



Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2019 Accomplishment Plan

General Information

Date: 07/27/2021

Project Title: Pig's Eye Lake Islands Habitat Restoration and Enhancement

Funds Recommended: \$4,337,000

Legislative Citation: ML 2019, 1st Sp. Session, Ch. 2, Art. 1, Sec. 2, subd. 5(n)

Appropriation Language: \$4,337,000 the first year is to the commissioner of natural resources for an agreement with Ramsey County to restore and enhance wildlife habitat in Pigs Eye Lake, to include constructing islands.

Manager Information

Manager's Name: Scott Yonke

Title:

Organization: Ramsey County Parks and Recreation

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Website: <https://www.ramseycounty.us/residents/parks-recreation>

Location Information

County Location(s): Ramsey.

Eco regions in which work will take place:

- Metro / Urban

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Wetlands
- Prairie

- Forest
- Habitat

Narrative

Abstract

Ramsey County and the U.S. Army Corps of Engineers propose to enhance and restore habitat in Pigs Eye Lake by building islands and marsh to benefit migratory birds, waterfowl, and fish. Island construction would restore wetland habitat and functions that have been lost in the 640-acre backwater due to erosion and degradation and enhance the surrounding area by reducing turbidity, preventing further erosion, and increasing habitat diversity. The project would protect areas of biodiversity significance and improve the Mississippi River wildlife corridor in the heart of the St. Paul metropolitan area.

Design and Scope of Work

Problem: Pigs Eye Lake is a large backwater of the Mississippi River, located in the southeast corner of St. Paul. The lake is shallow, open water, with a maximum depth of about 4 feet. The shallow depth and mucky lake bottom mean that the wind-generated waves cause a significant adverse effect on water quality and substrate stability. The waves also continuously erode the valuable vegetation on the edges of the lake, which has led to an estimated loss of 111 acres of wetland shoreline habitat since 1951. The conditions have created a negative feedback loop with no foreseeable improvements without intervention. Another 37.5 acres of biologically significant marsh and bottomland forest is at risk over the next 50 years, and new vegetation is unable to establish under the current conditions.

Resource Significance: Despite the present poor conditions of Pigs Eye Lake, the area is a rare resource in this stretch of the Mississippi River where the floodplain is narrow and urban development is heavy. The shorelines and floodplain protected by this project have been identified by the Minnesota Biological Survey as areas of either outstanding or moderate biodiversity significance. The adjacent heron rookery is one of the largest in the state. Pigs Eye Lake is part of a network of aquatic corridors with connections to the Mississippi River, the Minnesota River, and Battle Creek. This project would restore, protect, and enhance these resources.

Proposed Plan: The proposed plan is to construct a complex of 6 islands in Pigs Eye Lake. The features were designed to provide a variety of floodplain habitat types, blend in with the natural environment, and create barriers for wind, waves, and visual disturbances to visiting wildlife. Twenty-five acres of islands would be constructed and planted with a mix of native floodplain species. Shallow sandbar habitat is incorporated into the island perimeters. Three islands were specially-designed to establish 17.6 acres of wetland by creating enclosed, protected spaces in their interiors that would be planted with native wetland plants. The islands were strategically placed to serve as barriers to wind and protect the existing valuable shoreline habitat from further erosion.

Outcomes for wildlife: The project would result in numerous habitat improvements, including: protected stopover areas for migrating ducks and waterfowl; preservation of the existing valuable shoreline; cover, spawning, and structural habitat for native fish; sandy areas for turtle nesting; shallow and more stable substrate to encourage macroinvertebrate colonization; water quality improvement due to reduced sediment re-suspension; and incorporation of depth and habitat diversity within the lake.

Collaboration: The project has been extensively coordinated with natural resource agencies and other stakeholders, and has received widespread support. Stakeholder meetings were held throughout the planning process, and representatives from the Minnesota DNR, National Park Service, U.S. Fish and Wildlife Service, and Ramsey County participated in discussions to provide recommendations specific to habitat needs. Federal and

State environmental review processes have been completed. Permitting agencies have not indicated obstacles with the issuance of permits for project construction.

How does the plan address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and list targeted species?

