



MEMORANDUM

To: MCWD Board of Managers

From: Anna Brown

Date: May 25, 2017

Re: 17-036 Authorization to request funds from the Lessard Sams Outdoor Heritage Council

Purpose:

Provide an update on the application status to request funds from the Lessard Sams Outdoor Heritage Council for Carp Management in the Six Mile-Halsted Bay Subwatershed.

Background:

The Six Mile-Halsted Bay subwatershed was identified in 2014 as a focal priority for planning and implementation activities due to its scale, natural resource complexity, existing impairments, planned land use change, existing partnerships, and connection to Halsted Bay, which requires the largest phosphorus load reduction of any waterbody in the District. The District has led a cross-jurisdictional partnership within this geography identifying strategies to protect and restore the system while integrating natural resource work with that of other public and private partners to maximize the return on the public's investment.

One of the principal restoration strategies for the Six Mile-Halsted Bay system is the management of common carp. The District recently completed a study in coordination with the University of Minnesota evaluating carp recruitment and population density that verified the need to control the carp population in order to advance water and natural resource goals. District staff have developed a management strategy based on the recently gathered carp field data that will suppress recruitment, and bring populations below the damage threshold, to address the Partnership's clean water goals for the system.

In seeking to diversify the funding strategy for the Six Mile-Halsted Bay implementation, staff have identified that the objectives of the carp management program align with those of the Lessard-Sams Outdoor Heritage Fund (OHF). OHF funds projects and programs that restore, project, and enhance wetlands, prairies, forests and habitat for fish, game and wildlife. It is estimated that the State Legislature will make available approximately 100 million in

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appropriation recommendations for fiscal year 2019, which begins July 1, 2018. Funds have to be spent within 3 years, or 5 years with an extension. The application deadline is May 31, 2017.

Application Framework

At the May 11 District Board Meeting, staff presented the initial framework for the application to the OHF and sought the Board's guidance on pursuing this funding resource.

At that meeting, staff presented the application framework, which would focus principally on the role that carp management plays in restoring habitat for fish and waterfowl. The application will also discuss the role that carp management would play in the broader Six Mile restoration strategy, which will be one of the largest restoration project in the Metro Region.

Staff presented the carp management strategy that would be supported by this grant, which consists principally of the following actions:

- Suppression of carp recruitment
- Installation of barriers to limit fish passage
- Removal of adult biomass

The District grant match would be principally in the form of in kind services including the already completed U of M Carp Assessment and effectiveness monitoring to routinely reassess the impact of removal efforts. The application will also outline the existing investments made towards enhanced ecological integrity including the Lennar restoration and the Six Mile Marsh Preserve restoration as grant match.

Application Progress

Since the May 11 meeting, Staff have been working to refine the application and build additional support from its partners.

Staff met with Manager Bill Becker to discuss the draft application. Staff also met with Mike Malling, a private lands biologist with the US Fish and Wildlife Service (USFWS), with a history of involvement in successful applications. Both provided suggested revisions that have been incorporated.

The attached document reflects some of the feedback received so far but is still a draft. Staff will continue to work on the application until the May 31 deadline.

Support

Through our pre-application meetings, it was made clear that a strong network of support is critical in preparing a successful funding request. At the May 11 Board meeting, staff discussed potential partners to provide letters in support of this application, including members of the Six

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Mile-Halsted Bay Subwatershed Partnership and agencies and non-profits known for their role in wildlife conservation.

The District has received a letter of support from the Minnesota Waterfowl Association. Staff will continue to work with USFWS and the Subwatershed Partnership to secure additional letters by the May 31 application deadline.

Discussion of Overhead

At the May 11 Board meeting, staff outlined the importance of minimizing overhead costs within the application for increase its competitiveness. Staff presented two areas where overhead costs could be otherwise absorbed by the District: equipment and staffing. As presented, equipment costs are relatively low and can likely be absorbed into the budget to increase application competitiveness. Staff offered work towards a recommendation to bring back to the Board at the May 25 meeting.

For staffing considerations, two options were presented:

- Option 1: Budget for an addition staff person in the OHF application
- Option 2: Utilize R&M staff and reduce certain baseline AIS activities

The Board discussed these options, and generally favored option 2 over requesting a new staff position through the grant, potentially impacting grant competitiveness. Staff proposed to return with a recommendation regarding staffing of the management program at the May 25 meeting.

May 25 Meeting

Following the discussion at the May 11 board meeting, staff committed to returning on the 25th with the following:

- A refined grant application
- A final application request amount
- A recommendation on overhead management in the application
- A recommendation for staffing the carp management program

Communications Plan

During pre-application meetings, we have discussed the importance of contacting the members of the OHC directly to ensure that they understand the purpose and intent of the program. Staff are currently developing outreach materials to support these contacts, including a program overview handout and an updated webpage.

