

# **Lessard-Sams Outdoor Heritage Council**

Nelson Slough - East Park WMA ML 2024 Request for Funding

# **General Information**

Date: 06/23/2023

Proposal Title: Nelson Slough - East Park WMA

Funds Requested: \$6,302,500

Confirmed Leverage Funds: \$2,848,500

Is this proposal Scalable?: Yes

### **Manager Information**

Manager's Name: Morteza Maher Title: Administrator Organization: Middle-Snake-Tamarac Rivers Watershed District Address: 453 N. McKinley St. City: Warren, MN 56762 Email: morteza.maher@mstrwd.org Office Number: 218-745-4741 Mobile Number: 218-230-5703 Fax Number: 218-745-5300 Website: www.mstrwd.org

### **Location Information**

County Location(s): Marshall.

### Eco regions in which work will take place:

• Forest / Prairie Transition

#### Activity types:

• Enhance

#### Priority resources addressed by activity:

- Habitat
- Wetlands

# **Narrative**

### Abstract

Upon completion of the Nelson Slough project, wildlife managers will be able to more effectively manage flood waters to reduce "bounce," thereby improving habitat conditions for nesting and migrating waterfowl and other wetland wildlife on this nearly 2,482-acre impoundment. This goal will be achieved through

1) replacement of the existing outdated water control structure which also doesn't have the needed conveyance capacity; and

2) increase embankment heights by three and a half feet to provide more freeboard during large flood events, thus improving management capacity and overall safety of the project to meet the current Dam Safety Codes.

### **Design and Scope of Work**

What is the issue:

Nelson Slough is an on-channel impoundment on Judicial Ditch 19 (JD19) built in 1971. In its over 50-year lifespan, the project has provided wetland wildlife habitat benefits and flood damage reduction benefits on East Park Wildlife Management Area (WMA). However, flood waters come more frequently than anticipated, and slow release of those flood waters is impeding wildlife production on the WMA. The structure has also passed its expected life span and doesn't meet the design standards of today.

What is the solution:

A project team established according to the 1998 Red River Basin Mediation Agreement to discuss how the project could best fit current needs. The Project Team consists of representatives from the Middle Snake Tamarac Rivers Watershed District (MSTRWD), the Minnesota Department of Natural Resources (DNR), and other local stakeholders, and settled upon the proposed design. The Watershed District along with the DNR is now looking forward to construction.

The project has two primary purposes:

1. Improve wetland wildlife habitat within the impoundment. Wildlife habitat, in particular for migratory waterfowl and wetland birds, will be managed to provide both forage and resting areas during the migration seasons, but also nesting habitat for those over-water nesting birds.

2. Improve the water storage capacity of the impoundment. In the new design the impounding capacity is not expected to change, but rather timing is expected to be utilized more effectively so the flood damages downstream are expected to be reduced with the improvements to the project.

### Design and Scope of work:

MSTRWD-DNR partnership is proposing to replace the existing water control structure with a structure more capable of handling current flood events that feature the below changes:

The existing 6' primary and 70' secondary spillway will be changed to overall 250' spillway, with a 40' primary and 30' of secondary spillway, providing additional capacity that the existing structure lacks to manage the water elevation.

In addition, the existing embankments will be raised approximately 3.5' above the existing embankments to provide additional freeboard for expected flood events and to meet todays' design standards.

Managers will be able to manage water elevation and release timing more effectively with the completion of this project. Currently flood waters are slow to leave the impoundment, flooding out water bird nesting attempts and negating potential storage for follow-up flood events. Furthermore, the current embankments leave little freeboard, limiting the volume of flood waters that may be stored during any one event. With the replacement of

the water control structure, the improved embankments, and improvements to correct stability issues downstream on JD 19, flood waters can be effectively stored and metered out following downstream flood peaks to decrease damages caused to infrastructure and adjacent farmlands.

Through improvements to the JD 19 system to improve stability, proposers of the project also expect to see improvements in water quality downstream in the legal ditch system as well as in the Tamarac River and Red River.

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

Wetlands and shallow lakes in Minnesota provide habitat for more than 20 bird Species of Greatest Conservation Need (SGCN), eight or more amphibians and reptiles, and numerous invertebrates, including mussels, snails, and dragonflies. The Wildlife Action Network ranks the quality of terrestrial and aquatic habitat of East Park WMA as High and Medium-High.

Nelson Slough provides habitat for waterfowl, migratory water birds, and other wetland wildlife. Current operation limits the rate at which flood waters can be released from the impoundment leading to unacceptable levels of "bounce" following large rain events. This bounce can in turn flood nests of over-water nesting birds, reduce light penetration necessary for submerged aquatic vegetation to grow, and dislodge floating cattail bogs which further limit habitat availability and plant growth.

