

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2015 Accomplishment Plan



Date: December 20, 2017

Program or Project Title: Lake Bemidji South Shore Restoration and Enhancement

Funds Recommended: \$ 1,650,000

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Legislative Citation: ML 2015, First Sp. Session, Ch. 2, Art. 1, Sec. 2, Subd. 5(d)

Appropriation Language: \$1,650,000 in the first year is to the commissioner of natural resources for an agreement with the city of Bemidji to restore and enhance fish habitat on Lake Bemidji. A list of proposed restorations and enhancements must be provided as part of the required accomplishment plan.

County Locations: Beltrami

Regions in which work will take place:

- Northern Forest

Activity types:

- Enhance
- Restore
- Public Education

Priority resources addressed by activity:

- Habitat

Abstract:

After a century of industrial use, project will bring the Lake Bemidji's South Shore to its original state. The city will remove approximately 9300 cubic yards of woody debris from the lake-bottom and shore to restore and enhance aquatic habitat.

Design and scope of work:

The Lake Bemidji South Shore Restoration and Enhancement project will transform a blighted shoreline and disturbed lake bed of one of northern Minnesota's finest urban lakes into a model of restoration to its native state, improving water quality and aquatic habitat. The project is the final step of a restoration effort led by the City of Bemidji, in partnership with the Minnesota DNR and DEED.

Lake Bemidji is the first major lake in the Upper Mississippi River watershed. It supports a diverse high quality fishery for walleye, northern pike, yellow perch and muskie; dependent on high quality habitats.

The south shore of Lake Bemidji has a long history of industrial use which altered the shoreline and impacted water quality. The site

housed several industries, primarily forestry companies. With their closing and/or relocation, the site became a blighted brownfield. Adjacent to downtown Bemidji, the project includes approximately 4/10 mile of shoreline.

For the past six years, the city of Bemidji, partnered with DNR and DEED to clean-up the site, and restore the shoreline to its native state. Specifically:

- The city purchased the site and placed it in the MPCA Voluntary Investigation and Clean-Up (VIC) Program, and using a DEED redevelopment grant, cleaned up roughly 50 acres of land.
- The DNR purchased land from the city and extended the Paul Bunyan State Trail through the site.
- The city permanently designated the lakeshore between the trail and the lake as public land.
- The DNR purchased a large parcel of the eastern shoreline as a DNR Aquatic Management Area.

Much work remains on the lakeshore and in lake bed. Woody debris from the old Crookston Lumber mill remains within the lake. Approximately 9,400 cubic yards of woody debris remains in the south shore of the lake bottom and shore. The debris covers 1,500 feet of lakeshore, runs out 200 feet from the shore and is 1 to 4 feet deep.

The lakeshore needs to be restored to its original state, including native vegetation, trees, shrubs and natural erosion control. The land between the trail and the lake (3.1 acres) will be replanted with native vegetation, improving water quality and habitat in the lake and 0.6 acre will be restored for use by the public as a swimming beach, rest stop along the bike trail, and education area; totaling 3.7 acres restored for ecological and public use.

The project will return the south shore of Lake Bemidji to its native state for the first time in a century, improve the shoreline, and address water quality and aquatic habitat issues in an urban-recreational setting.

Once restoration and enhancement is complete, the city plans to develop (with funding outside Outdoor Heritage Council support) a regional park that will provide public education on water quality and aquatic habitat restoration. The park will utilize roughly 20 percent of the shoreline. The project balances environmental protection and enhancement and public use and education on one of northern Minnesota's premier lakes.

The following is proposed for Outdoor Heritage Fund support:

Shoreline Restoration:

The historic industrial use of the site altered the south shoreline of Lake Bemidji. The effect reduced water quality and had a negative impact on aquatic habitat. In May, 2014, DNR specialists assessed the south shore site to determine the potential of restoring the site (assessment attached). The DNR recommended substantial clean-up and restoration work and believes the restoration will be visibly appealing and improve water quality, habitat and erosion control.

The restoration plan includes:

- Site monitoring
- Site preparation/treatment of weeds
- Installation of native seed mixes
- Installation of 10,000 native plugs
- Planting 800 (#2) shrubs
- Planting 10 (#10) native trees
- Weed control
- Installation of erosion control

The city estimated improvements to cost \$150,000. The city is committed to maintaining the improvements long term through its parks and recreation department.

Woody Debris Removal:

The city has studied the woody debris issues and completed design plans call for lowering the lake level with a temporary cofferdam (protecting the fish) and excavating the debris out of the lake.