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Immediately following the May 31 application submittal, staff will coordinate with Manager Becker to set up phone calls or, preferably, face to face meetings with members of the Council.

Next Steps:

Pending final authorization to release the request for funds from the OHF, staff will work towards finalizing the application for the May 31, 2017 deadline.

Meetings with OHC members will be set up immediately following submittal.

If there are questions in advance of the meeting, please contact: Anna Brown (952) 641-4522

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MEETING DATE: May 11, 2017

TITLE: Authorization to Request Funding from Lessard Sams Outdoor Heritage Council

RESOLUTION NUMBER: 17-036

PREPARED BY: Anna Brown

E-MAIL: abrown@minnehahacreek.org

TELEPHONE: 952-641-4522

REVIEWED BY: Administrator Counsel Program Mgr. (Name): James Wisker
 Board Committee Engineer Other

WORKSHOP ACTION:

<input type="checkbox"/> Advance to Board mtg. Consent Agenda.	<input type="checkbox"/> Advance to Board meeting for discussion prior to action.
<input checked="" type="checkbox"/> Refer to a future workshop (date): May 25, 2017	<input type="checkbox"/> Refer to taskforce or committee
<input type="checkbox"/> Return to staff for additional work.	<input type="checkbox"/> No further action requested.
<input type="checkbox"/> Other (specify):	

PURPOSE or ACTION REQUESTED:

Authorization to submit an application to Lessard Sams Outdoor Heritage Council (LSOHC) requesting funding for Carp Management in the Six Mile-Halsted Bay Subwatershed

PROJECT/PROGRAM LOCATION:

Six Mile-Halsted Bay subwatershed

PROJECT TIMELINE:

May 31, 2017: Application deadline
August 22-24, 2017: Proposal hearings to Lessard Sams Outdoor Heritage Council
September 28, 2017: Allocation selections made
July 1, 2018: Project period begins
June 30, 2021: Project completion and reporting deadline

PROJECT/PROGRAM COST:

No match is required for Lessard-Sams Outdoor Heritage Funds, however staff may advise that the District assume certain costs in order to increase competitiveness.

PAST BOARD ACTIONS:

N/A

SUMMARY:

Over the last two years, the Minnehaha Creek Watershed District has undergone an assessment of its organizational strategy. This strategic planning process has established the development of high impact capital projects, integrated with non-water initiatives through multi-jurisdictional partnerships, as the District's highest organizational priority. At the same time, the District board has identified the limits of the District's tax levy in funding implementation at a larger scale.

The Six Mile-Halsted Bay subwatershed was identified in 2014 as a focal priority for planning and implementation activities due to its scale, natural resource complexity, existing impairments, planned land use change, existing partnerships, and connection to Halsted Bay, which requires the largest phosphorus load reduction of any waterbody in the District. The District has led a cross-jurisdictional partnership within this geography which has identified strategies to protect and restore the system while integrating natural resource work with that of other public and private partners to maximize the return on the public's investment.

Subwatershed Partners have executed a Resolution of Support formally establishing the Subwatershed Partnership, and memorializing support for an implementation plan and investment framework that leverages outside funds to support the scale of implementation needed.

One of the principal restoration strategies for the Six Mile-Halsted Bay system is the management of common carp in the shallow lake system. The District recently completed a study in coordination with the University of Minnesota of carp recruitment and population density that verified the need to control the carp population in order to advance water and natural resource goals. District staff have developed a management strategy based on the recently gathered carp field data that will suppress recruitment, and bring populations below the damage threshold, to address the Partnership's clean water goals for the system.

In 2016, recognizing limitations of the MCWD levy to support the scale of watershed implementation being planned, the MCWD Board of Managers appointed an Investment Task Force. This Task Force developed a preliminary strategy to pursue and obtain ongoing supplemental funding, larger than one-time grants, to implement objectives identified within priority focal subwatershed plans, such as the Six Mile-Halsted Bay Subwatershed. The task force recommended the following strategies be employed:

- Group individual projects into implementation categories that can be effectively marketed as larger scale programmatic initiatives to specific funding sources.
- Focus strategically on a select grouping of funds that 'fit' the capital implementation program
- Develop strategic partnerships with third parties that increase eligibility for programmatic funding described above.

In seeking to diversify the financing strategy for the Six Mile-Halsted Bay implementation, staff have identified that the objectives of the carp management program align with those of the Lessard-Sams Outdoor Heritage Fund (OHF).

OHF funds projects and programs that restore, project, and enhance wetlands, prairies, forests and habitat for fish, game and wildlife. It is estimated that the State Legislature will make available approximately 100 million in appropriation recommendations for fiscal year 2019, which begins July 1, 2018. Funds have to be spent within 3 years, or 5 years with an extension. The application deadline is May 31, 2017.