Species of Greatest Conservation Need (SGCN) located at Nelson Slough could include lesser scaup, northern pintail, trumpeter swans, American and least bitterns, black terns, Franklin's gulls, and other over-water colonial nesting birds. Reduced bounce upon completion of the project should lead to better nesting success by SGCN and other waterfowl and over-water nesting birds. Specifically in the Aspen Parklands, Minnesota's Wildlife Action Plan 2015-2025 (WAP) notes that management of shallow lakes is important for Forster's terns, red-necked grebes, and western grebes.

Managing submerged aquatic vegetation for the benefit of migrating waterfowl is key to the Minnesota Shallow Lakes Program Plan. Many species of waterfowl and other wetland-associated birds migrate through the area each spring and fall and benefit from the lake maintained in the clear-water state dominated by submerged aquatic vegetation. A state endangered species, sheathed pondweed (Stuckenia vaginata) is found within the impoundment. This submerged plant species can be negatively affected by prolonged deep water, as light penetration needed for plant growth decreases with water depth and turbidity. Completion of the project is expected to allow managers to better maintain water levels that would benefit this and other submerged aquatic vegetation species.

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

The existing facility is losing its attraction to wetland wildlife due to extreme water level fluctuations. It is also degrading due to invasive species taking over the majority of the Nelson Slough Shallow lake. This project including its two main components are equally critical for the impoundment ecosystem to survive. The original Nelson Slough structure is already past its expected lifespan of 50 years. Failure of the water control structure or associated embankments would eliminate habitat management capacity of a nearly 2,482-acre impoundment and may also lead to increased flood damages to downstream infrastructure and adjoining farmlands. The Project Team associated with this project has identified the chosen project as the preferred alternative. This project will benefit the wetland wildlife and residents of northwestern Minnesota, along with all those who use East Park WMA for recreational activities.

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

The Minnesota Duck Recovery Plan goals include boosting the state's breeding duck populations. The most productive prairie wetland habitat is a mix of wetland and grassland as a habitat complex. A complex could be 4-9 square miles and should be comprised of 10% temporary/seasonal wetlands, 10% permanent wetlands, and 40% grasslands, with the remaining 40% available for crops. In addition to mixes of grasslands and healthy wetlands, The Duck Plan also called for accelerated efforts to restore 1,800 shallow lakes. The Nelson Slough Project will contribute to management of permanent wetlands within these complexes as well as management of a shallow lake.

The Minnesota Prairie Conservation Plan (2nd edition, 2018) outlines focal areas (Core Areas and Habitat Complexes) where we can build on an existing base of conservation lands and improve the habitat there. The Nelson Slough Project lies within the East Park Core Area identified in the Minnesota Prairie Conservation Plan. With the improvements to the site, wetland acres will be preserved within the East Park Core Area, where there is currently a shortfall in goal acres.

The Minnesota Biological Survey (MBS) lists areas adjacent to the project of Outstanding and Moderate Biodiversity, while the impoundment itself is listed as Below. Upon completion of this project, management will continue to improve wetland habitat conditions within Nelson Slough providing habitat for SGCN such as lesser scaup, northern pintail, least bitterns, American bitterns, marsh wrens, Virginia rails, trumpeter swans and Forster's terns, as well as state endangered species such as sheathed pondweed.

### 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.

The new outlet structure will provide improved flexibility to store and release water necessary to improve habitat for wildlife in response to ever-changing climate conditions and altered hydrology. Expected increases in both precipitation and frequency of extreme precipitation events, leading to increased runoff and flooding, would lead to deteriorating habitat conditions in absence of improvements from this project. Stable water level will improve nest success in this 2,482-acre impoundment.

### Which LSOHC section priorities are addressed in this proposal?

### Forest / Prairie Transition

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

# 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 proposed project is on an existing Wildlife Management Area (WMA) and is both permanently protected and publicly accessible. This project has served not only flood damage reduction goals but also wetland wildlife habitat goals for over 50 years and those goals will not change upon completion of the project. The improvements

proposed by this project are expected to last another 50 years, creating a long-term opportunity for public recreation and wildlife habitat management.

### **Outcomes**

### **Programs in forest-prairie transition region:**

• Improved aquatic habitat vegetation ~ Pre-project submerged aquatic plant conditions have been documented on Nelson Slough by the Shallow Lakes Program of the DNR. We anticipate these surveys to continue. With this data, managers will be able to compare post-project conditions to those from past years to better guide management into the future.

Remote data loggers have been documenting water levels continuously throughout the open-water season for multiple years at Nelson Slough. Since prolonged high water can negatively affect submerged aquatic vegetation (SAV), managers will be able to estimate how the impacts to SAV would have differed without the completion of the project.

### 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.

There is no previous State funding used for this project!

