Main Request for Funding Form

Lessard-Sams Outdoor Heritage Council
Fiscal Year 2012

Program or Project Title: Marsh Lake Ecosystem Enhancement

	Funding Request	OHF Out-Year Projections of Needs		
Funds Requested ($000s)	**FY 2012**	FY 2013	FY 2014	FY 2015
Outdoor Heritage Fund	**$ 303,780**	0	0	0

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County Location: Big Stone, Lac Qui Parle, and Swift Counties

Ecological Planning Regions*:*

☐ Northern Forest ☐ Forest/Prairie Transition ☐ Southeast Forest

X Prairie ☐ Metro/Urban

Activity Type:

☐ Protect ☐ Restore X Enhance

Priority Resources addressed by activity:

X Wetlands ☐ Forests ☐ Prairie ☐ Habitat

Project Abstract

The final design will be completed for the enhancement of Marsh Lake, Lac qui Parle WMA, for fish and wildlife in cooperation with the U.S. Army Corp of Engineers.

Project Narrative

Design and scope of work

An estimated 90% of Minnesota's prairie wetlands have been lost, and those that remain are often larger basins that were more difficult to drain. Throughout the state, these shallow lakes and large wetlands provide critical habitat for wetland wildlife production and migration, especially for waterfowl and other wetland-dependent birds. High quality shallow lakes and wetlands have clear water and abundant rooted aquatic vegetation. Emergent aquatic plants such as rushes and wild rice provide protective cover from weather and predators and over-water nesting habitat, while submerged plants provide food in the form of seeds and tubers and critical habitat for aquatic invertebrates. An abundance of aquatic invertebrates such as insects, amphipods, and snails are critical for breeding ducks and for duckling growth and survival. Protein and carbohydrates from seeds and tubers are critical foods during both spring and fall migration.

The over 31,000 acre Lac qui Parle Wildlife Management Area (WMA) includes a mixture of cropland, seasonal and permanent wetlands, and scattered grasslands managed for waterfowl and upland game birds. The WMA is a critical stopover for both ducks and geese. Peak numbers of 150,000 Canada geese and 20,000 mallards are recorded. The WMA is nationally recognized as an Important Bird Conservation Area. A portion of Lac qui Parle Lake (6,400 acres) is managed as a waterfowl refuge while immediately upstream a portion of Marsh Lake (5,100 acres) is managed as a Migratory Feeding and Resting Area. These two lakes also provide angling opportunities for walleye, northern pike and other species.

Statewide, the quality of shallow lakes and wetlands providing wildlife habitat has declined markedly due to landscape changes, increased runoff carrying sediment and nutrients, and invasive plant and fish species. Marsh Lake's quality reflects this statewide trend. In 1938 the Pomme de Terre River, carrying the runoff from a watershed nearly 560,000 acres in size, was re-routed from its historic outlet into Lac qui Parle Lake to empty instead into Marsh Lake. Since that time, over 80% of the Pomme de Terre watershed has been developed for agriculture. A fixed crest dam built

at the same time kept the lake from naturally occurring fluctuations in depth. A robust population of common carp added to the turbidity that is aggravated by wave action due to the lake's shallow depth (maximum 3 feet), large size and northwest to southeast orientation. This combination of factors has resulted in increased sedimentation, sediment resuspension, degraded habitat and poor water quality within the lake.

The U.S. Army Corp of Engineers (USACE) recommended in the December 2004 Minnesota River Reconnaissance study that a Marsh Lake Feasibility Study be completed (approved January 13, 2005). The study was authorized by a May 10, 1962 resolution of the House Committee on Public Works. Federal (Corps of Engineers) interest in Marsh Lake is based on the potential benefits of aquatic ecosystem restoration and the fact that the existing Marsh Lake Dam is owned and operated by the Corps of Engineers.