At the May 11, 2017 Board meeting, staff will seek preliminary authorization to prepare a funding request to Lessard-Sams for carp management in the Six Mile-Halsted Bay Subwatershed. Staff will coordinate the

preparation of the application with members of the Six Mile-Halsted Bay Subwatershed Partners, the US Fish and Wildlife Service, the MN Department of Natural Resources, and other public and private partners.

A draft application is attached. The application will be updated and modified based on Board and Partner input. A final application will be provided at the May 25 Board Meeting. Between May 11 and May 25, staff will:

- Network with addition partners to gain application support
- Obtain written support from the Six Mile-Halsted Bay Subwatershed Partnership
- Work the the US Fish and Wildlife Service to refine the application
- Determine the balance of in kind and/or direct match to increase application competitiveness
- Determine if certain overhead costs should be left in the application or funded through District levy to increase application competitiveness
- Determine existing staff capacity for implementation of 3-year management program

RESOLUTION

RESOLUTION NUMBER: 17-036

TITLE: **Authorization to apply for grant funds through Lessard Sams Outdoor Heritage Council**

WHEREAS, on February 9, 2017, the Board of Managers approved the District's strategic direction and alignment report, stating its principal organizational strategy of:

- Developing high impact capital projects integrated with non-water initiatives through multijurisdictional partnership;
- Changing the land-use water policy environment to increase early value added partnership with private development, public infrastructure, and public policy and planning; and

WHEREAS, pursuant to Resolution 14-047 the MCWD Board of Managers has identified the Six Mile Creek subwatershed as a priority area for focusing District planning activities and coordination efforts with subwatershed partners; and

WHEREAS, on October 10, 2013, the MCWD Board of Managers authorized the execution of a contract with Dr. Peter Sorenson and the University of Minnesota to conduct a three-year carp assessment of the Six Mile-Halsted Bay subwatershed to identify recruitment, carp census, and management strategies, the results of which serve as the basis for the funding request; and

WHEREAS, the MCWD Board of Managers has identified the need to diversify its external funding resources and develop a programmatic implementation strategy in priority geographies in order to meet the need for implementation of high impact capital projects; and

WHEREAS, Lessard-Sams Outdoor Heritage Fund makes annual recommendations to the Minnesota Legislature for appropriations to restore, protect, and enhance wetlands, prairies, forests, and habitat for fish, game and wildlife for projects greater than \$400,000; and

WHEREAS, staff have identified that the goals of carp management in the Six Mile-Halsted Bay Subwatershed are consistent with those of the Lessard-Sams Outdoor Heritage Fund; and

WHEREAS, the District [WILL SECURE] the support of its partners including the Six Mile-Halsted Bay Subwatershed Partnership, US Fish and Wildlife Service, the University of Minnesota, Minnesota Waterfowl Association [PENDING], and Duck's Unlimited [PENDING]; and

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes staff to apply for FY 2019 funds through the Lessard-Sams Outdoor Heritage Council.

Resolution Number 17-036 was moved by Manager _____, seconded by Manager _____.
Motion to adopt the resolution ___ ayes, ___ nays, ___ abstentions. Date: _____.

Secretary Date: _____

Lessard-Sams Outdoor Heritage Council – **SAMPLE/PROGRAM WORKSHEET** Fiscal Year 2019 / ML 2018 Request for Funding

Date: May 31, 2017

Program or Project Title: Six Mile-Halsted Bay Habitat Restoration Phase I

Funds Requested: \$795,000

Manager's Name: Anna Brown

Title: Planner-Project Manager

Organization: Minnehaha Creek Watershed District

Address: 15320 Minnetonka Blvd.

City: Minnetonka, MN

Number: 952-641-4522

Email: abrown@minnehahacreek.org

County Locations: Carver and Hennepin

Regions in which work will take place: (Check all that apply)

- Northern Forest
- Forest / Prairie Transition
- Southeast Forest
- Prairie
- **Metro / Urban**

Activity types: (Check all that apply)

- Protect in Easement
- **Restore**
- Enhance
- Protect in Fee
- Enter other Activity Here update

Priority resources addressed by activity: (Check all that apply)

- Wetlands
- Forest
- Prairie
- **Habitat**

Abstract (100 words):

Provide a clear, concise summary of the proposed program's activities and outcomes. This should include the Who, What, When, Where, Why and How. This is the most visible description of your program. The abstract will provide readers with an overview of program objectives and will be publicly visible on the LSOHC website and summary reports.

Over the next ten years, the Minnehaha Creek Watershed District (MCWD) and its Partners will engage in habitat restoration in the Six Mile-Halsted Bay Subwatershed (SMCHB) to restore 2,488 acres of in-lake habitat across 14 connected deep and shallow lakes, and create contiguous corridors of restored wetland and uplands. 8 of the 14 lakes are

DNR managed fisheries with public access. This program will improve the fishery and benefit waterfowl and non-game bird communities, improving recreation for fisherman, hunters and bird-watchers. It will also ensure the long term success of the broader restoration strategy for SMCHB, making lasting impacts that will benefit generations to come.