There is an application to State FHM funding for this project that has not been allocated yet. In case that funding will become available, OHF and local cost share will decrease accordingly.

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

A typical goal is to have water control structures and embankments last a minimum of 30-40 years. Completed infrastructure will be jointly managed by DNR and MSTRWD through a joint powers agreement that includes an operation and maintenance plan. Periodic enhancements such as invasive species removal and water control structure and embankment maintenance or replacement will be accomplished through annual funding requests to a variety of funding sources including, but not limited to, the Game and Fish Fund, bonding, gifts, the Environmental and Natural Resources Trust Fund, and federal sources such as the North American Wetlands Conservation Act grants. Enhancement projects, such as cattail control, prescribed burns, and the like are implemented to achieve quality, long-lasting habitat benefits. Monitoring by area wildlife staff, shallow lakes specialists, and Watershed District staff will ensure that follow-up management is employed as needed.

Year	Source of Funds	Step 1	Step 2	Step 3
2025-2065	DNR - MSTRWD	Operation and Maintenance of new structures	Cattail Control, Prescribed Burn on as needed basis	Structural inspection on as needed basis
2025-2065	Any other funding become available	Operation and Maintenance of new structures	Cattail Control, Prescribed Burn on as needed basis	Structural inspection on as needed basis
2025-2065	DNR - MSTRWD	Collection of maintenance records and plan for improvements on an annual basis	-	-

### **Actions to Maintain Project Outcomes**

		accordingly		
2025-2065	Any other funding	Collection of	-	-
	become available	maintenance records		
		and plan for		
		improvements on an		
		annual basis		
		accordingly		

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

Black, Indigenous, and People of color and diverse communities make up about 20% of the population of Minnesota, but only about 5% of the state park visitors, suggesting that there are barriers to use of public lands by BIPOC.

The Nelson Slough Project is located within East Park WMA in Marshall Co. This is a rural area of the state with low population densities, and a large portion (97% during the last census) of white residents. While as a WMA it is publicly accessible by all residents of Minnesota and visitors to the state, we recognize that most users of the WMA will likely not come from diverse communities. There are no tribal lands in Marshall Co., though the Red Lake Nation is about 35 miles from East Park WMA, providing reasonable access to those inhabitants.

The MSTRWD adheres to non-discriminatory practices when awarding contracts for construction. We at the project management level will do all we can to provide equal opportunity and encourage BIPOC to be involved in this project.

# **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
- Public Waters

### 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?  $\ensuremath{\mathsf{No}}$ 

## **Timeline**

Activity Name	Estimated Completion Date
Final Engineering and Permitting	2023
Construction	2024
Operation and Maintenance Starts from	2025

### **Budget**

#### **Totals**

Item	Funding Request	Total Leverage	Leverage Source	Total
Personnel	-	-	-	-
Contracts	\$5,892,000	\$743,000	MSTRWD and	\$6,635,000
			RRWMB and BWSR	
Fee Acquisition w/	-	-	-	-
PILT				
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	\$110,500	MSTRWD and	\$110,500
			RRWMB	
Easement	-	-	-	-
Stewardship				
Travel	-	\$5,000	MSTRWD and DNR	\$5,000
<b>Professional Services</b>	\$310,500	\$1,860,000	MSTRWD and BWSR	\$2,170,500
			and RRWMB	
Direct Support	-	\$30,000	MSTRWD and	\$30,000
Services			RRWMB	
DNR Land Acquisition	-	-	-	-
Costs				
Capital Equipment	-	-	-	-
Other	\$100,000	\$100,000	MSTRWD and BWSR	\$200,000
Equipment/Tools			and RRWMB	
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	\$6,302,500	\$2,848,500	-	\$9,151,000

Amount of Request: \$6,302,500 Amount of Leverage: \$2,848,500 Leverage as a percent of the Request: 45.2% 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
\$2,848,500	\$2,848,500	100.0%	-	0.0%

#### Detail leverage sources and confirmation of funds:

RRWMB, MSTRWD and WBIF are committed to support the project, their contribution would be \$2,848,500. The addition of the OHF funding of \$6,302,500 would enable the project to move forward to construction. FHM application submitted; since not sure if will be awarded, not included here.

Does this proposal have the ability to be scalable?

Yes

### If the project received 50% of the requested funding

**Describe how the scaling would affect acres/activities and if not proportionately reduced, why?** Scaling to 50% funding, increases the risk of inflation effect on the whole project. Risk mitigation plan could be: phase1: removal of existing and install new outlet structure, and phase 2: raising the levee and channel stabilization work. Cost will not be reduced proportionately, due to two times mobilization & drawdown.

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

Funding 50%, means extra engineering cost to adjust scope and design accordingly, two times bidding, public notices, etc, twice mobilization and drawdown which means double time of staff monitoring and doing QA/QC on site.

