

Lessard-Sams Outdoor Heritage Council Laws of Minnesota 2013 Accomplishment Plan

Date: October 22, 2012

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

Funds Recommended: \$1,127,000

Manager's Name: Andy Henschel

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Organization Web Site: www.shellrock.org

Legislative Citation: (to be completed when signed by Governor)

County Locations: Freeborn,

Ecological Planning Regions:

- Prairie

Activity Type:

- Restore
- Enhance

Priority Resources Addressed by Activity:

- Habitat

Abstract:

This project will replace the Albert Lea Lake fixed-crest dam with a fish passage feature, a lake level management structure, and a fish barrier. The benefits include improved aquatic and waterfowl habitat, invasive species management, and improved desirable fish population.

Activity Detail

Design and Scope of Work:

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 on either side of the city of Albert Lea. These lakes are central to Albert Lea's tourism industry and its identity.

The existing Albert Lea Lake outlet structure and access bridge, installed in 1922, are in need of repair. The proposed project would replace the fixed-crest dam with a rock-arch rapids feature to control water levels and allow fish passage (see concept drawing). A lake level management structure would also be constructed, as well as an electric barrier to prevent silver, bighead, and common carp and other benthic feeding fish from entering the lake.

This 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. It has been identified as a high priority in the SRRWD Management Plan, developed with public participation, and subject to public review and approval by the SRRWD Board. Specific benefits are outlined below.

1. Rock-Arch Water-Level Control and Fish Passage: Replacing the existing fixed-crest dam with a series of rock arches will provide a naturalized outlet to Albert Lea Lake, with the upper-most rock arch controlling the normal water level. The arches will also provide fish passage, allowing northern pike to move upstream from the Shell Rock River to spawn in the lake. Northern Pike typically spawn in March and April, while carp spawning/movement typically does not start until May. A fish passage—in combination with an electric fish barrier activated in May to preclude carp—will increase the population of Northern Pike, natural predators of carp. Albert Lea Lake populations of Northern Pike and Bluegill (also a carp egg predator) are currently below Minnesota DNR norms for similar lakes.

2. Lake Level Management Structure: Installation of a 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 will be 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.

Asian Carp multiply rapidly and are voracious eaters, depleting food resources. The leaping ability of the Silver Carp also poses a danger to boaters and skiers. According to a 2010 news story in the *Cedar Rapids Gazette*, Asian carp have migrated past the 5-in-1 Dam in Cedar Rapids, Iowa, moving up the Cedar River to Black Hawk County—where the Cedar and the Shell Rock River join. The distance from this point to Albert Lea Lake is only about 100 miles. While there is not general agreement about the threat posed by Asian carp in lake waters, if this does become a concern the barrier could be used year-round and an alternative fish management plan developed.

The SRRWD has a proven track record of success with fish barriers. The fish barriers upstream of Albert Lea Lake—at Wedge Creek and White Lake (partially funded by 2009 Outdoor Heritage Funds) and Mud Lake—have improved habitat and water clarity in the upstream areas. Improved habitat is demonstrated by increased sightings of aquatic fur bearers and waterfowl, with 15 waterfowl species sighted during the fall migration. Improvements in water clarity are demonstrated by secchi disk readings on Fountain Lake (connected to these water bodies), which were the best on record in 2010.

The proposed outlet, fish passage, and fish barrier will work 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. The strategy of carp/rough fish control and exclusion is known to be effective. This program is endorsed by the Department of Natural Resources (DNR) Fishery and Wildlife Divisions and the Minnesota Pollution Control Agency and conducted with their technical assistance and cooperation.

This project is consistent with recommendations of the 2004 Shell Rock River Watershed Management Plan (Appendix B & J). It is also noted in the Albert Lea Lake Management Plan, as part of the Freeborn County Comprehensive Water Plan 2006-2015. Other applicable plans include the Minnesota Conservation and Preservation Plan Phase II provisions that address the control of invasive species, restoration of shallow lakes, water quality improvements in impaired waters, and protection and enhancement of fish and waterfowl breeding habitat (pg. 30-96); and the 2009 Minnesota State Management Plan for Invasive Species. Activities are also within the goals of the Basin Alliance for the Lower Mississippi in Minnesota (BALMM).

This project is a component of the 2011 Restoring Native Habitat/Water Quality to the Shell Rock River Project funded by the Lessard-Sams Outdoor Heritage Fund for the fee-title acquisition of the headwaters of the Shell Rock River. The land has been acquired and will be turned over to the DNR to be operated under an Aquatic Management Area Management Plan.

There are no known opponents or anticipated barriers to project completion. These efforts will be highly visible and seen as a benefit to the entire region. They are endorsed by the local Chamber of Commerce, Convention and Visitors Bureau, Freeborn County, City of Albert Lea, DNR and Fountain Lake Sportsmen's Club.