Design and scope of work (500 words):

This section describes the problem to be addressed, the scope of work, how priorities were set, and the urgency and opportunity of the proposed project/program. Be sure that the narrative answers what specific habitat will be affected and how the actions will directly restore, enhance, and/or protect prairies, wetlands, forests, or habitat for fish, game, and wildlife. Your narrative should also address the level of stakeholder involvement and partnership.

The Six Mile Creek-Halsted Bay (SMCHB) subwatershed is a 27 square mile geography in the western metro spanning Carver and Hennepin Counties. The subwatershed includes 14 lakes and hundreds of acres of wetlands through a 12 mile stream system that drains in the Halsted Bay, the western most bay of Lake Minnetonka.

SMCHB is a priority area for the District and its partners including the Cities of Victoria, St. Bonifacius, Minnetrista, and Waconia, Laketown Township, Carver and Hennepin Counties, and Three Rivers Park District. Together, these Partners have formed the SMCHB Partnership to align priorities and investments across agencies to accomplish large scale habitat and corridor restoration and meet clean water objectives over the next 10 years.

The geography contains 1,700 acres of Shallow Marsh wetland and a total wetland area of 2,900 acres. The 14 lakes total 2,488 acres, 66% of which are littoral. The system contains a mixture of shallow and deep lakes, many of which have been degraded due to high numbers of Common Carp and historic agricultural land use, impacting habitat for bass, panfish, pike, and waterfowl. Carver Park Reserve is situated entirely within this target subwatershed, providing 5,700 acres of permanently protected open water, wetland, forest, and prairie habitat. Much of the park is designated as DNR Regionally Significant Ecological Area, as are several other wetland corridor areas in other parts of the subwatershed. Halsted Bay is a highly impaired water body on Lake Minnetonka, the most heavily used recreation lake in the State, and users have reported decreased fishing success in the bay.

Carp management will be the first prong of three-pronged strategy to restore the ecological integrity of the SMCHB subwatershed. Subsequent phases will:

- Restore wetland and supportive uplands to establish contiguous natural resources corridors
- Restore water quality in Halsted Bay

Common Carp pose a significant challenge in maintaining a healthy fishery with moderate abundances of aquatic plants, and invertebrates to support healthy fisheries and waterfowl. Carp feeding behavior uproots aquatic vegetation, increasing turbidity and removing native vegetation used for spawning and cover from predation. Many priority species for anglers are positively related to having moderate abundances of aquatic vegetation, and the impact from Carp is evident in the degraded aquatic plant and fish communities, including panfish, bass and pike populations.

The management approach for SMCHB was developed based on a three year assessment completed with the University of Minnesota AIS Research Center from 2014-2017, which identified some of the highest carp concentrations ever observed by the center. Proposed management approach would include:

- Aerating 6 shallow marsh areas known to winterkill to promote bluegill sunfish survivability and prevent carp recruitment.
- Physical barriers at 4 locations to block carp from accessing spawning areas. The barrier between Mud and Halsted will also trap carp for removal.
- Install a water control structure and barrier between two shallow lake systems to have the ability to block carp passage and manipulate water levels to eliminate carp recruitment and maintain healthy shallow lake systems.
- Remove adult carp through winter or open water seining, box-net trapping, and removing carp in stream channels.

Carp are powerful invaders that threaten Minnesota's native aquatic ecosystems and recreational activities. It is critical to manage these invaders before populations grow and migrate into new waters. Management of carp in the SMCHB Subwatershed will prevent population growth and migration of this invasive species, restoring water quality, habitat, ecological diversity and recreational benefits to the subwatershed and to downstream waters.

Which sections of the Minnesota Statewide Conservation and Preservation Plan are applicable to this project: Check the top TWO that apply

- H4 Restore and protect shallow lakes
- H5 Restore land, wetlands and wetland-associated watersheds

Which other plans are addressed in this proposal: Check the top TWO that apply

- Long Range Plan for Fisheries Management
- Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife

Describe how your program will advance the indicators identified in the plans selected (150 words):

Managing Minnesota's Lakes for Waterfowl and Wildlife

This program meets the objective outlined in the plan to increase waterfowls and wildlife habitat in shallow lakes with public access that do not have tracts of shoreline specifically managed for wildlife. In the short term, the rough fish management program meets the strategy of managing invasive species that are impacting wildlife habitat, and longer term the SMCHB program will further meet the objective through acquisition and restoration of wetlands and prairie that will further enhance waterfowl habitat across the subwatershed.

Long Range Plan for Fisheries Management

This program meets Core Function 2 in the Long Range Plan for Fisheries Management: Conserve, Improve, and restore fish populations and aquatic habitat. This program follows the priority activities of improving habitats so they sustain healthy aquatic systems and fish populations for recreational and commercial uses. Removing abundant carp will restore aquatic vegetation, which is valuable habitat for fish. Aerating winterkill prone lakes not only eliminates carp recruitment, it will sustain bigger, and more abundant bluegills, which frequently migrate from these shallow lakes to lakes that are publicly accessible and commonly fished by anglers..

