

# Lessard-Sams Outdoor Heritage Council

## Laws of Minnesota 2017 Accomplishment Plan



**Date:** October 10, 2016

**Program or Project Title:** Lake Wakanda Enhancement Project

**Funds Recommended:** \$ 921,000

**Manager's Name:** Loren Engelby

**Organization:** Kandiyohi County

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**Legislative Citation:** ML 2017, Ch. X, Art. X, Sec. X

**Appropriation Language:**

**County Locations:** Kandiyohi

**Regions in which work will take place:**

- Prairie

**Activity types:**

- Enhance

**Priority resources addressed by activity:**

- Habitat

### Abstract:

Kandiyohi County's Lake Wakanda Enhancement Project is a one-time funding request to construct four water control structures and fish barriers. This comprehensive project will protect and enhance critical fish and wildlife habitat on the 1,754-acre shallow lake. Located at the headwaters of the South Fork of the Crow River, which flows into the Mississippi, Lake Wakanda is part of a prairie chain of lakes near Willmar, Minnesota. Using a systems approach, Kandiyohi County will maximize recent watershed improvements and current investments of cooperating partners to enhance Lake Wakanda's fish, wildlife and non-game habitat.

### Design and scope of work:

Lake Wakanda is a state-designated waterfowl feeding and resting area and provides habitat for waterfowl, migratory shorebirds, colonial nesting birds, fur-bearing animals, fish and other species. The lake is primarily managed for sport fishing/angling and stocked with walleyes by Minnesota DNR and local sportsmen groups. Its watershed covers approximately 39 square miles—a watershed to lake ratio of 14:1. It is susceptible to high nutrient inputs and excessive water levels from agricultural and municipal runoff. These influences create high turbidity, providing optimal conditions for undesirable fish species, such as the Common Carp. The high density of carp exacerbates Lake Wakanda's poor habitat and water quality. This shallow lake is currently hypereutrophic and supports very little aquatic plant growth, which suppresses desirable species abundance.

The scope of Kandiyohi County's Lake Wakanda Shallow Lake Enhancement Project is to build a series of water control structures and fish barriers at four locations:

- Public water course on the south side of Lake Wakanda, connecting to Big Kandiyohi Lake, a 2,692-acre recreational lake. The sheet-

pile weir will have removable stop-logs and a fish barrier.

- Replacement of Fleckten's Bridge, a former cart-way crossing, with a concrete box culvert connecting to the east bay of Lake Wakanda, leading to Little Kandiyohi Lake. The fabricated culvert will include removable stop-logs and a fish barrier.
- Replacement of an existing County Road #8 sheet-pile structure with a new fish barrier. Its purpose is to control fish movement from downstream lakes and streams entering Wakanda.
- Construction of a road safe culvert and fish barrier along County Road 123 to isolate fish from the west bay of Lake Wakanda, a designated bay for wildlife.

Priorities were determined by cooperating partners consisting of local resource managers and citizens. The Kandiyohi County Lake Wakanda Enhancement Project uses The Cooperative Enhancement Plan for Lake Wakanda (see attachment) as its source for its three primary goals:

- (1) To address the ecosystem and critical lake habitat needs for aquatic plant life, waterfowl, shorebirds, other game and non-game species and a healthy diverse fish community;
- (2) To construct two variable crest water control structures with fish barriers and two stand-alone fish barriers at two shallow bays;
- (3) To enhance fish and wildlife habitat through active management and provide greater recreational opportunities for the public.

The Project's team of ten partners is committed to enhancing the habitat and ecosystem diversity in Lake Wakanda. Improvements will address aquatic habitat and water quality while positively affecting its prairie chain of lakes—Eleanor, Little Kandiyohi, Kasota, Swan, Minnetaga, Big Kandiyohi and Lillian.

Given the synergy of the partners and current investments, the group feels strongly in-lake tools are now necessary to optimize efforts. Local support to manage water levels on Lake Wakanda is overwhelming. Legal action to drawdown water levels is secured through Minnesota Statute 103G.408. Land rights necessary for construction are secured by the County. Preliminary construction along with the operation and maintenance plans are complete. This project is ready to go.