The city has received the following permits:

- DNR Water Permit
- Army Corps of Engineers Permit
- MPCA Solid Waste/Beneficial Reuse

- Section 106 Review
- Bois Forte Band and Leech Lake Band Clearance Letter

The construction work was publicly bid and specifies the use of a water barrier cofferdam, Aquabarrier, Portadam, or equal. The Engineer reviewed these brands and permits are based on the specifications. MPCA VIC Program costs for remediation of contaminated soil/sediment is a fee program so costs will be incurred for review.

Approximately 9,400 cubic yards of woody debris was removed and replaced with sand. The excavated area extends 200 feet out from the shore, covering 1,440 feet of shoreline and depth of 1 to 4 feet. Overall, 240,000 square feet of Lake Bemidji would be cleaned up and restored.

The woody debris was screened and primarily used as clean backfill or properly disposed if contaminated. Approximately 390 tons of contaminated soil and 750 tons of contaminated sediment/wood debris was managed and disposed at a permitted landfill.

The City spent \$63,800 in design and permitting. The estimated cost to restore the lake bed is \$1.5 million. The City plans to use Landmark Environmental and Anderson Engineering of MN for construction management because they designed, assisted in bidding, and acquired permits. The City believes they provide a high quality and reasonably priced services. Landmark has staff in Bemidji, but engineers and staff will travel from Twin Cities to Bemidji for meetings and construction.

Summary:

Lake Bemidji is one of northern Minnesota's most critical natural assets. The City of Bemidji requested \$1.65 million in Outdoor Heritage funding to complete the shoreline restoration and woody debris removal. The restoration and enhancement will improve water quality and habitat to native conditions.

How does the request address MN habitats that have: historical value to fish and wildlife, wildlife species of greatest conservation need, MN County Biological Survey data, and/or rare, threatened and endangered species inventories:

Lake Bemidji is the first major lake in the Upper Mississippi River watershed. It supports a diverse, high quality fishery for walleye, northern pike, yellow perch and muskie. These species are dependent on high quality fish habitats. The south shore of Lake Bemidji has long a history of industrial use. These uses have altered the shoreline and impacted water quality. Efforts to remove woody debris from the lake bed and restore native vegetation along the south shore will improve the structural integrity of the shoreline and lake bed and help address water quality issues in an urban-recreational setting.

The project restores the lake bottom and shoreline to match the existing lake which will promote wildlife expansion into this area. Also the project reduces exposure of wildlife to debris and to contaminated sediments and soil.

Describe the science based planning and evaluation model used:

The site, enrolled in the MPCA Brownfields Program, has soil and sediment contamination. The MPCA follows a risk-based approach and is based on risk to human health and the environment and uses risk assessment, soil physics, hydrogeology and remediation technologies and takes into account receptors and risk exposure pathways.

Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this program:

- H2 Protect critical shoreland of streams and lakes
- H6 Protect and restore critical in-water habitat of lakes and streams

Which other plans are addressed in this program:

- Mississippi River Headwaters Comprehensive Plan
- Minnesota Department of Natural Resources: Fish Habitat Plan

Which LSOHC section priorities are addressed in this program:

Northern Forest:

- Protect shoreland and restore or enhance critical habitat on wild rice lakes, shallow lakes, cold water lakes, streams and rivers, and

spawning areas

Relationship to other funds:

- Legacy Funds

Describe the relationship of the funds:

The city will be requesting funding from Legacy Funds to partner with the city to develop a regional park on site. The park would be a showcase facility that will statewide model on how to successfully balance public access, economic interests and aquatic restoration activities.

How does this program accelerate or supplement your current efforts in this area:

The project is a natural next step in the City of Bemidji's efforts to restore and enhance Lake Bemidji. In 2010, in partnership with the DNR, the lakeshore adjacent to the proposed project site was purchased and established as a permanent Lake Bemidji Aquatic Management Area. In addition, the DNR's Paul Bunyan State Trail was extended adjacent to the AMA and project site so support public education and access to the area.

The project site itself is located between the Paul Bunyan State Trail and Lake Bemidji. The City owns the land and have placed it in permanent public ownership. The site is roughly 3.7 acres of shoreline and 5.5 acres within Lake Bemidji (industrial wood chip removal).