Planning

MN State-wide Conservation Plan Priorities:

- H4 Restore and protect shallow lakes
- H5 Restore land, wetlands and wetland-associated watersheds
- H6 Protect and restore critical in-water habitat of lakes and streams

Plans Addressed:

- A Vision for Wildlife and Its Use -- Goals and Outcomes 2006-2012
- Ducks Unlimited Living Lakes Initiative
- Long Range Duck Recovery Plan
- Long Range Plan for Fisheries Management
- Long Range Plan for Muskellunge and Large Northern Pike Management Through 2020
- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife
- Midwest Glacial Lakes Partnership
- Minnesota DNR AMA Acquisition Plan
- Minnesota DNR Strategic Conservation Agenda
- National Fish Habitat Action Plan
- North American Waterbird Conservation Plan
- U.S. Prairie Pothole Joint Venture Plan

LSOHC Statewide Priorities:

- Are ongoing, successful, transparent and accountable programs addressing actions and targets of one or more of the ecological sections
- Produce multiple enduring conservation benefits
- Are able to leverage effort and/or other funds to supplement any OHF appropriation
- Allow public access. This comes into play when all other things about the request are approximately equal
- Restore or enhance habitat on state-owned WMAs, AMAs, SNAs, and state forests
- Address wildlife species of greatest conservation need, Minnesota County Biological Survey data, and rare, threatened and endangered species inventories in land and water decisions, as well as permanent solutions to aquatic invasive species
- Ensures activities for "protecting, restoring and enhancing" are coordinated among agencies, non profits and others while doing this important work

LSOHC Prairie Section Priorities:

- Restore or enhance habitat on public lands
- Protect, restore, and enhance shallow lakes
- Protect, enhance, and restore migratory habitat for waterfowl and related species, so as to increase migratory and breeding success

Relationship to Other Constitutional Funds:

- No Relationships Listed

Accelerates or Supplements Current Efforts:

This project is another component of the 2011 Restoring Native Habitat/Water Quality to the Shell Rock River project funded by the Lessard-Sams Outdoor Heritage Fund for the acquisition of the headwaters of the Shell Rock River. The land has now been acquired by the SRRWD and will be turned over to the DNR for its use as an Aquatic Management Area. This project will contribute to the success of the long-term Albert Lea Lake Management Plan to enhance growth of aquatic plants, reduce populations of undesirable fish, and improve in-lake water quality. Periodic lake level drawdown can be used to encourage aquatic plant growth and sediment compaction. The electric fish barrier will work in conjunction with existing electric fish barriers upstream of Albert Lea Lake to continue to reduce the population of Common Carp. Carp populations in lakes isolated from other waters are typically kept at lower levels through predation by species such as Bluegill and Northern Pike. Populations of Bluegill and Northern Pike in Albert Lea Lake are currently below Minnesota DNR norms for similar lakes. Improved in-lake habitat is anticipated to contribute to future success of Bluegill and Northern Pike populations further reducing carp.

Sustainability and Maintenance:

The new rock-arch rapids feature, lake level management structure, and electric fish barrier will be maintained and operated by the Shell Rock River Watershed District following transfer of the land area that includes these features to the Minnesota DNR for inclusion in a new Aquatic Management Area. The new features are projected to have a useable life of 75 to 100 years. The SRRWD is a permanent entity which derives its financial support from a local option sales tax, grants, and donations. The District has a proven track record of successfully constructing and maintaining projects.

*Is the activity on permanently protected land and/or public waters per MS 103G.005, Subd. 15? - **Yes (AMA)***

Accomplishment Timeline

| Activity | Approximate Date Completed |
|---|----------------------------|
| Design new outlet and fish barrier | December 2013 |
| Construction of new outlet and fish barrier | December 2014 |

Outcomes

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

Budget Spreadsheet

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

Total Amount of Request: \$1,127,000

Budget and Cash Leverage

| Budget Name | LSOHC Request | Anticipated Cash Leverage | Cash Leverage Source | Total |
|----------------------------|----------------------|----------------------------------|-----------------------------|--------------------|
| Personnel | \$0 | \$62,500 | | \$62,500 |
| Contracts | \$519,900 | \$173,200 | Local Option Sales Tax | \$693,100 |
| 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 (in-state) | \$0 | \$0 | | \$0 |
| Professional Services | \$172,900 | \$58,400 | Local Option Sales Tax | \$231,300 |
| 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 | \$434,200 | \$144,700 | Local Option Sales Tax | \$578,900 |
| DNR IDP | \$0 | \$0 | | \$0 |
| Total | \$1,127,000 | \$438,800 | - | \$1,565,800 |

Personnel

| Position | FTE | Over # of years | LSOHC Request | Anticipated Cash Leverage | Cash 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 |

Output Tables

Table 1. 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 | 3,100 | 3,100 |
| Total | 0 | 0 | 0 | 3,100 | 3,100 |

Table 2. Total Requested 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 | \$1,127,000 | \$1,127,000 |
| Total | \$0 | \$0 | \$0 | \$1,127,000 | \$1,127,000 |

Table 3. Acres within each Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern 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 | 3,100 | 0 | 3,100 |
| Total | 0 | 0 | 0 | 3,100 | 0 | 3,100 |

Table 4. Total Requested Funding within each Ecological Section

| Type | Metro/Urban | Forest/Prairie | SE Forest | Prairie | Northern 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 | \$1,127,000 | \$0 | \$1,127,000 |
| Total | \$0 | \$0 | \$0 | \$1,127,000 | \$0 | \$1,127,000 |

Table 5. Target Lake/Stream/River Miles

35 miles

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

Freeborn

| Name | TRDS | Acres | Est Cost | Existing Protection? |
|---------------------|-------------|--------------|-----------------|-----------------------------|
| Parcel # 08-025-044 | 10221225 | 17 | \$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.