### If the project received 30% of the requested funding

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

Scaling to 30%, increases the risk of economy inflation effect on the whole project.

Risk mitigation plan could be: phase1: removal of existing and install new outlet structure, and phase 2-3: raising the levee and channel stabilization work.

Cost will not be reduced proportionately, due to 2-3 times mobilization & drawdown.

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

Funding 30%, means extra engineering cost to adjust scope and design accordingly, three times bidding, public notices, etc, three times mobilization and drawdown which means increased staff time on monitoring and doing QA/QC on site.

### Contracts

### What is included in the contracts line?

Construction is included in the Contracts line which includes but not limited to: mobilization, clearing and preparation of the site, and structural elements, such as reinforced sheet piling at the outlet, concrete, steel gates and catwalks, and riprap. Engineer's opinion of probable cost breakdown can be provided upon request.

### **Professional Services**

### What is included in the Professional Services line?

- Design/Engineering
- Other : Project Management and Financial accounting
- Surveys
- Title Insurance and Legal Fees

### **Other Equipment/Tools**

### Give examples of the types of Equipment and Tools that will be purchased?

It is planned, if funded, this project will become a landmark utilizing renewable energy sourced outlet gate operating system.

Solar panels, battery system Hydraulic and Mechanical motor and remote operating control panel will be the main components of the proposed system.

### **Federal Funds**

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

No

# **Output Tables**

## Acres by Resource Type (Table 1)

Туре	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	0	0	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	1,959	0	0	523	2,482
Total	1,959	0	0	523	2,482

### **Total Requested Funding by Resource Type (Table 2)**

Туре	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	\$3,151,000	-	-	\$3,151,500	\$6,302,500
Total	\$3,151,000	-	-	\$3,151,500	\$6,302,500

# Acres within each Ecological Section (Table 3)

Туре	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	2,482	0	0	0	2,482
Total	0	2,482	0	0	0	2,482

# **Total Requested Funding within each Ecological Section (Table 4)**

Туре	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	-	\$6,302,500	-	-	-	\$6,302,500
Total	-	\$6,302,500	-	-	-	\$6,302,500

# Average Cost per Acre by Resource Type (Table 5)

Туре	Wetland	Prairie	Forest	Habitat
Restore	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	\$1,608	-	-	\$6,025

# Average Cost per Acre by Ecological Section (Table 6)

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

Proposal #: WRE02

Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	\$2,539	-	-	-

Target Lake/Stream/River Feet or Miles

# **Parcels**

### Sign-up Criteria?

No

### Explain the process used to identify, prioritize, and select the parcels on your list:

The parcels identified are those that are within the 100 year flood plain and the footprint on Nelson Slough within East Park WMA.

### **Restore / Enhance Parcels**

Name	County	TRDS	Acres	Est Cost	Existing
10-00-000		1.7.0.1.0000			Protection
127087003	Marshall	15844228	466	-	Yes
126087201	Marshall	15844227	378	-	Yes
127074002	Marshall	15844222	658	-	Yes
127068003	Marshall	15844216	1	-	Yes
126087004	Marshall	15844229	4	-	Yes
126074004	Marshall	15844220	17	-	Yes
126075001	Marshall	15844223	3	-	Yes
125087301	Marshall	15844228	36	-	Yes
126074002	Marshall	15844221	618	-	Yes
126068002	Marshall	15844215	31	-	Yes
124087202	Marshall	15844227	54	-	Yes
126068004	Marshall	15844214	46	-	Yes
125087002	Marshall	15844227	41	-	Yes
120077000	Marshall	15844223	262	-	Yes
124074001	Marshall	15844220	66	-	Yes
124068001	Marshall	15844214	99	-	Yes
120087000	Marshall	15844226	6	-	Yes
120075000	Marshall	15844223	75	-	Yes