The proposed project's habitat-based approach would benefit numerous species in conservation need. Minnesota's Wildlife Action Plan for 2015-2025 identified that habitat loss, degradation, and fragmentation are the primary stressors affecting Species of Greatest Conservation Need in Minnesota. Restoring and enhancing Pigs Eye Lake would add value to hundreds of acres of floodplain habitat within a major aquatic corridor and avian migratory route. The improved habitat would benefit many species, throughout different critical times of the year, and would increase habitat diversity and resilience to climate change and other future stressors.

Many bird species of conservation need have been documented nearby that rely upon aquatic and wetland habitats would benefit from the project's enhancements, including: northern pintail, American black duck, Sprague's pipit (endangered), common nighthawk, northern harrier, belted kingfisher, black-crowned night heron, and American white pelican (special concern). Because of the proximity to the Pigs Eye Island Heron Rookery SNA, the project would be expected to increase the number of birds supported at the rookery or improve their nesting success. Sandy areas incorporated into the islands would serve as valuable nesting areas for threatened turtle species, including the Blanding's turtle and wood turtle.

Describe how the plan uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey:

Pigs Eye Lake is located within several nationally- and locally-recognized important habitat corridors. The area is central to the Mississippi Flyway, the migratory corridor used by forty percent of North America's waterfowl and shorebirds. Pigs Eye Lake lies within the "Mississippi River Twin Cities Important Bird Area" designated by the Audubon Society, where over 200 bird species have been observed. The lake is directly adjacent to an area designated as a site of outstanding biodiversity significance by the Minnesota Biological Survey – the Pigs Eye Island Scientific and Natural Area – which supports a mixed-species heron rookery totaling over 1,600 nesting pairs, and is one of four locations within Minnesota where the yellow-crowned night herons are known to nest. Pigs Eye Lake has a direct connection to 32 miles of the Mississippi River and almost 250 miles of the Minnesota River. At least 72 species have been recently documented in Mississippi River Pool 2.

At a local level, Pigs Eye Lake is one of few large, off-channel areas within the floodplain near St. Paul that has been mostly preserved from development, but which continues to be degraded by unaddressed stressors such as wind-induced waves. The shoreline habitat being degraded includes 327 acres of that is recognized by the Minnesota Biological Survey as a site of moderate biodiversity significance. Significant gains in habitat can be made by protecting and preserving the existing quality habitat around the lake from further erosion and by enhancing the shallow open-water interior. Both of these goals can be met by strategically constructing habitat within the center of the lake which also would then serve as a wind barrier to protect the existing shoreline.

Which two sections of the Minnesota Statewide Conservation and Preservation Plan are most applicable to this project?

- H2 Protect critical shoreland of streams and lakes

- H6 Protect and restore critical in-water habitat of lakes and streams

Which two other plans are addressed in this program?

- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife
- Minnesota DNR Strategic Conservation Agenda

Which LSOHC section priorities are addressed in this program?

Metro / Urban

- Protect habitat corridors, with emphasis on the Minnesota, Mississippi, and St. Croix rivers (bluff to floodplain)

Does this program include leveraged funding?

Yes

Explain the leverage:

The main portion of the leverage funds will come from the USACE Continuing Authorities Program, Beneficial Use of Dredged Material, Section 204 of the Water Resources Development Act of 1992, as amended. With additional funds coming from the USACE Channel Management Budget. These funds are confirmed.

USACE Continuing Authorities Program, Beneficial Use of Dredged Material, Section 204 of the Water Resources Development Act of 1992, as amended. USACE Channel Management Budget.

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.

Lessard-Sams funding request for the Pig's Eye Lake Islands Habitat Restoration and Enhancement Project is not supplanting existing funds from a previous project.

Non-OHF Appropriations

Year	Source	Amount
FY15-FY17	Section 204 of the WRDA of 1992, as amended	\$650,000

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

Ramsey County and the Corps will maintain the project to ensure sustainability of the islands. A post-construction monitoring and adaptive management plan has been prepared that will guide monitoring and maintenance actions for 10 years following construction. Ramsey County will then assume responsibility for long-term maintenance and will integrate it into the master plan update for the Pigs Eye Lake section of Battle Creek Regional Park. Shared short-term and long-term management actions will be funded with County budget through Regional Park and Trail Operation and Trail Maintenance funds.