## **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:**

This project is located in Bird Conservation Region 11 (BCR) Prairie Pothole Region and will enhance shallow lake habitat conditions, benefiting wetland wildlife and help address priority waterfowl species and other species of State concern:

### **Waterfowl:**

High Priority Species (5): Mallard, Blue-winged Teal, Lesser Scaup, Greater Scaup, Northern Pintail

Other Priority Species (5): Wood Duck, Redhead, Canvasback, Ring-necked Duck, American Wigeon

### **Non-game and Other Wetland Associated Migratory Birds:**

American Bittern\*, Northern Harrier\*, Yellow Rail, both Hudsonian and Marbled Godwit, and Wilson's Phalarope\*, which populate Minnesota during spring and fall migration. \*Use as a breeding habitat.

Temporary water level draw-downs will increase the interspersions of emergent plants and shallow water habitat for wading birds and increase aquatic invertebrates for Wilson's Phalarope

Two Bald Eagle nests are documented

### **High Priority Shorebirds:**

Several high priority shorebird species will directly benefit from this project during shallow lake draw-downs that expose mudflats and shallow water conditions for foraging habitat during spring and fall: Piping Plover, American Golden Plover, Solitary Sandpiper, Hudsonian, Marbled Godwit and Wilson's Phalarope

### **Endangered Species:**

There are no federally threatened, endangered or proposed candidate species in the immediate area. However, the proposal area does include documented records for eight state-listed species as follows:

5 birds: Trumpeter Swan, Loggerhead Shrike, Horned Grebe, Common Tern, Peregrine Falcon

Old-Growth Hardwood Forest: Basswood, Kentucky Coffee Tree, Oak and Elm

This project will benefit all native fish and wildlife species that utilize shallow lake habitats. Refer to <http://nabci-us.org/bcr11.html>.

## **Describe the science based planning and evaluation model used:**

Agricultural Best Management Practices (BMPs) as well as municipal stormwater and wastewater upgrades are contributing to the attainment of enhancing habitat and water quality conditions on Lake Wakanda.

Tools for water level drawdown will promote vegetation growth. Fish control measures using fish barriers will limit the mobility of Common Carp throughout Lake Wakanda basin after winterkill. Common Carp have proven to produce massive year-classes in Lake Wakanda after winterkill, ultimately impacting the entire chain and downstream lakes. Lake Wakanda is the headwaters of the South Fork of the Crow River, which will benefit by retention of nutrients and floodwater at the landscape level.

Temporary water level drawdown will increase sunlight penetration and promote submersed aquatic plant growth as well as consolidate shoreline sediments and allow for germination of emergent plants. Aquatic plants will help stabilize bottom sediments, manage internal nutrient cycling, reduce wave action, control shoreline erosion, provide direct food resources for waterfowl, and provide critical habitat for all shallow lake species.

The outcomes proposed through drawdown and fish control were experienced when Lake Wakanda had a significant winter fish kill in 2012-13. Habitat and water quality conditions following that event improved dramatically, but were only temporary. This event allowed us to see the potential of Lake Wakanda. In-lake tools will provide the means to meet continued enhancement objectives.

Given the average depth of three to four feet in its shallow bays and reaching 14 feet in the main basin, Lake Wakanda is a unique body of water with two public accesses. It can support a diverse and healthy ecosystem along with a predator fish community. Keeping Common Carp and Black Bullhead populations limited along with decreased nutrient levels will expand recreational opportunities. The four new enhancement structures will benefit Lake Wakanda's complex ecosystem. In addition, the project will positively affect Lake Wakanda's chain of prairie lakes and corridors that are surrounded by public land and privately owned conservation program lands.

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

- H4 Restore and protect shallow lakes
- H6 Protect and restore critical in-water habitat of lakes and streams

### **Which other plans are addressed in this program:**

- Long Range Duck Recovery Plan
- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife

### **Which LSOHC section priorities are addressed in this program:**

#### **Prairie:**

- Protect, restore, and enhance shallow lakes

### **Relationship to other funds:**

- N/A - Per call with LSOHC on May 19, 2016

### **Describe the relationship of the funds:**

N/A

### **How does this program include leverage in funds or other effort to supplement any OHF appropriation:**

Kandiyohi County is providing an anticipated \$107,200 in leverage, which is detailed in the budget section. The County is committed to the ongoing maintenance of the proposed four water control and fish barrier structures.