# Parcel Map



Restore Enhance Other

# Nelson Slough/ East Park WMA

Who? Middle-Snake-Tamarac Rivers Watershed District & DNR

What? Enhance Wetland/ Shallow Lakes, Waterfowl Habitat

> Where? NW MN, North Central Marshall County, Nelson Slough East Park WMA

# When?

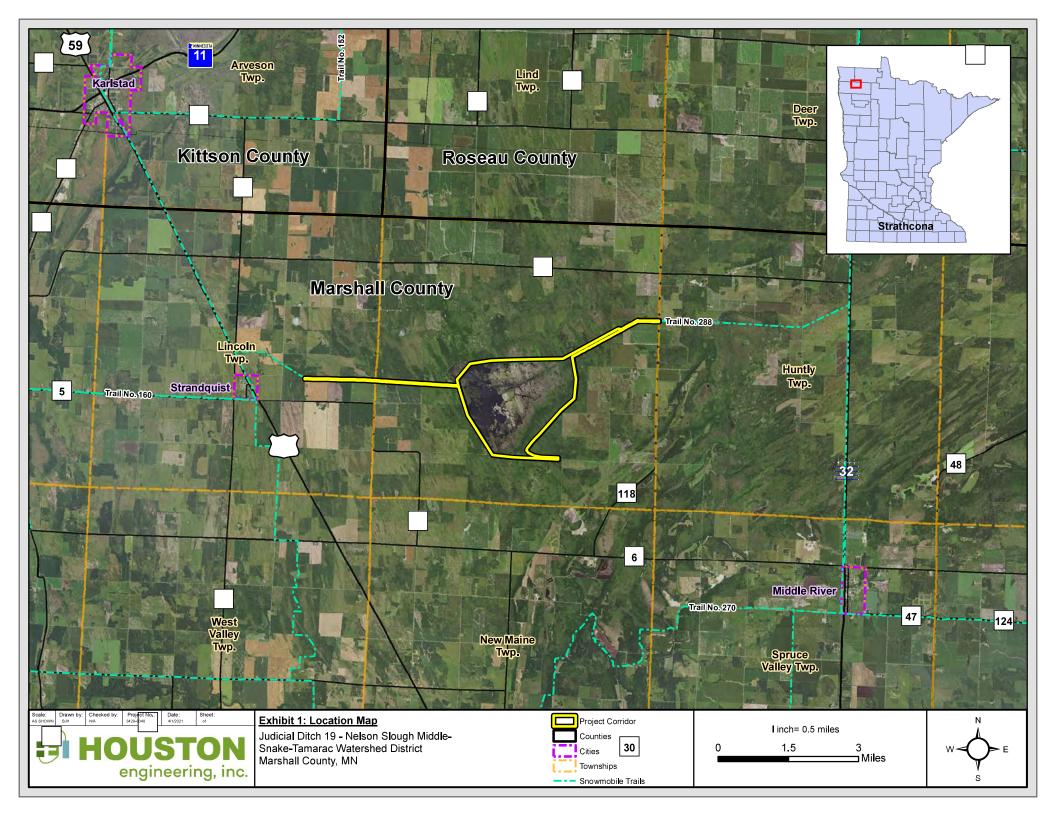
Engineering and Permitting in 2023-4, Construction in 2024-5, Operation and capturing benefits 2025-2075

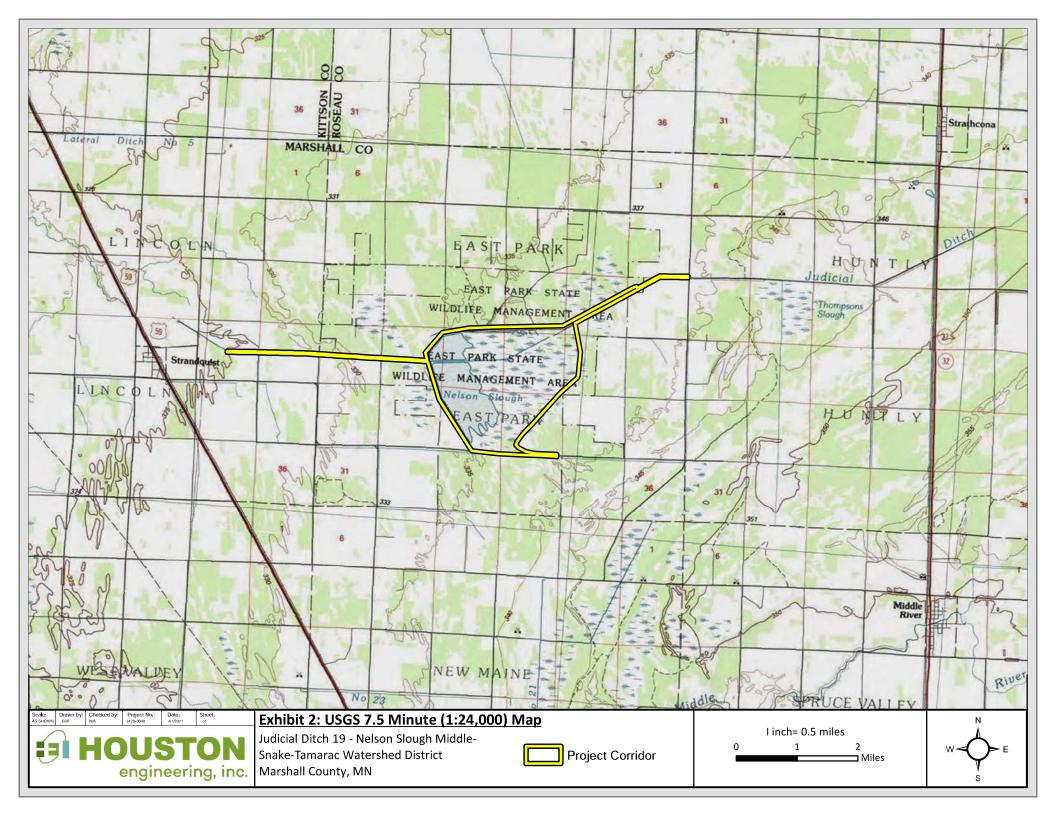
# Why?