Which LSOHC section priorities are addressed in this proposal: Check the top ONE applicable outcome per region with text box to explain

Metro / Urban:

- Protect, enhance, and restore remnant native prairie, Big Woods forests, and oak savanna with an emphasis on areas with high biological diversity
- Protect habitat corridors, with emphasis on the Minnesota, Mississippi, and St. Croix rivers (bluff to floodplain)
- Enhance and restore coldwater fisheries systems
- **Protect, enhance, and restore riparian and littoral habitats on lakes to benefit game and nongame fish species**
- Protect from long-term or permanent endangerment from invasive species

Describe how your program will produce and demonstrate a significant and permanent conservation legacy and/or outcomes for fish, game, and wildlife as indicated in the LSOHC priorities (250 words):

The SMCHB program will improve the hunting and fishing legacy in the metro area by targeting carp control as a means to restore vegetation and invertebrate populations in shallow lakes and littoral habitats in order to provide better refuge, spawning structure and improved food source for fish and wildlife. 2,488 acres will be restored, of which 66% is littoral habitat. MN DNR fisheries have reported that moderately abundant aquatic plant communities promote high fish species richness and are optimal for growth and survival of fishes. Restoration of plant communities through this program will benefit gamefish such as Bass, panfish and northern pike communities, as well as non-game fish and waterfowl, providing hunters and fisherman better recreation opportunities.

8 of the 14 lakes being addressed by this program are DNR managed fisheries. Most of the lakes have natural shorelines, providing optimum conditions for fishery improvements with in-lake habitat restoration. The state record largemouth bass was taken from one of these lakes in 2005, so the potential exists for these lakes to become great metro bass fisheries. Halsted Bay of Lake Minnetonka is the receiving waterbody of this system. Minnetonka is a world class fishery, often known for its bass, walleye and muskellunge populations. Halsted Bay used to be a premiere bass fishery, but the bay is degraded, and users have reported decreased fishing success in the bay.

Habitat will further be restored in 6 shallow lakes across the system, improving aquatic vegetation and invertebrate communities that will benefit waterfowl use. Three of these lakes are accessible for hunting.

Describe how the proposal uses science-based targeting that leverages or expands corridors and complexes, reduces fragmentation or protects areas identified in the MN County Biological Survey (350 words):

This program to manage common carp in SMCHB would be one of the largest, most robust rough fish management program ever conducted in the state. The management approach is built directly out of a three year assessment conducted in partnership with the University of Minnesota AIS Research Center which evaluated carp abundance, recruitment patterns, and seasonal movement patterns. The rich assessment of carp in SMCHB has allowed the District to develop specific target management areas and quantifiable goals for each area. Having been just recently completed in January of 2017, this management approach is building on the most up to date information possible, making the timing ripe to implement this program.

SMCHB is an incredibly rich ecological system that seen declining conditions due to over-abundant carp, land use patterns that have substantially altered the hydrology and ecology of the 2,900 acres of wetland, and high nutrient inputs to its 14 lakes. SMCHB subwatershed has XX acres of nearly contiguous DNR-designated Regionally Significant Ecological Area that spans the watershed and 15 unique sites of Minnesota Biological Survey Sites of Biodiversity significance. The 5,700 acre Carver Park Preserve provides habitat for over 75 species of birds and seven species of waterfowl nest in the area that would benefit from enhanced foraging activities once the carp population declines. The Subwatershed lies within the Mississippi flyway, a critical corridor for migratory waterfowl. SMCHB provides all this ecological benefit and value within 25 miles of downtown Minneapolis, making its restoration of preservation that much more critical to support the overall ecological value with the metro region and provide habitat for species that have been negatively impacted by urbanization.

The carp management program leverages restoration work completed by the District and additional restoration that will be completed over the next decade so that the benefits span the aquatic-terrestrial continuum and maximize benefits to those species that rely on the shoreline transect to reproduce, feed, and rest. In 20XX MCWD restored XX acres of prairie adjacent to Six Mile Marsh within a regionally significant ecological corridor. MCWD is currently restoring a 20 acre wetland complex situated between two MBS sites of biodiversity significance that will enhance the vegetative diversity of the site, providing improved habitat in an area of rapid urbanization. MCWD will continue strategically targeting restorations like these to enhance the impact of the in-lake management approach.

How does the proposal address habitats that have significant value for wildlife species of greatest conservation need, and/or threatened or endangered species, and lists targeted species (350 words):

Removing common carp and controlling their reproduction will have benefits across the entire trophic chain. As these carp populations are reduced, we will see restoration of aquatic vegetation, macroinvertebrates, and water quality, restoring food and habitat for numerous species of fish and wildlife, and in turn, restoring populations of these species.