Initial short-term management will be conducted by the Corps and costs would be shared between the Corps and Ramsey County. Performance indicators include waterbird counts, vegetation establishment, island elevation surveys, water quality monitoring, and shoreline erosion analyses. These actions are detailed in the project

outcomes table. The long-term maintenance would focus on vegetation maintenance, erosion control, and wildlife management to include removal of invasive species and replanting as required.

Maintenance needs are anticipated to be low because the island design has incorporated lessons learned from island building projects on the Mississippi over the past 30 years. The islands are designed to be geotechnically stable and to withstand flooding, waves, and ice.

Actions to Maintain Project Outcomes

Year	Source of Funds	Step 1	Step 2	Step 3
2025	USACE/Ramsey County	Upland Seedling Survival and Growth Monitoring	Supplemental planting or targeted herbivory control, as necessary	-
2030	USACE/Ramsey County	Marsh and Wet Prairie Establishment Monitoring	Supplemental planting, chemical control, etc., as necessary	-
2034	USACE/Ramsey County	Upland Long-term Seedling Survival and Growth Monitoring	Supplemental Planting, fencing, herbicide application, or mowing, as necessary	-
2034	USACE/Ramsey County	Marsh and Wet Prairie Establishment Monitoring	Supplemental planting, chemical control, etc., as necessary	-
2034 and beyond	Ramsey County	Monitor vegetation, stability, and wildlife use	Removal of invasive species and replanting as necessary to maintain ecological success.	-
2025	USACE/Ramsey County	Marsh and Wet Prairie Establishment Monitoring	Supplemental planting, chemical control, etc., as necessary	-
2025	USACE/Ramsey County	Water Quality (Turbidity or TSS) Monitoring	Adaptive Management as necessary	-
2025-2029	USACE/Ramsey County	Fall Migratory Waterbird Use Survey	Adaptive Management as necessary	-
2026 & 2029	USACE/Ramsey County	Island Settlement and Geotechnical Monitoring	Adaptive Management as necessary	-
2027	USACE/Ramsey County	Upland Long-term Seedling Survival and Growth Monitoring	Supplemental Planting, fencing, herbicide application, or mowing, as necessary	-
2027	USACE/Ramsey County	Marsh and Wet Prairie Establishment Monitoring	Supplemental planting, chemical control, etc., as necessary	-
2029 & 2034	USACE/Ramsey County	Shoreline Erosion Monitoring	Adaptive Management as necessary	-
2030	USACE/Ramsey County	Upland Long-term Seedling Survival and	Supplemental Planting, fencing,	-

		Growth Monitoring	herbicide application, or mowing, as necessary	
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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?

Yes

Where does the activity take place?

- County/Municipal
- Public Waters
- Other : Mississippi National River and Recreational Area

Land Use

Will there be planting of any crop on OHF land purchased or restored in this program?

No

Timeline

Activity Name	Estimated Completion Date
Execute Project Partnership Agreement with USACE	June 2019
Begin Plans and Specifications	June 2019
Complete Plans and Specifications	October 2020
Advertise Project for Bids	December 2020
Award Contract	June 2021
Complete island construction	September 2023
Complete turf establishment and erosion protection of islands	October 2024

Date of Final Report Submission: 12/20/2024

Budget

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

Totals

Item	Funding Request	Antic. Leverage	Leverage Source	Total
Personnel	-	-	-	-
Contracts	\$4,337,000	\$11,232,800	Federal - Army Corps of Engineers	\$15,569,800
Fee Acquisition w/ PILT	-	-	-	-
Fee Acquisition w/o PILT	-	-	-	-
Easement Acquisition	-	-	-	-
Easement Stewardship	-	-	-	-
Travel	-	-	-	-
Professional Services	-	-	-	-
Direct Support Services	-	-	-	-
DNR Land Acquisition Costs	-	-	-	-
Capital Equipment	-	-	-	-
Other Equipment/Tools	-	-	-	-
Supplies/Materials	-	-	-	-
DNR IDP	-	-	-	-
Grand Total	\$4,337,000	\$11,232,800	-	\$15,569,800

Amount of Request: \$4,337,000

Amount of Leverage: \$11,232,800

Leverage as a percent of the Request: 259.0%

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 appropriation recommendation was nearly equal to the original proposed requested amount. Thus no changes are planned.