In addition to this project, the city, through a Shoreland Habitat Project Grant, created a shoreland buffer in Cameron Park on Lake Bemidji in 2010. The shoreland Restoration project focused on 500 ft of the shore in the traditional park area. Approximately 2000 trees, shrubs and plugs were planted along 500 ft of the shoreland. The goal was to create a buffer zone that would reduce erosion, increase wildlife habitat, deter geese and other nuisance animals, and improve water quality.

Per MS 97A.056, Subd. 24, Any state agency or organization requesting a direct appropriation from the OHF must inform the LSOHC at the time of the request for funding is made, 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:

Not Listed

Describe the source and amount of non-OHF money spent for this work in the past:

Appropriation Year	Source	Amount
2010	Minnesota DNR	\$400,000
2010	City of Bemidji; Shoreland Habitat Project Grant	\$47,000

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

The short term maintenance activities for the restoration project include weeding, watering, and supplemental planting. The City of Bemidji will contract with the Minnesota Conservation Crew to provide labor for weeding and supplemental planting during the initial project years. The City Parks Department will water the site as needed utilizing the city water truck.

Long term maintenance will be a function of the City of Bemidji Parks Department and coordinated volunteer efforts. The Minnesota Conservation Crew will be utilized by the City to ensure the buffer area is properly weeded and planted (if necessary) into the long term. Weeding will take place at least twice a year – once in the spring and once in the fall to ensure the native species are thriving and invasive species are removed. The site will be evaluated on an annual basis. Watering and replanting will be done as needed.

Ongoing maintenance of the restoration work within Lake Bemidji will include annual clean-up of any additional woody debris that may have drifted in with the current. The City of Bemidji will be responsible for the annual maintenance of the site.

Explain the things you will do in the future to maintain project outcomes:

Year	Source of Funds	Step 1	Step 2	Step 3
2019	City of Bemidji	Weed control and site maintenance	Additional woody debris removal as needed	
2020+	City of Bemidji	Weed control and site maintenance	Additional woody debris removal as needed	

Activity Details:

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

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **Not Listed**

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

Is the activity on permanently protected land per 97A.056, subd 13(f), tribal lands, and/or public waters per MS 103G.005, Subd. 15 - **Yes (County/Municipal, Public Waters)**

Accomplishment Timeline:

Activity	Approximate Date Completed
Develop plans, specifications, designs and permitting	May/June 2015
Advertise for bids	May 2015
Award contract	July 2015
Start clean-up, restoration and enhancement activity	August 2015
Plant shrubs, plugs, trees and maintain vegetation	May 2016
Weed control/replace vegetation as needed	2016-2018
Clean-up, restoration and enhancement activity complete	September 2018
Regional Park Development	October 2017

Date of Final Report Submission: 12/20/2018

Federal Funding:

Do you anticipate federal funds as a match for this program - **No**

Outcomes:

Programs in the northern forest region:

- Improved aquatic habitat indicators

Budget Spreadsheet

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

How will this program accommodate the reduced appropriation recommendation from the original proposed requested amount

Not Listed

Total Amount of Request: \$ 1650000

Budget and Cash Leverage

BudgetName	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$10,000	\$0		\$10,000
Contracts	\$1,495,000	\$0		\$1,495,000
Fee Acquisition w/ PILT	\$0	\$0		\$0
Fee Acquisition w/o PILT	\$0	\$0		\$0
Easement Acquisition	\$0	\$0		\$0
Easement Stewardship	\$0	\$0		\$0
Travel	\$1,000	\$0		\$1,000
Professional Services	\$135,000	\$62,000	City of Bemidji	\$197,000
Direct Support Services	\$0	\$0		\$0
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$6,000	\$0		\$6,000
Supplies/Materials	\$3,000	\$0		\$3,000
DNR IDP	\$0	\$0		\$0
Total	\$1,650,000	\$62,000		\$1,712,000

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
City Engineer	0.00	0.00	\$10,000	\$0		\$10,000
Total	0.00	0.00	\$10,000	\$0		\$10,000

Amount of Request: \$1,650,000

Amount of Leverage: \$62,000

Leverage as a percent of the Request: 3.76%

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	6	6
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	3	3
Total	0	0	0	9	9

Table 2. Total Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$1,500,000	\$1,500,000
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	\$150,000	\$150,000
Total	\$0	\$0	\$0	\$1,650,000	\$1,650,000

Table 3. Acres within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	0	0	0	0	6	6
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	0	0	0	3	3
Total	0	0	0	0	9	9

Table 4. Total Funding within each Ecological Section

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
Restore	\$0	\$0	\$0	\$0	\$1,500,000	\$1,500,000
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	\$0	\$0	\$0	\$150,000	\$150,000
Total	\$0	\$0	\$0	\$0	\$1,650,000	\$1,650,000

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$0	\$0	\$0	\$250000
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$50000

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	\$0	\$0	\$0	\$0	\$250000
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	\$0	\$50000

Target Lake/Stream/River Feet or Miles

4/10 mile of lakeshore

Parcel List

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.