In particular, carp management will allow shallow lakes to shift to a new, healthier alternative stable state. Much of the subwatershed's littoral area is currently turbid and algae-dominated. However, with fewer carp uprooting vegetation and resuspending nutrients, littoral waters can return to clear-water states dominated by submerged aquatic vegetation. Evidence suggests that this alternative stable state positively impacts the food web on many levels. Higher abundance and diversity of aquatic vegetation is related to higher abundance, diversity and growth rates of fish and waterfowl, likely because vegetation provides better refuge and spawning habitat. These factors, combined with reduced competition for macroinvertebrates and other food, explain why carp management can have indirect effects on many species.

The ecological benefit this program provides has been endorsed by the Minnesota Waterfowl Association and the US Fish and Wildlife Service. Specific species that will benefit include:

Harvested waterfowl: Mallards, Wood ducks, Ring-necked ducks, Blue-winged teals and Lesser scaup

Game fish: This subwatershed contains over 20 fish species including largemouth bass, northern pike, sunfish, bluegill, pumpkinseed, golden shiner, Iowa darter, johnny darter, white sucker, yellow perch, walleye, black and white crappie

Water-birds listed on the Minnesota DNR Species in Greatest Conservation Need: Northern pintail, American black duck, Lesser scaup, Trumpeter swan, Common loon, Western grebe, Horned grebe, Red-necked grebe, Eared grebe, Night heron, Franklin's gull, American white pelican, Upland sandpiper, White-rumped sandpiper, Semipalmated sandpiper, and Buff-breasted sandpiper.

Identify indicator species and associated quantities this habitat will typically support (250 words):

CRITERIA #5 - Explain here game and non-game indicator species that will benefit from the work outlined in this request.

Example 1: Mallards – Utilizing USFWS's thunderstorm models, we estimate the fee-title acquisition of 1,000 acres as outlined within the proposal can produce an additional 2,000 nesting pairs of mallards.

Example 2: Pheasants – The removal of trees and prescribed fire within the existing 20,000 acres of Wildlife Management Areas within the farmland zone of Minnesota as outlined in this proposal is estimated to produce an additional 10,000 pheasants annually.

Example 3: Monarch Butterfly – The conversion of 100 acres of cropland to restored native prairie (planting seed mix BWSR U3) as outlined within this proposal is estimated to grow an additional 500 new stems of milkweed which in turn is estimated to produce an additional 250 monarch butterflies.

Example 4: Brown Trout – The protection of 1,000 ft along the Outdoor Heritage Stream via conservation easement that protects the existing high quality stream habitat will protect an estimated 500 brown trout.

ANOTHER EXAMPLE that Sarah found: The various trout species are the key indicator species for our project. Our activities restore and/or enhance habitat that typically supports a biomass of 100 to 130 pounds per acre of brook or brown trout in southeast MN trout streams, and 40 pounds per acre of trout in northern MN trout streams.

The benefits of carp management are more easily evaluated on an ecosystem level rather than on any species level. As explained above, reducing carp populations allows recovery of aquatic vegetation, macroinvertebrates, and water quality. This restores food and habitat for numerous species of fish and wildlife, and in turn, restores populations of these species. Therefore, we will use several indices of ecosystem health as indicators of carp management success. To evaluate the health of macrophyte communities we will use the Floristic Quality Index and the "Score the Shore" index. We will also use the Index for Biotic Integrity to measure fish and macroinvertebrate health. Our goals are to increase these scores by....

In addition, while carp are not technically an indicator species, they will serve as indicators of our management progress. Our goal is to reduce carp biomass to 100 kg/ha, the threshold indicating the density at which carp begin to appreciably impact a system's water quality and ecological integrity. We divided the subwatershed into management areas, and even further into individual lakes, and we have used three-years of carp abundance data to determine exactly how much biomass must be removed from each lake to cross the 100 kg/ha threshold. Monitoring for carp abundance as management occurs will indicate if we are meeting biomass reduction goals in each lake and if we are on track to cross the threshold.

Other indicator species of ecosystem quality include mallards and several species of vegetation such as wild rice, wild celery....

While there is limited data available on the effect of carp removal on fish communities, [insert fish species] may also serve as indicator...

Outcomes:

Programs in metropolitan urbanizing region:

Protect, enhance and restore riparian and littoral habitats on lakes to benefit game and non-game fish species.

Management of carp will restore, enhance and protect 1,644 acres of valuable habitat for fish and wildlife across 14 lakes. Aquatic vegetation will be restored in the littoral zone of deep and shallow lakes across the system, water clarity will improve, turbidity will decrease, and macroinvertebrate communities will be restored. Measurement of success will require data collection on the aquatic plant community, using the DNR's Floristic Quality Index, as well as other measures of aquatic plant communities such as percent cover, frequency of occurrence and biovolume. Water quality indicators that will be tracked include Total Phosphorus, Chlorophyll-a, Total Suspended Solids and Water Clarity. Fish and macroinvertebrate communities are predicted to improve based on improved aquatic vegetation habitat. The DNR's Fish Index of Biological Integrity will be completed a few years after carp management goals have been achieved, and will be compared to pre-removal data that has already been collected. Fish community change is expected to take longer to see a response in than more immediate changes in water clarity and aquatic vegetation.