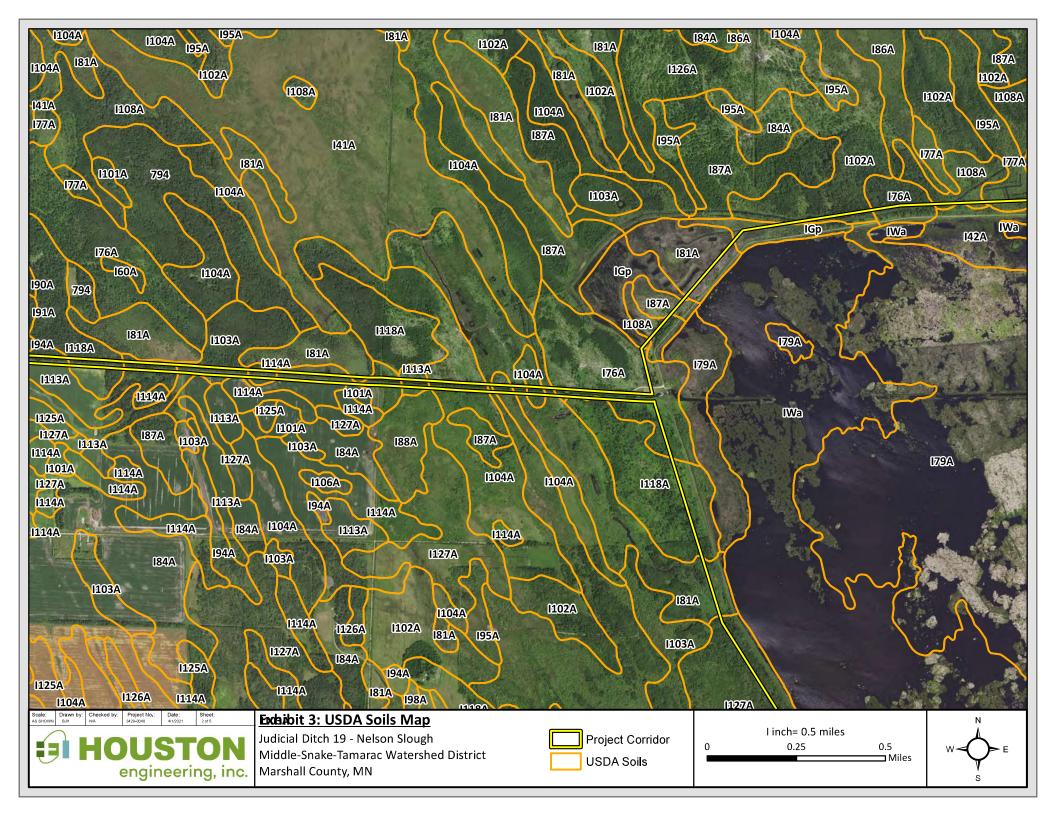
The existing outlet structure is obsolete and small inhibiting facility's ability to operate at normal and necessary pool elevation during nesting season.