The Cooperative Enhancement Plan for Lake Wakanda is the culmination of local effort and commitment of multiple partners from residents, public at large, sportsman clubs and industry professionals. With the plan complete, Kandiyohi County is seeking a one-time award of OHF to construct the in-lake tools to execute the plan. Recent work completed by the cities of Willmar and Kandiyohi addressing the flashy watershed and extensive nutrient input along with the current \$5.7 million restoration of upstream Grass Lake (refer to support letters attachment) make the viability of this habitat enhancement project timely. Other investments include the \$155,000 Watershed BMPs to Kandi Creek and the multiple years of investment by Lake Wakanda Association & Kandiyohi County for water planning and sampling analysis.

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

Appropriation Year	Source	Amount
2008-2011	Multiple Sources including State Bonding-Grass Lake Restoration	\$5.7 Million
2015	Clean Water Fund (Watershed BMPs)-Kandi Creek	\$155,000
2005-2012	Lake Wakanda Association & Kandiyohi County Water Planning Taskforce-Lake Wakanda Sampling Analysis	\$27,376

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

Through the successful funding of this project to construct water control structures and fish barriers, Lake Wakanda will see improved aquatic plant growth and distribution, enhanced wetland wildlife habitat and overall, a more diverse and balanced fishery. Kandiyohi County will own and provide all capital maintenance for the water control structures and fish barriers. The County will work with the Minnesota Department of Natural Resources for all active water level drawdown, fish management, and routine maintenance. Fish barrier maintenance and management actions will be dictated by the comprehensive lake management plan, Cooperative Enhancement Plan for Lake Wakanda (see attachment) that was created collaboratively with Kandiyohi County, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, the Minnesota Board of Water and Soil Resources, the local Soil and Water Conservation District, Crow River Organization of Water, the Wakanda and Big Kandiyohi Lake Associations, Blomkest Sportsmen's Club and Ducks Unlimited.

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

Year	Source of Funds	Step 1	Step 2	Step 3
2018-2019	Kandiyohi County	Outlet water control structures capable of allowing periodic, partial drawdown and effective fish barriers	Predator fish management will be essential to improving water quality, clarity and submersed/emergent vegetation levels while maintaining recreational fishing opportunities for at least 2/3 of the time in Lake Wakanda.	According to the Plan, periodic, partial drawdowns of up to 1.5 feet to consolidate sediment and promote plant regeneration. This approach will be considered up to once every 6 years. The time period between drawdowns, from full refill to start of next partial drawdown, is expected to be 8-10+ years with effective predator fish management. Partial drawdowns will last no longer than two consecutive winters and one summer and will be conducted only under plan-specified conditions.

## 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 - **No**

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 (Public Waters)**

## Accomplishment Timeline:

Activity	Approximate Date Completed
Final Engineering and Design	Fall 2017
Permitting	Spring 2018
Seek and Award Bids to Construction Contractor(s)	Summer 2018
Construction of Water Control Structures and Fish Barriers	Fall 2018

Date of Final Report Submission: 11/1/2018

## Federal Funding:

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

## Outcomes:

### Programs in prairie region:

- Protected, restored, and enhanced shallow lakes and wetlands *The Lake Wakanda Enhancement Project will improve 1,754-acres of critical shallow lake habitat. Construction of the water control structures and fish barriers will allow for management practices to promote native aquatic plant abundance and enhance the wildlife habitat and fishery. As a Migratory Waterfowl Feeding and Resting Area, Lake Wakanda will be added to the list of ongoing projects to meet the goals of the Minnesota Department of Natural Resource's Long-Range Duck Recovery Plan and Shallow Lakes Program Plan. In accordance with the Cooperative Lake Wakanda Enhancement Plan lake surveys will be conducted by the Minnesota DNR.*

# 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**

same amount as proposal

**Total Amount of Request: \$ 921000**

## Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$0	\$37,800	Kandiyohi County, Kandiyohi County, Kandiyohi County, Kandiyohi County	\$37,800
Contracts	\$730,900	\$64,400	Kandiyohi County	\$795,300
Fee Acquisition w/ PILT	\$0	\$0		\$0
Fee Acquisition w/o PILT	\$0	\$0		\$0
Easement Acquisition	\$0	\$5,000	Kandiyohi County	\$5,000
Easement Stewardship	\$0	\$0		\$0
Travel	\$300	\$0		\$300
Professional Services	\$177,800	\$0		\$177,800
Direct Support Services	\$0	\$0		\$0
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$0	\$0		\$0
Other Equipment/Tools	\$0	\$0		\$0
Supplies/Materials	\$12,000	\$0		\$12,000
DNR IDP	\$0	\$0		\$0
Total	\$921,000	\$107,200		\$1,028,200

## Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Kandiyohi County Public Drainage Manager	0.06	3.00	\$0	\$24,300	Kandiyohi County	\$24,300
County Commissioners-Elected Officials (2)	0.02	3.00	\$0	\$1,700	Kandiyohi County	\$1,700
County Administrator	0.02	3.00	\$0	\$5,900	Kandiyohi County	\$5,900
County Engineer	0.01	3.00	\$0	\$5,900	Kandiyohi County	\$5,900
Total	0.10	12.00	\$0	\$37,800		\$37,800

Amount of Request: \$921,000

Amount of Leverage: \$107,200

Leverage as a percent of the Request: 11.64%

DSS + Personnel: \$0

As a % of the total request: 0.00%

**Does the amount in the contract line include R/E work?**

Yes. 100%.

**Describe and explain leverage source and confirmation of funds:**

No

## Output Tables

**Table 1a. Acres by Resource Type**

Type	Wetlands	Prairies	Forest	Habitats	Total
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	0	0	0	1,754	1,754
Total	0	0	0	1,754	1,754

**Table 2. Total Funding by Resource Type**

Type	Wetlands	Prairies	Forest	Habitats	Total
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	\$0	\$0	\$0	\$921,000	\$921,000
Total	\$0	\$0	\$0	\$921,000	\$921,000

**Table 3. Acres within each Ecological Section**

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
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	0	0	1,754	0	1,754
Total	0	0	0	1,754	0	1,754

**Table 4. Total Funding within each Ecological Section**

Type	Metro Urban	ForestPrairie	SE Forest	Prairie	N Forest	Total
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	\$0	\$0	\$921,000	\$0	\$921,000
Total	\$0	\$0	\$0	\$921,000	\$0	\$921,000

**Table 5. Average Cost per Acre by Resource Type**

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$0	\$0	\$0	\$0
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	\$525

**Table 6. Average Cost per Acre by Ecological Section**

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
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	\$0	\$0	\$0	\$525	\$0

**Target Lake/Stream/River Feet or Miles**

1754



# 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

Kandiyohi

Name	TRDS	Acres	Est Cost	Existing Protection?
Lake Wakanda	11834206	1,754	\$0	Yes

## Section 2 - Protect Parcel List

No parcels with an activity type protect.

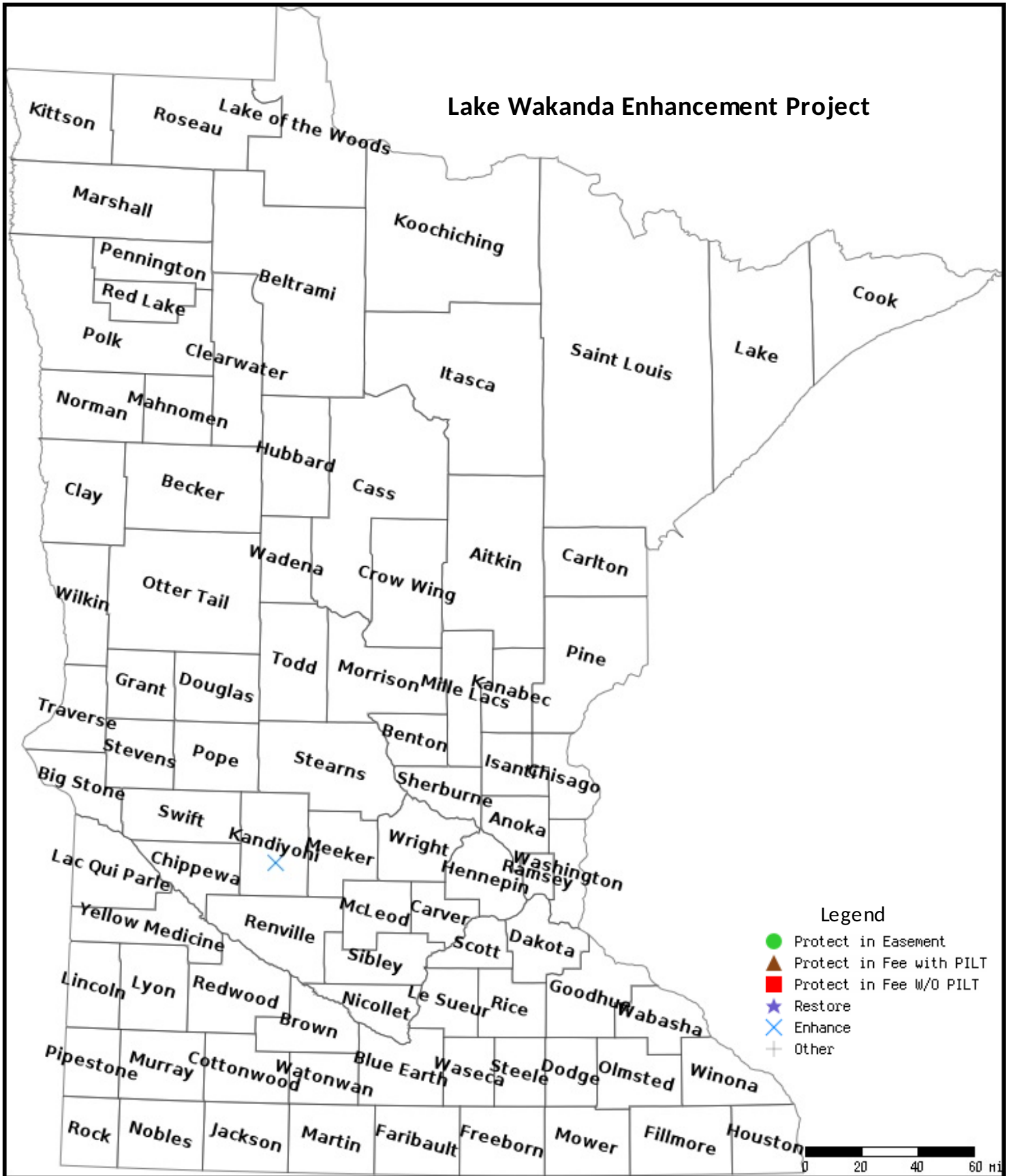
### Section 2a - Protect Parcel with Bldgs