Protect from long term or permanent endangerment from invasive species.

Using an integrated pest management strategy from carp management research conducted by the University of Minnesota, carp removal efforts can be sustainable. By first addressing areas where carp spawn by preventing winterkill, and maintaining healthy bluegill populations, which prey effectively on carp eggs, you can then remove adult carp biomass and make measurable sustained reductions in carp populations. Carp recruitment areas will be monitored long term by assessing winter dissolved oxygen concentrations and performing trap-net surveys that are used to sample juvenile carp. Barriers will also be maintained long-term, and low levels of carp removal will occur as needed to maintain populations beyond the duration of this grant period.

How will you sustain and/or maintain this work after the Outdoor Heritage Funds are expended (200 words):

The Minnehaha Creek Watershed District (MCWD) is a permanent entity created by state statute and operates under a series of 10-year plans that are approved by MNBWSR. The previous 10-year plan was written in 2007, and the District is

currently working on its next 10-year plan right now. This next 10-year plan will have a section devoted to the Six Mile – Halsted Bay Subwatershed, and will include an extensive investment strategy in this priority area over the next 10 years, that will include carp management as well as other restoration strategies.

The MCWD relies on multiple funding sources including a local levy as well as public and private partnerships, including LSOHC. The District releases an annual report to MNBWSR on monitoring results and accomplishments from the year. The District also operates an Aquatic Invasive Species Program, whose top priority is to manage high impact AIS, such as common carp, in prioritized geographies of the District. The District has the commitment and funding sources necessary to maintain existing and future natural resource enhancement projects.

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

Year	Source of Funds	Step 1	Step 2	Step 3
2021 & beyond	Local levy	Maintain aeration units and barriers	Monitor for carp recruitment and gather carp population estimates	Engage in carp removal if carp recruitment occurs, or populations exceed 100 kg/ha.

What is the degree of timing/opportunistic urgency and why it is necessary to spend public money for this work as soon as possible (150 words):

It is critical to manage these powerful invaders before populations grow and migrate into new waters. The District just completed a half-million dollar, 3-year carp assessment with the University of Minnesota in this geography. Waiting to implement carp management will make that data out-of-date, requiring new population estimates to be gathered. Carp management is phase 1 of habitat restoration in this area, but additional phases cannot be implemented until carp management is underway. Additional phases may include wetland restoration, as well as protection and restoration of upland areas by easement or possible land purchases. The sooner carp management can be implemented, the sooner other strategies can begin and restoration of this geography can occur.

How does this proposal include leverage in funds or other effort to supplement any OHF appropriation (200 words):

The Minnehaha Creek Watershed District just completed a half-million dollar investment with the University of Minnesota to provide a scientific assessment of common carp in this geography. Those funds were all provided by the District’s local levy. Additionally, the District will invest in the necessary monitoring equipment to implement this project, and maintain the project long-term. District will provide in-kind staff time during the duration of the project to complete most tasks, reducing funds needed from OHF.

Relationship to other funds:

- Arts and Cultural Heritage Fund
- Environmental and Natural Resource Trust Fund
- Clean Water Fund
- Parks and Trails Fund
- Enter Other Funds Here

Describe the relationship in the text box provided here

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

Appropriation Year	Source	Amount
2014-15	Local Tax Levy	\$181,386
2015-16	Local Tax Levy	\$165,649
2016-17	Local Tax Levy	\$186,355 projected

Activity Details

Requirements:

If funded, this proposal will meet all applicable criteria set forth in MS 97A.056 – **Yes/No All proposals will answer**

We have reviewed MS 97A.056 and all the criteria set forth therein. Because this project does not involve acquiring land, many criteria are not applicable, but we plan to follow all applicable criteria.

Subd. 11. **Recipient requirements.**

Will local government approval be sought prior to acquisition - **Yes/No Fee proposal will answer**

No acquisition planned

Is the land you plan to acquire free of any other permanent protection - **Yes/No Fee proposal will answer**

Is the land you plan to acquire free of any other permanent protection - **Yes/No Easement proposal will answer**

EXPLAIN HERE

Will restoration and enhancement work follow best management practices including MS 84.973 Pollinator Habitat Program - **Yes/No Restore/Enhance proposal will answer**

The project will follow best management practices. The project does not include any planting of vegetation, but by restoring and enhancing littoral areas, we will promote macrophyte growth and perhaps create some pollinator habitat.