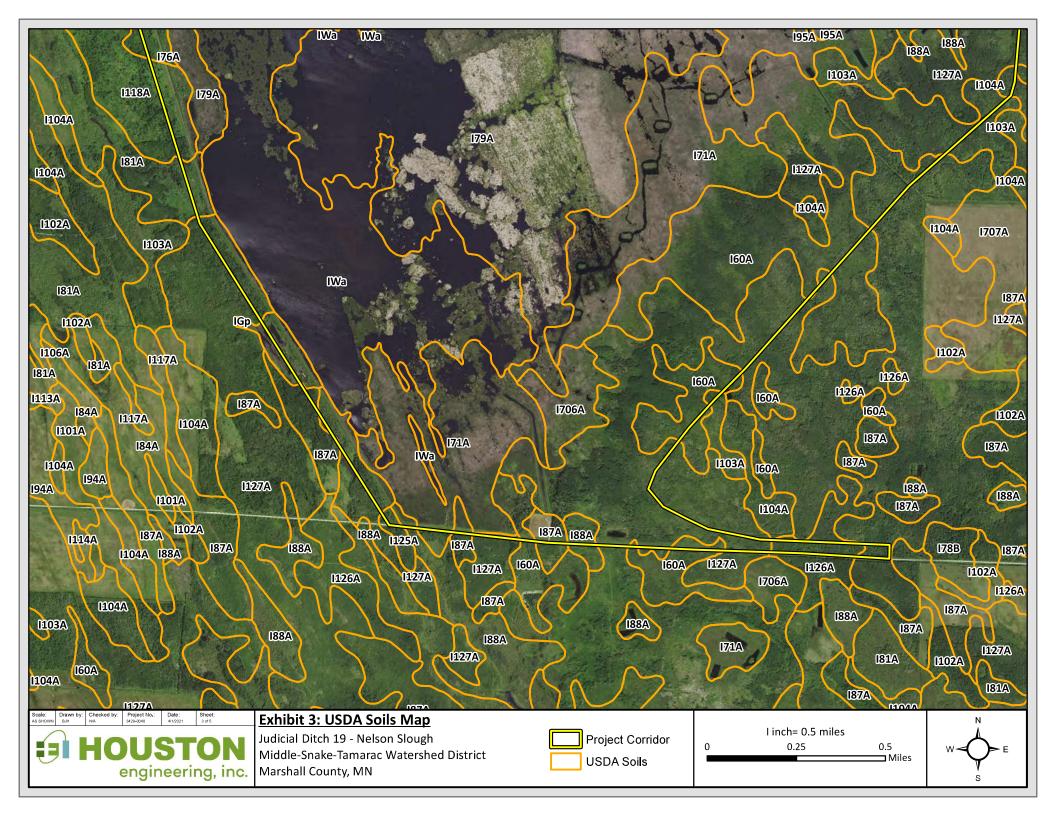
### How?

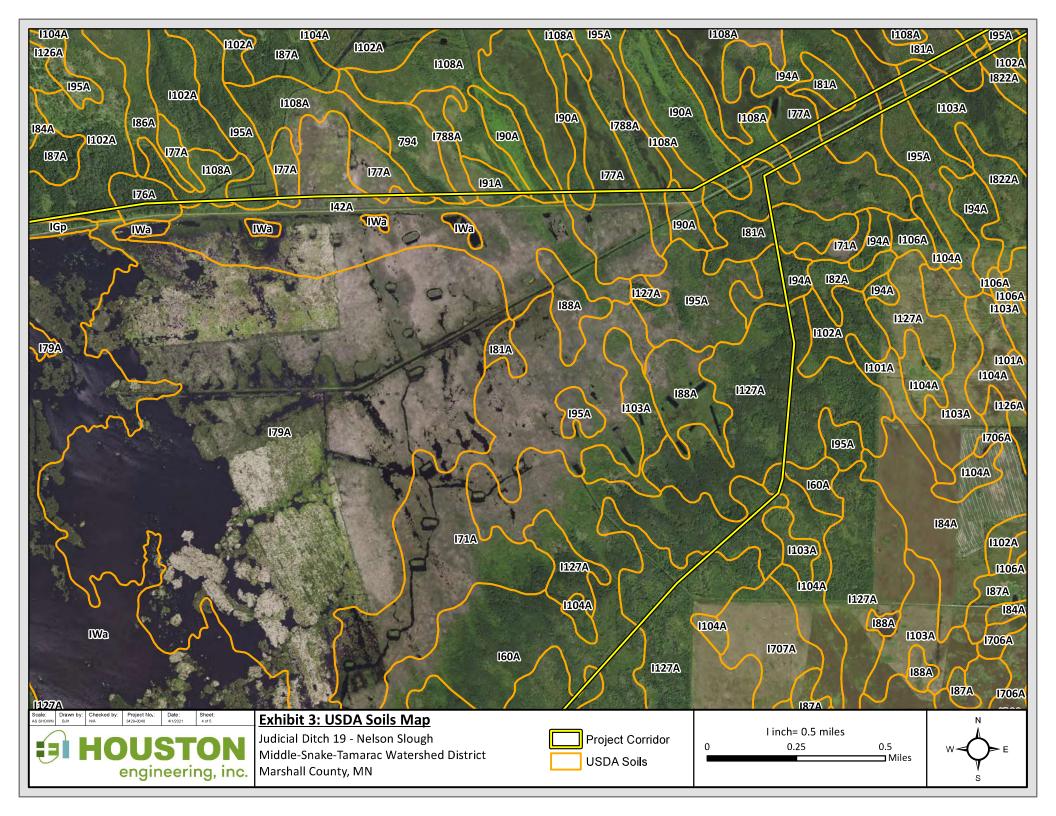
New outlet structure to manage water levels more efficiently for wildlife habitat, water flow, and erosion reduction. Increase levee by approximately 3.5 feet for freeboard as the facility currently doesn't meet today's design standards.