In May of 2007, Commissioner Mark Holsten signed a Federal Cost Share Agreement with the USACE formalizing the DNR's participation in the Marsh Lake Feasibility Study. Concurrently a Project Management Plan identifying project scope, budget, and schedule was developed in coordination with study partners and stakeholders for the Marsh Lake Ecosystem Restoration Feasibility Report. Study costs were shared 50:50 between the USACE and the DNR as the non-federal sponsor. The planned prescription for alterations to Marsh Lake was developed by an interdisciplinary planning team of DNR and USACE staff.

The planning objectives of the study were to restore aquatic and riparian habitat in Marsh Lake by restoring the natural function and processes to the lake which will reduce sedimentation, minimize sediment resuspension, and increase the habitat suitability for fish and waterfowl in the lake. This will be accomplished primarily through modification of the dam at Marsh Lake and restoration of the historic outlet of the Pomme de Terre River to Lac qui Parle Lake. The dam disrupted natural flood plain functions and processes. The lack of natural flooding and drying cycles combined with increased sedimentation from the large artificial watershed caused a decline in plant diversity, water quality and associated fish and wildlife benefits.

The proposed final design will include modifying the existing fixed-crest outlet structure, converting the existing emergency spillway to a variable crest drawdown structure, restoring the outlet of the Pomme de Terre River to Lac qui Parle Lake, creation of three breakwater islands, and modifying five culverts along the Upper Pool of Marsh Lake. Alteration of the existing fixed-crest dam will allow for natural water level variability based on river hydrology and provide constant fish passage. The variable crest structure will enable lake managers to periodically drawdown lake levels to consolidate bottom sediments, increase the amount of emergent plants, and minimize winter refuge for common carp. The re-routed Pomme de Terre will reduce sedimentation into Marsh Lake as well as provide direct connectivity to spawning habitat for game fish such as northern pike and walleye. Construction of breakwater structures will reduce the amount of sediment resuspension resulting from wind and wave action and enable

deeper light penetration to promote growth of submerged aquatic plants. Aquatic plant growth will serve as both a food source to migrating waterfowl as well as a stabilizing measure for bottom sediments within the lake. Adding stop-log structures to five culverts on the Upper Pool will provide independent water level control on approximately 1,500 acres of wetland habitat.

The proposal elements reflect the strategies of the 2006 Duck Recovery Plan. This plan underwent substantial review by nearly all the major wildlife conservation groups in Minnesota. Stakeholders have been generally supportive of the strategies outlined in the plan, although some have expressed frustration with the long timeline.

Planning

Several recent statewide Minnesota planning efforts have called attention to the dramatic loss in both quantity and quality of shallow lake habitat over the last century and a half. *Minnesota Statewide Conservation and Preservation Plan*, *A Fifty-Year Vision – Minnesota Campaign for Conservation, Tomorrow's Habitat for the Wild and Rare*, and *MN DNR Duck Recovery Plan* all emphasize the importance of shallow lakes in creating viable wetland habitat complexes that are necessary for improvements in wetland wildlife populations.

The *Minnesota Statewide Conservation and Preservation Plan* identifies habitat loss and degradation as the number one driver of change for wildlife in Minnesota. This Plan specifically recommends fee acquisition for WMAs, protection of shallow lake shoreline, and restoring shallow lakes, wetlands, and wetland associated watersheds as important strategies. *Tomorrow's Habitat for the Wild and Rare - Minnesota's Comprehensive Wildlife Conservation Strategy* for species in greatest conservation need has identified significant loss and degradation of habitat as the number one management challenge and one of the principle strategies is to provide protection through selective acquisition of key habitats in each Ecological Section. Over 30 species that rely on shallow lakes and wetlands are listed as species of special concern including white pelicans that have an active breeding colony (one of only two in MN) on Marsh Lake.

Minnesota's *Long Range Duck Recovery Plan* lists the objective of restoring a breeding population of 1 million ducks by 2056. The primary strategy is the protection and restoration of 2 million additional acres of habitat including the restoration of 64,000 wetlands and actively managing 1,800 shallow lakes. In addition, LSOHC specifically recognizes the importance of shallow lakes in the Prairie ecological section.