Describe and explain leverage source and confirmation of funds:

The main portion of the leveraged funds will come from the USACE Continuing Authorities Program, Beneficial Use of Dredged Material, Section 204 of the Water Resources Development Act of 1992, as amended. With additional funds coming from the USACE Channel Management Budget. These funds are confirmed.

Contracts

What is included in the contracts line?

The contracts line include the contract for which the project will be constructed. The contracts line includes leveraged funds which will be utilized for transportation of the building material and the actual construction of the project.

Federal Funds

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

Yes

Are the funds confirmed?

Yes

Is Confirmation Document attached?

[Yes](#)

- In Kind : \$11,232,800

Output Tables

Acres by Resource Type (Table 1)

Type	Wetland	Prairie	Forest	Habitat	Total Acres
Restore	18	0	12	0	30
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	0	0	0	556	556
Total	18	0	12	556	586

Total Requested Funding by Resource Type (Table 2)

Type	Wetland	Prairie	Forest	Habitat	Total Funding
Restore	\$1,084,300	-	\$1,084,200	-	\$2,168,500
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-
Protect in Easement	-	-	-	-	-
Enhance	-	-	-	\$2,168,500	\$2,168,500
Total	\$1,084,300	-	\$1,084,200	\$2,168,500	\$4,337,000

Acres within each Ecological Section (Table 3)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Acres
Restore	30	0	0	0	0	30
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	556	0	0	0	0	556
Total	586	0	0	0	0	586

Total Requested Funding within each Ecological Section (Table 4)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest	Total Funding
Restore	\$2,168,500	-	-	-	-	\$2,168,500
Protect in Fee with State PILT Liability	-	-	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-	-	-
Protect in Easement	-	-	-	-	-	-
Enhance	\$2,168,500	-	-	-	-	\$2,168,500
Total	\$4,337,000	-	-	-	-	\$4,337,000

Average Cost per Acre by Resource Type (Table 5)

Type	Wetland	Prairie	Forest	Habitat
Restore	\$60,238	-	\$90,350	-
Protect in Fee with State PILT Liability	-	-	-	-
Protect in Fee w/o State PILT Liability	-	-	-	-
Protect in Easement	-	-	-	-
Enhance	-	-	-	\$3,900

Average Cost per Acre by Ecological Section (Table 6)

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	N. Forest
Restore	\$72,283	-	-	-	-
Protect in Fee with State PILT Liability	-	-	-	-	-
Protect in Fee w/o State	-	-	-	-	-

PILT Liability					
Protect in Easement	-	-	-	-	-
Enhance	\$3,900	-	-	-	-

Target Lake/Stream/River Feet or Miles

Pigs Eye Lake

Outcomes

Programs in metropolitan urbanizing region:

- A network of natural land and riparian habitats will connect corridors for wildlife and species in greatest conservation need ~ *There is limited availability of habitat in the St. Paul metro area due to heavy development and the naturally narrow floodplain. Pigs Eye Lake is one of the few large backwaters in the area but is currently degraded, windswept, and devoid of vegetation or habitat diversity. The proposed project would enhance and restore the area to provide important and locally rare stopover habitat for migrating waterfowl and other birds along the Mississippi Flyway. The project would result in increased vegetation and improved substrate for spawning, shelter, and food resources for fish, reptiles, and other species of conservation need.*

Parcels

For restoration and enhancement programs ONLY: Managers may add, delete, and substitute projects on this parcel list based upon need, readiness, cost, opportunity, and/or urgency so long as the substitute parcel/project forwards the constitutional objectives of this program in the Project Scope table of this accomplishment plan. The final accomplishment plan report will include the final parcel list.

