20-6/30/21)	FY2022 (7/1/21-6/30/2022)	FY2023 (7/1/22-6/30/23)	FY2024-FY 2027
Funding	**FHM $1.2M LSOHC $2.76M RB $0.135M WD $0.249M**	**FHM $1M WD $0.5M**	**RB $480M WD $0.561M**	**FHM $303,544 WD $0.230M**	**LSOHC $9M RB $2.5M WD $????M**
Project Status	Planning; Engineering;	Acquisition; Design	Acquisition; Permitting	Permitting	Construction; Completion

**current LSOHC funding agreement is with the MN DNR


Control Structures
Gated Structure
Drainage Structure
Inlet Weir
North River Embankment
Northwest Embankment
Northwest Ditch
Drainage Direction
CR 123 Road Raise
Township
Waterway
Post Project Descending Limb - Elev. 1033'
Exterior Drainage Ditch
Major Roads
County Roads
Township Roads
Sections
Pine Creek
CR 123 raised to elev. 1036'
Pine Creek Control Structure
Weir crest elev. 1034'
Main Pool Storage Area
Embankments at Elev. 1036 feet
Dieter Unorganized
East Inlet Control Structure
Outlet Control Structure
Inlet Channel
County Rd 112
Historic Cultural Site
USGS Gage at Ross, MN
Roseau River
Restore Historic Natural Channel
Weir crest elev. 1034'
County Hwy 10
Cutoff Channel
Cutoff Channel Structure
West Intercept Ditch
County Rd
EXISTING CONDITIONS
AG LAND
ROSEAU LAKE
PROPOSED CONDITIONS
AG LAND
ROSEAU LAKE
ALTERNATIVE
1033' ELEV. POST PROJECT
DESCENDING LIMB OF HYDROGRAPH
Miles
ROSEAU LAKE PROJECT
ROSEAU LAKE REHABILITATION PROJECT

Timeline


2015
2016
2017
2018-2022
2023
2024-2027
Funding
ROSEAU RIVER WATERSHED DISTRICT
RRWMB / MnDNR F&W / FDR
LESSARD-SAMS OUTDOOR HERITAGE COUNCIL
OTHER, USFWS, DU
Preliminary Eng. Report
Final Eng. Report
Preliminary Plans & Specs
RRWMB Step III
Engineering
RRWMB Step I
RRWMB Step II
ACQUISITION
Final Plans & Specs
CP 1
Environmental Assessment
Archeological Survey
Permits Received
Environmental Review & Permitting
Wetland Determination
CP 2
Wetland Delineation
CP 3
Permit Applications
Recreation Plan
Operating Plan
Planning
Access Plan
Maintenance Plan
★ 2011 Citizens Advisory Committee
Open House
Info Meeting
Final Hearing
Press Release
Ribbon cutting
Public Outreach/Landowner Involvement
Preliminary Eng. Report Hearing
Press Release
Info Meeting
Construction

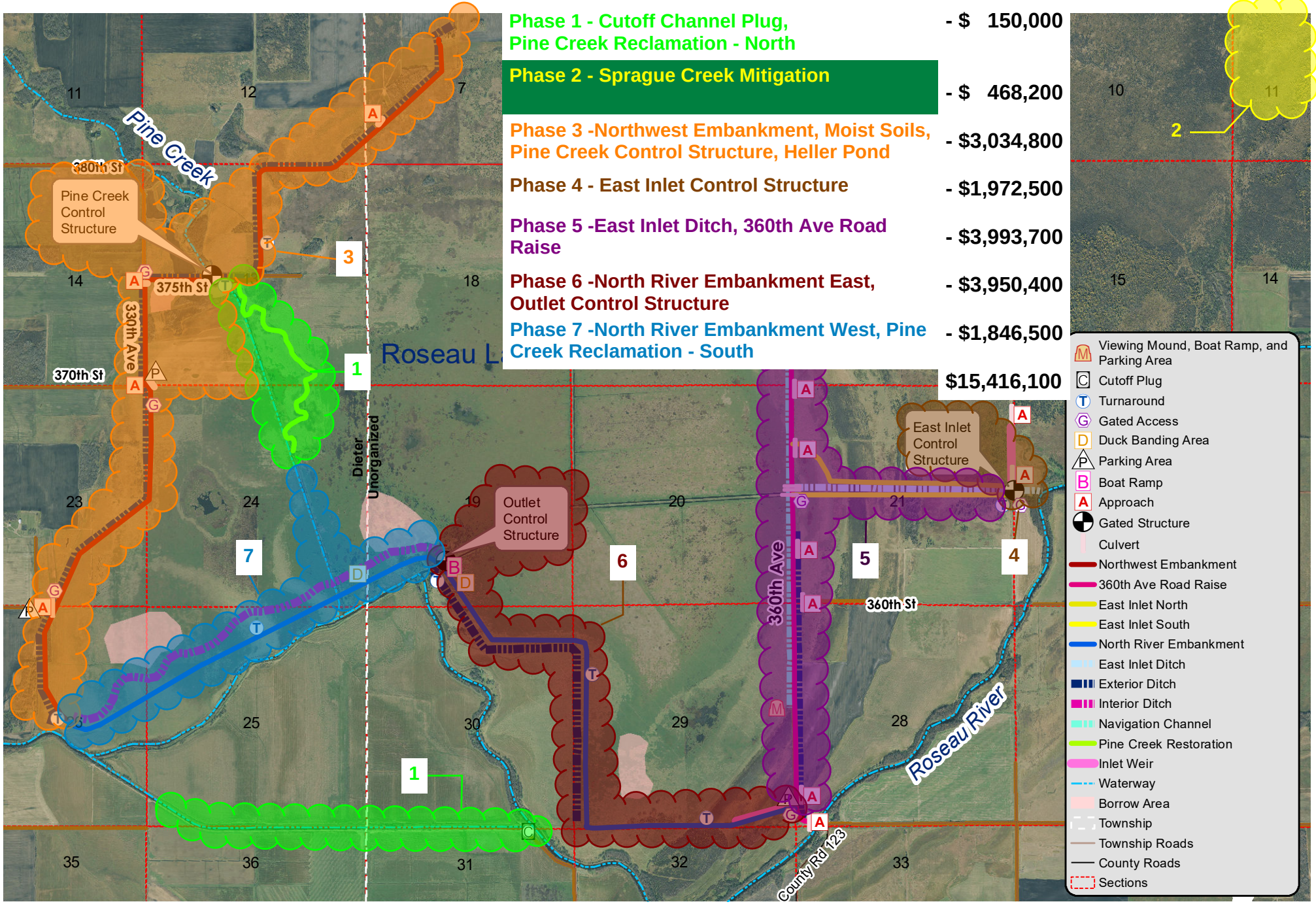


OVERVIEW MAP

0 0.5 1 Miles

ROSEAU LAKE REHABILITATION PROJECT

PATH: Y:\PROJECTS\RRWD GENERAL\LAKE BOTTOM\MAP_DOCS\MXD\TOMENRIGHTMAPS\OVERALLPROJECTMAP2.MXD - USER: KBERG - DATE: 7/18/2022



Proposed Project Phasing
May 2023

0 0.5 1 Miles

ROSEAU LAKE REHABILITATION PROJECT

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