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

# Lessard-Sams Outdoor Heritage Council Comparison Report

**Program Title:** 2017 - Lake Wakanda Enhancement Project

**Organization:** Kandiyohi County

**Manager:** Loren Engelby

## Budget

Requested Amount: \$921,100

Appropriated Amount: \$921,000

Percentage: 99.99%

Budget Item	Total Requested		Total Appropriated		Percentage of Request	
	LSOHC Request	Anticipated Leverage	Appropriated Amount	Anticipated Leverage	Percentage of Request	Percentage of Leverage
Personnel	\$0	\$37,800	\$0	\$37,800	-	100.00%
Contracts	\$730,900	\$64,400	\$730,900	\$64,400	100.00%	100.00%
Fee Acquisition w/ PILT	\$0	\$0	\$0	\$0	-	-
Fee Acquisition w/o PILT	\$0	\$0	\$0	\$0	-	-
Easement Acquisition	\$0	\$5,000	\$0	\$5,000	-	100.00%
Easement Stewardship	\$0	\$0	\$0	\$0	-	-
Travel	\$300	\$0	\$300	\$0	100.00%	-
Professional Services	\$177,900	\$0	\$177,800	\$0	99.94%	-
Direct Support Services	\$0	\$0	\$0	\$0	-	-
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0	-	-
Capital Equipment	\$0	\$0	\$0	\$0	-	-
Other Equipment/Tools	\$0	\$0	\$0	\$0	-	-
Supplies/Materials	\$12,000	\$0	\$12,000	\$0	100.00%	-
DNR IDP	\$0	\$0	\$0	\$0	-	-
<b>Total</b>	<b>\$921,100</b>	<b>\$107,200</b>	<b>\$921,000</b>	<b>\$107,200</b>	<b>99.99%</b>	<b>100.00%</b>

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

same amount as proposal

# Output

**Table 1a. Acres by Resource Type**

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	1,754	1,754	100.00%

**Table 2. Total Funding by Resource Type**

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	921,100	921,000	99.99%

**Table 3. Acres within each Ecological Section**

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	1,754	1,754	100.00%

**Table 4. Total Funding within each Ecological Section**

Type	Total Proposed	Total in AP	Percentage of Proposed
Restore	0	0	-
Protect in Fee with State PILT Liability	0	0	-
Protect in Fee W/O State PILT Liability	0	0	-
Protect in Easement	0	0	-
Enhance	921,100	921,000	99.99%