

Lessard-Sams Outdoor Heritage Council

Laws of Minnesota 2013 Final Report



Date: August 31, 2016

Program or Project Title: Albert Lea Lake Management and Invasive Species Control Structure

Funds Recommended: \$1,827,000

Manager's Name: Andy Henschel

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Legislative Citation: ML 2013, Ch. 137, Art. 1, Sec. 2, Subd. 5(h)

Appropriation Language: \$1,127,000 in the first year is to the commissioner of natural resources for an agreement with the Shell Rock River Watershed District to construct structural deterrents and lake level controls to enhance aquatic habitat on Albert Lea Lake in Freeborn County. A list of proposed land restorations and enhancements must be provided as part of the required accomplishment plan. ML 2014, Ch. 137, Art. 1, Sec. 2, Subd 5 (l) Albert137ea Lake Management and Invasive Species Control Structure - Supplement \$700,000 in the second year is added to the appropriation contained in Laws 2013, chapter 137, article 1, section 2, subdivision 5, paragraph (h), to the commissioner of natural resources for an agreement with the Shell Rock River Watershed District to construct structural deterrents and lake level controls.

County Locations: Freeborn

Regions in which work was completed:

- Prairie

Activity types:

- Restore
- Enhance

Priority resources addressed by activity:

- Habitat

Summary of Accomplishments:

The Albert Lea Lake Management project replaced the previous Albert Lea Lake fix-crest dam with a 3-in-1 structure that included a rock riffle dam, a lake level management structure, and an electric fish barrier. The benefits from this project include improved aquatic and waterfowl habitat, invasive species management, and improved desirable fish populations.

Process & Methods:

The Shell Rock River Watershed District (SRRWD) encompasses 246-square miles in Freeborn County. The District includes 11 lakes that drain to the Shell Rock River, which flows into the Cedar River. Among the District's lakes are Fountain Lake and Albert Lea Lake, located within the City of Albert Lea. These lakes are central to Albert Lea's tourism industry and its identity.

The previous Albert Lea Lake outlet structure and access bridge, installed in 1922, was in need of repair. The Albert Lea Lake Management and Invasive Species Control Project replaced the fixed-crest dam with a rock-arch rapids feature to control water levels.

A lake level management structure was also constructed, as well as an electric fish barrier to prevent silver, bighead, and common carp and other benthic feeding fish from entering the lake.

The project is expected to result in improved aquatic habitat, improved waterfowl nesting, breeding, and feeding habitat, an increase in desirable fish populations, and improved water quality and clarity for years to come. Specific benefits are outlined below.

1. Rock-Arch Water-Level Control: The SRRWD replaced the old fixed-crest dam with a series of rock arches to provide a naturalized outlet to Albert Lea Lake. The upper-most rock arch is controlling the normal water level with the help of metal sheeting. There are two more rock arches behind the first, totaling 3 rock arches.

2. Lake Level Management Structure: The installation of the structure to facilitate lake-level management gives the SRRWD flexibility to take action benefiting the health of the lake. Periodic lowering of lake elevations allows maximum in-lake sediment compaction, improvement of water clarity due to reduction in wind-generated turbidity, and time for plant colonization of shoreline and shallow-water areas. The resulting improvement in aquatic plant health benefits the entire lake system.

3. Electric fish barrier: An electric fish barrier was installed and is used to reduce the population of common carp (*Cyprinus carpio*) in Albert Lea Lake and to prevent the introduction of Bighead and Silver (Asian) Carp. Common carp uproot and consume aquatic vegetation, disturb and re-suspend phosphorous-rich sediments. The resulting increase in turbidity reduces light penetration—discouraging rooted plant growth—and contributes to algal blooms responsible for oxygen depletion. The destruction of aquatic vegetation by large populations of foraging fish also impacts waterfowl nesting, breeding, and feeding habitat, shoreline and littoral habitat, and game fish spawning habitat.

Design and engineering of the project started in late 2013. Contracts and associated agreements for the dam were made in early 2014. The order of operations for the construction of the project includes:

- Installation of the cofferdam
- Construction of the water diversion channel
- Removal of the old dam and bridge
- Installation of the metal sheeting that holds the lake level
- Placement of the first rock arch along the sheeting
- Installation of the footings for the concrete work
- Concrete work for the fish barrier
- Concrete work for the draw down structure
- Finalize/seal all concrete
- Placement of remaining rock arches
- Removal of the cofferdam and water diversion channel
- Installation and fine tuning of the fish barrier component

The main construction of the projects were completed in the spring of 2015. At the end of 2015, some calibrations of the electric components were needed on the electric fish barrier. After the ice melt in the spring of 2016, those changes were made to fine tune the barrier. The Albert Lea Lake Management and Invasive Species Control Structure is now fully complete.

The outlet, fish passage, and fish barrier worked in harmonization as part of the District's overall management plan. Similar to the Wedge Creek, White Lake, and Mud Lake efforts, the anticipated outcome for Albert Lea Lake is restoration of rooted aquatic vegetation, fish and wildlife habitat, and enhanced water quality—all of which will serve to increase community use of this important recreational resource.

Explain Partners, Supporters, & Opposition:

The SRRWD partnered with Freeborn County, who are the primary owners of the Albert Lea Dam.

Additional Comments:

Exceptional challenges, expectations, failures, opportunities, or unique aspects of program

The Albert Lea Lake Outlet Structure project is unique in that instead of creating yet another simple fixed crest concrete structure, the District saw the opportunity to implement a complex 3-in-1 structure. This project is tailored to Albert Lea Lake and the receiving Shell Rock River. This project was uniquely designed and technically engineered using state of the art technology to produce results that protect, enhance, and restore natural resources.