This proposal is largely based on the Department of Natural Resources 2006 Duck Recovery Plan. This plan is similar to the Strategic Habitat Conservation model adopted by the US Fish and Wildlife Service in that it establishes a statewide duck population goal, identifies the challenges to be met in achieving that goal, proposes specific strategies and objectives for habitat restoration and protection, and selects specific metrics for evaluating progress.

Relationship to Other Constitutional Funds

This proposal targets the enhancement of wetland wildlife habitat on shallow lakes and associated wetlands that contribute to wetland habitat complexes. These are basins are managed by wildlife agencies explicitly for high quality wildlife habitat. The DNR will consult and coordinate with partners to ensure that strategic conservation actions are prioritized within L-SOHC planning sections and that the allocation of available resources is optimized with all available funding sources. Although this work will compliment the goals of other Constitutional Funding, the selection of specific projects is prioritized based on the potential benefits to wildlife rather than consideration of other goals.

Relationship to Current Organizational Budget

Current DNR Division of Fish and Wildlife expenditures for wetland and shallow lake work for wildlife habitat total approximately $2,360,000 out of a total Division budget of $92,600,000. The total DNR annual budget approximates $350,000,000.

Sustainability and Maintenance

The design component of this proposal will prepare Marsh Lake for future construction. The management and maintenance of Marsh Lake once the construction is completed will fall on existing staff of the Department of Natural Resources. These staff are funded through license fees and legislative appropriations. Periodic enhancements such as invasive species removal, supplemental vegetation planting or water control structure installation and replacements will be accomplished through annual funding requests to a variety of funding sources including, but not limited to, the Game and Fish Fund, bonding, gifts, the Environment and Natural Resources Trust Fund, the Outdoor Heritage Fund, and federal sources such as North American Wetland Conservation Act grants.

Types of Projects

Fee Acquisition Projects

Will local government approval be sought prior to acquisition?

☐ Yes ☐ No, please explain X not applicable

If no, please explain here:

Is the land you plan to acquire free of any other permanent protection?

☐ Yes ☐ No, please explain X not applicable

If no, please explain here:

Easement Acquisition Projects

Will the eased land be open for public use?

☐ Yes ☐ No, please explain X not applicable

If no, please explain here:

Will the conservation easement be permanent?

☐ Yes ☐ No, please explain X not applicable

If no, please explain here:

Restoration and Enhancement Projects

Is the activity on permanently protected land and/or public waters?

X Yes ☐ No, please explain ☐ not applicable

If no, please explain here:

Does the activity take place on an Aquatic Management Area (AMA), Scientific and Natural Area (SNA), Wildlife Management Area (WMA), or State Forests?

X Yes, which ones ☐ No, please explain ☐ not applicable

If so, please indicate which ones: Lac qui Parle Wildlife Management Area

Accomplishment Timeline

Activity	Milestone	Date

Complete Final Design	Design Plan ready for distribution	June 30, 2012

Attachments:

A. Budget
B. Proposed Outcome Tables 1-5
C. Map
D. Parcel List

Attachment A. Budget Spreadsheet

[Link Here to definitions of the budget items below.]

Total Amount of Request	$	300,000	*From page 1 on the funding form.*

Personnel

Position breakdown here	FTE	Over # of years	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Manager of Programs						$ -
Admin Asst						$ -
position 3						$ -
position 4						$ -
position 5						$ -
position 6						$ -
position 7						$ -
Total			$ -	$ -	$ -	$ -

Budget and Cash Leverage *(All your LSOHC Request Funds must be direct to and necessary for program outcomes.)*

Please describe how you intend to spend the requested funds.