Section 1 - Restore / Enhance Parcel List

Beltrami

Name	T RDS	Acres	Est Cost	Existing Protection?
South Shore of Lake Bemidji	14633215	9	\$1,650,000	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

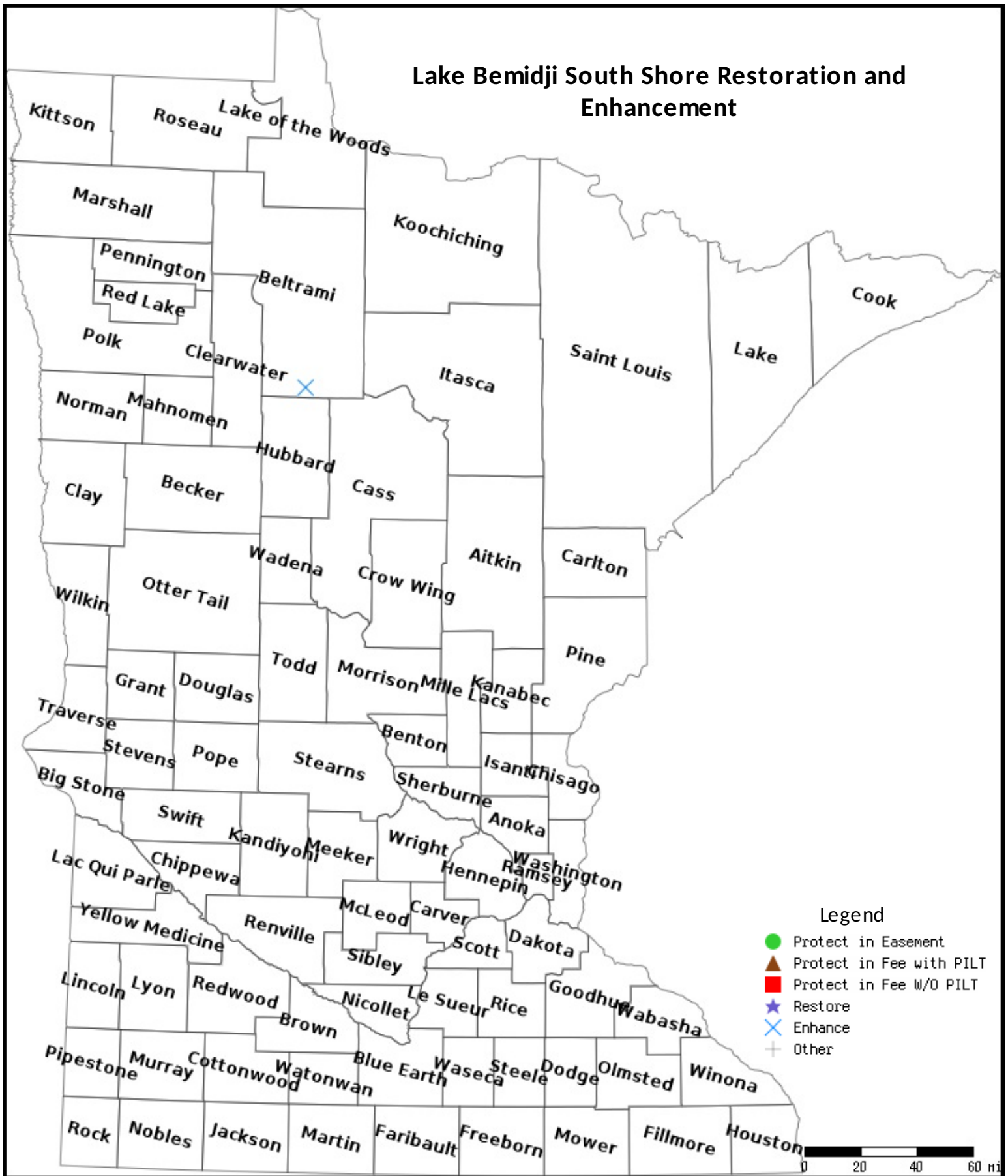
Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

Section 3 - Other Parcel Activity

No parcels with an other activity type.

Parcel Map



Data Generated From Parcel List