Other Funds Received:

- Not Listed

How were the funds used to advanced the program:

Not Listed

What is the plan to sustain and/or maintain this work after the Outdoor Heritage Funds are expended:

The Shell Rock River Watershed District, and Freeborn County, will plan to sustain and/or maintain this project.

Outcomes:

The original accomplishment plan stated the program would

Programs in prairie region:

- Protected, restored, and enhanced habitat for waterfowl, upland birds, and species of greatest conservation need
- Protected, restored, and enhanced shallow lakes and wetlands
- Provides a permanent solution for preclusion of common carp from accessing a shallow lake basin

How will the outcomes be measured and evaluated?

Outcomes will be measured by the improved aquatic and waterfowl habitat, the improved invasive species management, and improved desirable fish populations.

Budget Spreadsheet

Final Budget line item reallocations are allowed up to 10% and do not need require an amendment to the Accomplishment Plan

Total Amount: \$1,827,000

Budget and Cash Leverage

BudgetName	Request	Spent	Cash Leverage (anticipated)	Cash Leverage (received)	Leverage Source	Total (original)	Total (final)
Personnel	\$0	\$0	\$62,500	\$62,500	In-kind Services, In-kind Services	\$62,500	\$62,500
Contracts	\$519,900	\$1,239,900	\$173,200	\$173,200	Local Option Sales Tax	\$693,100	\$1,413,100
Fee Acquisition w/ PILT	\$0	\$0	\$0	\$0		\$0	\$0
Fee Acquisition w/o PILT	\$0	\$0	\$0	\$0		\$0	\$0
Easement Acquisition	\$0	\$0	\$0	\$0		\$0	\$0
Easement Stewardship	\$0	\$0	\$0	\$0		\$0	\$0
Travel	\$0	\$0	\$0	\$0		\$0	\$0
Professional Services	\$172,900	\$88,000	\$58,400	\$58,400	Local Option Sales Tax	\$231,300	\$146,400
Direct Support Services	\$0	\$0	\$0	\$0		\$0	\$0
DNR Land Acquisition Costs	\$0	\$0	\$0	\$0		\$0	\$0
Capital Equipment	\$0	\$0	\$0	\$0		\$0	\$0
Other Equipment/Tools	\$0	\$0	\$0	\$0		\$0	\$0
Supplies/Materials	\$434,200	\$499,100	\$144,700	\$144,700	Local Option Sales Tax	\$578,900	\$643,800
DNR IDP	\$0	\$0	\$0	\$0		\$0	\$0
Total	\$1,127,000	\$1,827,000	\$438,800	\$438,800		\$1,565,800	\$2,265,800

Personnel

Position	FTE	Over # of years	Spent	Cash Leverage	Leverage Source	Total
Tech 1	0.30	2.00	\$0	\$37,500	In-kind Services	\$37,500
Tech 2	0.25	0.00	\$0	\$25,000	In-kind Services	\$25,000
Total	0.55	2.00	\$0	\$62,500		\$62,500

Explain any budget challenges or successes:

Due to the complexity of the 3-in-1 project, the challenge was that the original engineers estimate was below the actual cost. Because of this, the District had to ask the council for additional funding.

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	3,100	3,100	3,100	3,100
Total	0	0	0	0	0	0	3,100	3,100	3,100	3,100

Table 2. Total Requested Funding by Resource Type

Type	Wetlands (original)	Wetlands (final)	Prairies (original)	Prairies (final)	Forest (original)	Forest (final)	Habitats (original)	Habitats (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0	\$1,127,000	\$1,827,000	\$1,127,000	\$1,827,000
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$1,127,000	\$1,827,000	\$1,127,000	\$1,827,000

Table 3. Acres within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0	0	0	0	0	0	0
Enhance	0	0	0	0	0	0	3,100	3,100	0	0	3,100	3,100
Total	0	0	0	0	0	0	3,100	3,100	0	0	3,100	3,100

Table 4. Total Requested Funding within each Ecological Section

Type	Metro Urban (original)	Metro Urban (final)	ForestPrairie (original)	Forest Prairie (final)	SE Forest (original)	SE Forest (final)	Prairie (original)	Prairie (final)	N Forest (original)	N Forest (final)	Total (original)	Total (final)
Restore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$0	\$0	\$0	\$0	\$1,127,000	\$1,827,000	\$0	\$0	\$1,127,000	\$1,827,000
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$1,127,000	\$1,827,000	\$0	\$0	\$1,127,000	\$1,827,000

Target Lake/Stream/River Feet or Miles (original)

Target Lake/Stream/River Feet or Miles (final)

35

Explain the success/shortage of acre goals:

The targeted acre goals were successfully reached.

Parcel List

Section 1 - Restore / Enhance Parcel List

Freeborn

Name	TRDS	Acres	Total Cost	Existing Protection?	Description
Parcel# 08-025-044	10221225	3,100	\$1,827,000	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.

Completed Parcel: Parcel# 08-025-044

# of Total Acres:	3100
County:	Freeborn
Township:	102
Range:	21
Direction:	2
Section:	25
# of Acres: Wetlands/Upland:	
# of Acres: Forest:	
# of Acres: Prairie/Grassland:	
Amount of Shoreline:	
Name of Adjacent Body of Water (if applicable):	Albert Lea Lake
Has there been signage erected at the site:	Yes
Total cost of Restoration/Enhancement:	\$1,827,000

Parcel Map

Albert Lea Lake Management and Invasive Species Control Structure