Budget Item	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Personnel - *auto entered from above*	$ -	$ -	$ -	$ -
Contracts				$ -
Fee Acquisition w/ PILT ***(breakout in table 6 & 7)***				$ -
Fee Acquisition w/o PILT ***(breakout in table 6 & 7)***				$ -
Easement Acquisition				$ -
Easement Stewardship				$ -
Travel (in-state)				$ -
Professional Services	*$ 300,000*	*$ 900,000*	*COE funding*	$ 1,200,000
DNR Land Acquisition Costs				$ -
Other				$ -
Capital Equipment				$ -
Other Equipment/Tools				$ -
Supplies/Materials				$ -
	$ 300,000	$ 900,000	$ -	$ 1,200,000

Attachment B. Proposed Outcome Tables

Only enter data in the outlined cells

Table 1 and Table 3 column totals should be the same AND Table 2 and Table 4 column totals should be the same

If your project has lakes or shoreline miles instead of land acres, convert miles to acres for Tables 1 and 3 using the following conversion:
Lakeshore = 6 acres per lakeshore mile / Stream & River Shore = 12 acres per linear mile, if both sides

Table 1. Acres by Resource Type

Describe the scope of the project in acres (use conversion above if needed)

	Wetlands	Prairies	Forest	Habitats	Total
Restore					0
Protect					0
Enhance				*5,100*	5100
Total	0	0	0	5100	

Total Acres (sum of Total column)	5100	*These two cells should be the same figure.*
Total Acres (sum of Total row)	5100	

Table 2. Total Requested Funding by Resource Type

	Wetlands	Prairies	Forest	Habitats	Total
Restore					$ -
Protect					$ -
Enhance				*$ 300,000*	$ 300,000
Total	$ -	$ -	$ -	$ 300,000	

Total Dollars (sum of Total column)	$ 300,000	*These two cells should be the same figure.*
Total Dollars (sum of Total row)	$ 300,000	

Check to make sure this amount is the same
as the Funding Request Amount on page 1 of Main Funding Form.

Table 3. Acres within each Ecological Section

	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore						0
Protect						0
Enhance				*5100*		5100
Total	0	0	0	5100	0	

Total Acres (sum of Total column)	5100	*These three cells should be the same figure.*
Total Acres (sum of Total row)	5100	
Total Acres from Table 1.	5100	

Attachment B. Proposed Outcome Tables

Table 4. Total Requested Funding within each Ecological Section

	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore						$ -
Protect						$ -
Enhance				$ 300,000		$ 300,000
Total	$ -	$ -	$ -	$ 300,000	$ -	

Total Dollars (sum of Total column)	$ 300,000	*These two cells should be the same figure.*
Total Dollars (sum of Total row)	$ 300,000	

Check to make sure these amounts are the same as the Funding Request Amount on page 1 of Main Funding Form.