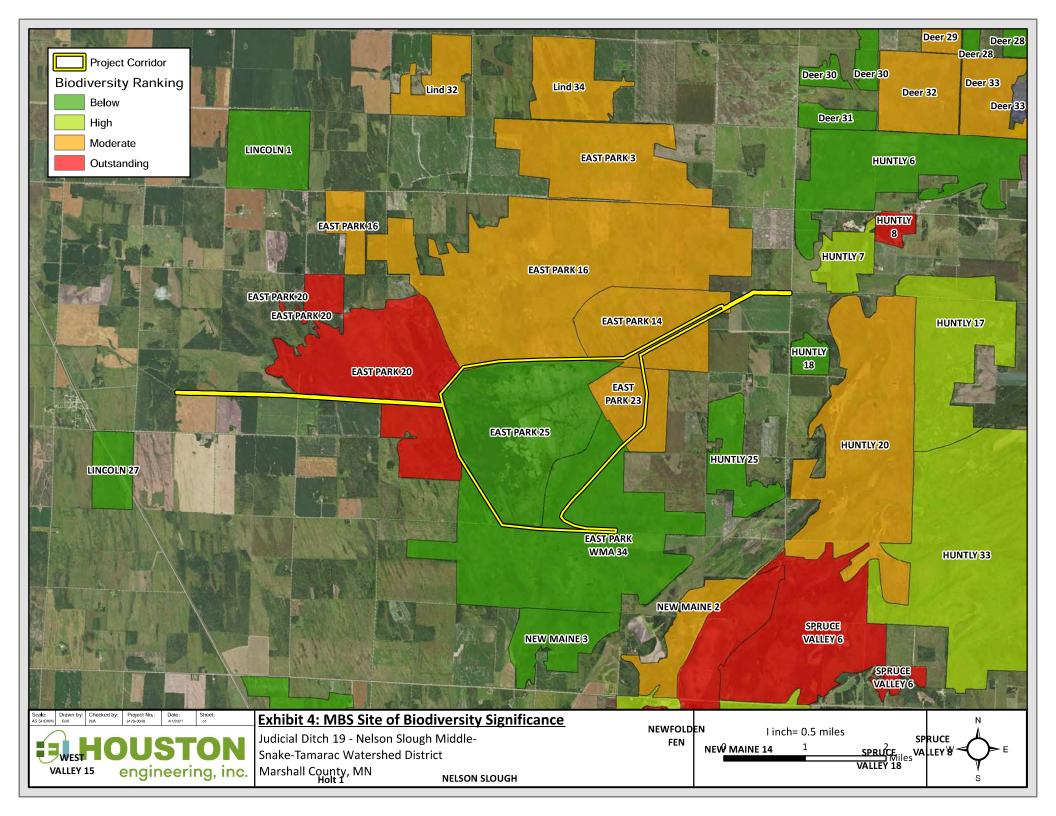












### **Red River Basin Flood Damage Reduction Work Group**

March 7, 2022

Morteza Maher, Administrator Middle-Snake-Tamarac Rivers Watershed District 453 North McKinley Street Warren, MN 56762



Dear Mr. Maher:

At the Red River Basin Flood Damage Reduction Work Group (FDRWG) meeting held on February 16, 2022, Tony Nordby of Houston Engineering presented information on the proposed JD 19/Nelson Slough project in Marshall County, MN. We understand the updated cost estimate for the project is approximately \$8.85 million.

At the same meeting the Red River Basin Coordinator Andrew Graham summarized recent outcomes of the Work Group's Natural Resources Enhancement (NRE) funding procedure as applied to this project. The funding procedure evaluations and formulas yielded a recommendation that the Department of Natural Resources Flood Hazard Mitigation (FHM) Program should fund 73.3 percent of total project cost not funded by other organizations (excluding the District and the Red River Watershed Management Board). This is of course subject to funding availability for the FHM Program as determined through the State legislative process. Mr. Graham also summarized findings of the Work Group's Technical and Scientific Advisory Committee (TSAC), which reviewed the project in January 2022.

Following discussion, the Work Group approved the JD 19/Nelson Slough project by consensus, certifying consistency with the 1998 Red River Basin Mediation Agreement. By this letter, the FDRWG recommends project funding be awarded by the State FHM Program and the Red River Watershed Management Board consistent with their respective procedures. This recommendation may also be provided to any other agencies that have suitable funding programs and to which you may apply.

We hope you find this recommendation to be satisfactory. If you have any questions, please contact one of us or the FDRWG Coordinator (<u>Andrew.Graham@state.mn.us</u>).

Respectfully,

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Theresa Ebbenga FDRWG Co-Chair - MnDNR

a Money

Dan Money FDRWG Co-Chair - RRWMB

Cc: Tony Nordby, HEI Pat Lynch, DNR FHM Program Rob Sip, RRWMB

FDRWG | c/o Red River Basin Coordinator | Minnesota DNR 2115 Birchmont Beach Road NE | Bemidji, MN 56601