Parcel Information

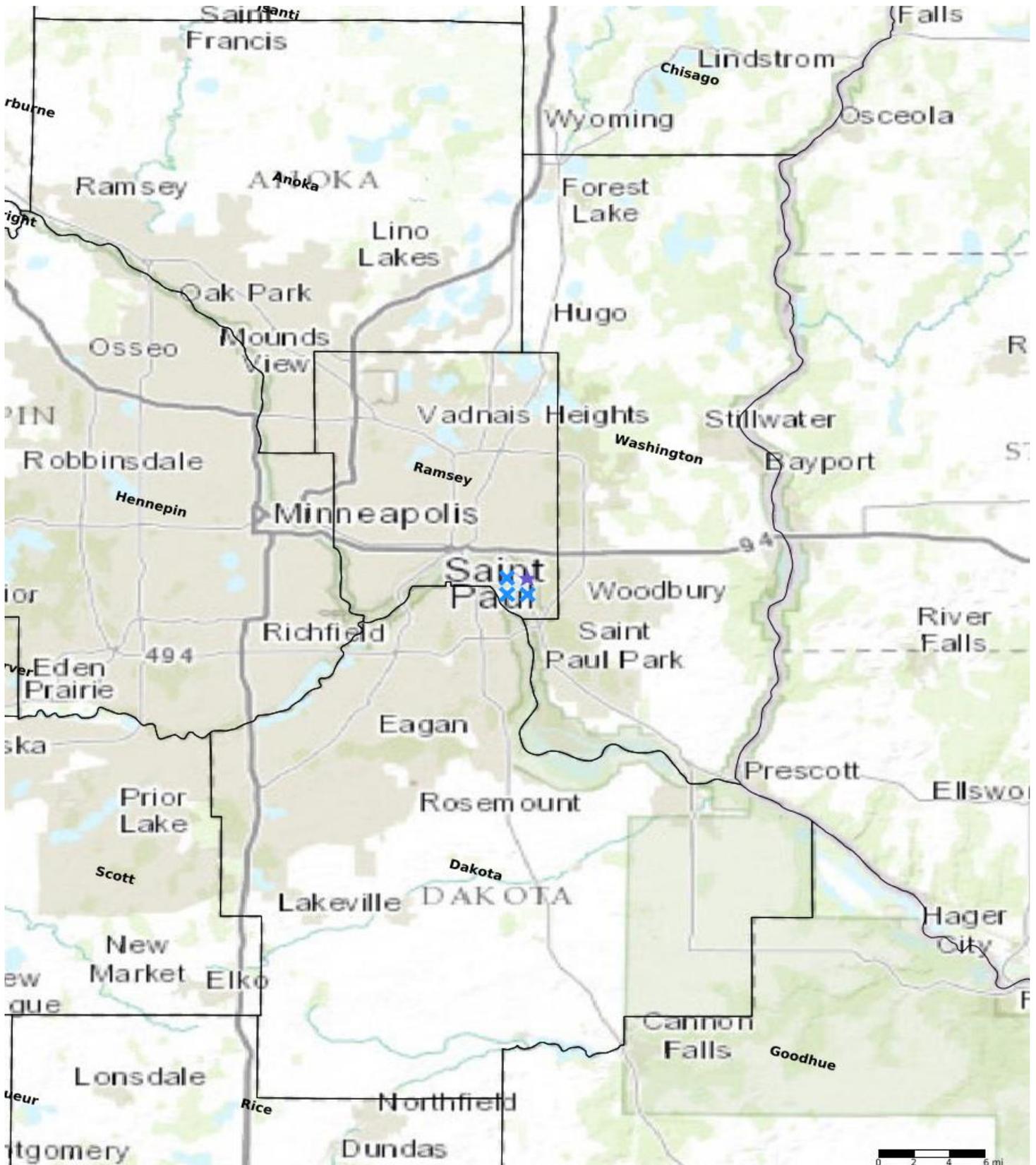
Sign-up Criteria?

No

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

Restore / Enhance Parcels

Name	County	TRDS	Acres	Est Cost	Existing Protection
Pigs Eye Lake SE	Ramsey	02822214	134	\$0	Yes
Pigs Eye Lake NE	Ramsey	02822211	76	\$0	Yes
Pigs Eye Lake SW	Ramsey	02822215	394	\$0	Yes
Pigs Eye Lake NW	Ramsey	02822210	138	\$0	Yes



- Protect in Easement
- ▲ Protect in Fee with PILT
- Protect in Fee W/O PILT
- ★ Restore
- ✦ Enhance
- ⊕ Other

Parcel Map
Pig's Eye Lake Islands Habitat Restoration and Enhancement
 (Data Generated From Parcel List)