Table 5. Target Lake/Stream/River Miles

	# miles of Lakes / Streams / Rivers Shoreline

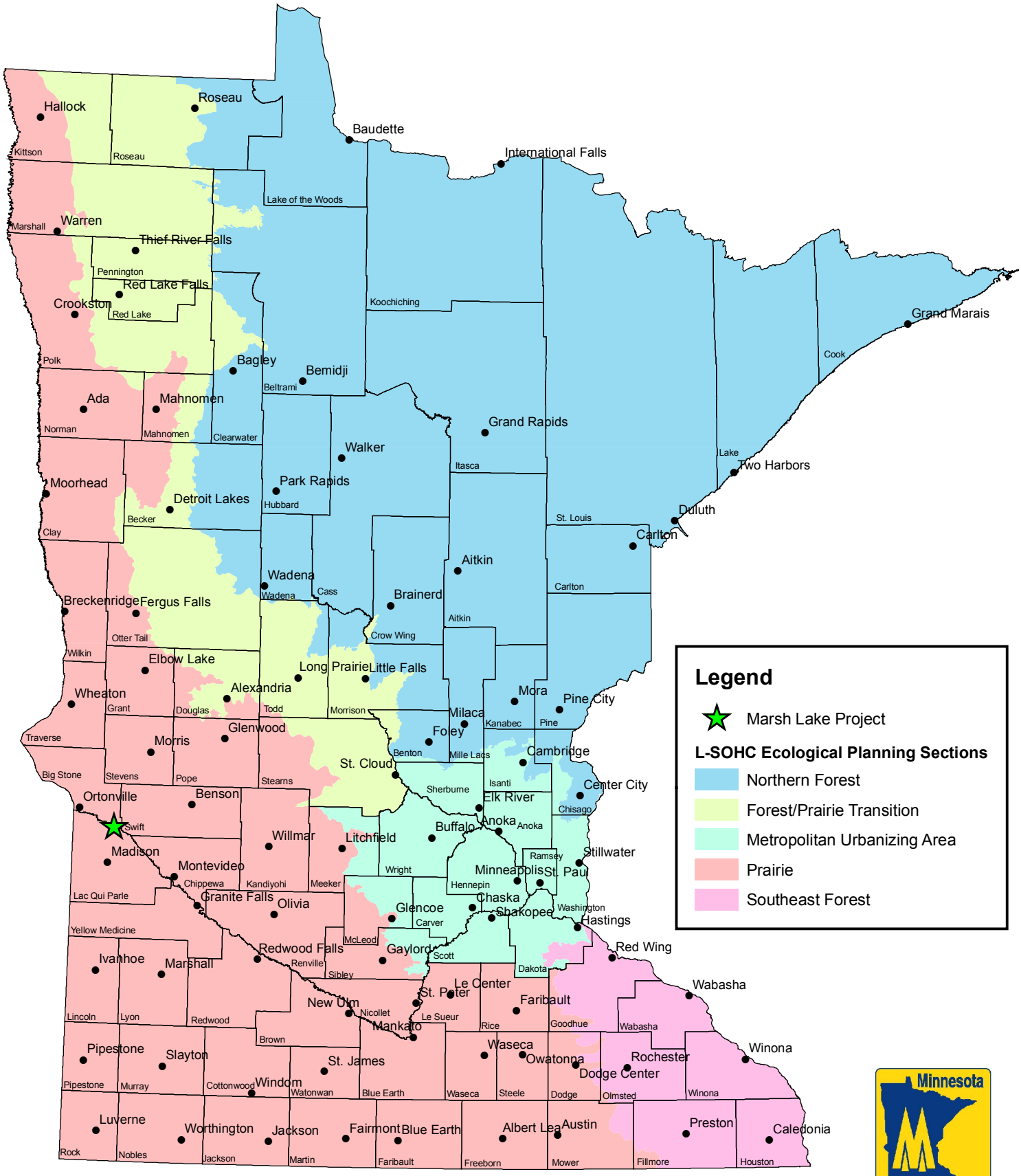
Table 6. Acquisition by PILT Status *(enter information in acres)*

	Wetlands	Prairies	Forests	Habitats	Total
Acquired in Fee with State PILT Liability					0
Acquired in Fee without State PILT Liability					0
Permanent Easement NO State PILT Liability					0

Table 7. Estimated Value of Acquisition by PILT Status *(enter information in dollars)*

	Wetlands	Prairies	Forests	Habitats	Total
Acquired in Fee with State PILT Liability					$ -
Acquired in Fee without State PILT Liability					$ -
Permanent Easement NO State PILT Liability					$ -

Marsh Lake Ecosystem Enhancement



7/13/2010

Attachment D. Parcel List

Program Title: Marsh Lake Parcel list not applicable

Parcel Name	County	Township	Range	Direction	Section	TRDS	# of acres	Budgetary Estimate (includes administrative, restoration or other related costs and do not include matching money contributed or earned by the transaction)	Description	Activity R=Restore P=Protect E=Enhance	Any existing protection? (yes/no)	Open to hunting and fishing? (yes/no)