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/No Restore/Enhance proposal will answer**

EXPLAIN HERE

Do you anticipate federal funds as a match for this program - **Yes/No All proposals will answer**

Are the funds confirmed - **Yes/No**

[Documentation](#)

What are the types of funds?
Other - EXPLAIN HERE

Land Use:

Will there be planting of corn or any crop on OHF land purchased or restored in this program - **Yes/No** **All proposals will answer**

EXPLAIN HERE There will be no planting of corn or any crop.

Are any of the crop types planted GMO treated - **Yes/No**

Is this land currently open for hunting and fishing - **Yes/No** **Fee proposal will answer**

Open hunting and fishing will comply with State regulations

Will the land be open for hunting and fishing after completion - **Yes/No** **Fee proposal will answer**

8 of the lakes within this system are have fishing access. Hunting access is limited to Marsh Lake Hunt Club.

Will the eased land be open for public use - **Yes/No** **Easement proposal will answer**

N/A

Are there currently trails or roads on any of the acquisitions on the parcel list - **Yes/No** **Fee/Easement proposal will answer**

Describe the types of trails or roads and the allowable uses:

EXPLAIN HERE

Will the trails or roads remain and uses continue to be allowed after OHF acquisition – **Yes/No**

How will maintenance and monitoring be accomplished:

EXPLAIN HERE

Will new trails or roads be developed as a result of the OHF acquisition – **Yes/No**

Describe the types of trails or roads and the allowable uses:

EXPLAIN HERE

How will maintenance and monitoring be accomplished:

EXPLAIN HERE

Accomplishment Timeline

Activity	Approximate Date Completed
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Objectives	
Run electric for aeration units	September 2018
Install aeration units	November 2018
Install permeable berm at outlet of Crown College Pond	September 2018
Install weir and stilling well between North & South Lundsten	September 2019
Replace barrier at Zumbra outlet	September 2018
Install barrier/fish-trap between Mud Lake and Halsted Bay	September 2018
Install barrier at Wasserman outlet	September 2018
Box-Net Trapping	ongoing during open water season
Winter/open-water seining	ongoing fall/winter
Carp trapping in stream channels	ongoing during open water season
Monitoring	
Carp population surveys	July – Sept - Annually
Winter dissolved oxygen monitoring	January – February - Annually
Spring trap-net surveys	April – May - Annually
Fall trap-net surveys	August – October - Annually
Implanting radio tags	October 2018
Tracking radio-tagged carp	January – March - Annually
Aquatic plant surveys	June – September Annually
Water quality monitoring	ongoing all year – varies by parameter

Budget Spreadsheet

Total Amount of Request: \$795,000

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$0	\$267,406	MCWD Tax Levy	\$267,406
Contracts	\$568,000	\$0		\$568,000
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	\$0	\$0		\$0
Professional Services	\$0	\$0		\$0
Direct Support Services	\$0	\$0		\$0
DNR Land Acquisition Costs	\$0	\$0		\$0
Capital Equipment	\$167,000	\$0		\$167,000
Other Equipment/Tools	\$0	\$91,257	MCWD Tax Levy	\$91,257
Supplies/Materials	\$60,000	\$0		\$60,000
DNR IDP	\$0	\$0		\$0
Total	\$795,000	\$358,663		\$1,153,663

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Position 1	.6	3.00	\$0	\$151,851	MCWD Tax Levy	\$151,851
Position 2	.5	3.00	\$0	\$72,222	MCWD Tax Levy	\$72,222
Position 3	.3	3.00	\$0	\$43,333	MCWD Tax Levy	\$43,333
Total	1.00	3.00	\$10,000	\$10,000	-	\$267,406

Capital Equipment

Item Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Aeration Units	\$22,000	\$0		\$22,000
Permeable berm (barrier)	\$20,000	\$0		\$20,000
Weir, barrier & stilling well	\$30,000	\$0		\$30,000
Physical barriers	\$20,000	\$0		\$20,000
Barrier/fish-trap	\$75,000	\$0		\$75,000
Total	\$167,000	\$0	-	\$167,000

Amount of Request: \$795,000
 Amount of Leverage: \$358,663
 Leverage as a percent of the Request: 45.11%
 DSS + Personal: \$267,406
 As a % of the total request: 0%
 Easement Stewardship: \$0
 As a % of the Easement Acquisition: 0%

How did you determine which portions of the Direct Support Services of your shared support services is direct to this program: EXPLAIN HERE

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

Does the amount in the travel line include equipment/vehicle rental? – Yes/No

Explain the amount in the travel line outside of traditional travel costs of mileage, food, and lodging: EXPLAIN HERE

Describe and explain leverage source and confirmation of funds: EXPLAIN HERE

Does this proposal have the ability to be scalable? – Yes/No

Tell us how this project would be scaled and how administrative costs are affected, describe the “economy of scale” and how outputs would change with reduced funding, if applicable: EXPLAIN HERE

Output Tables

Table 1a. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore				1,262	1,262
Protect in Fee with State PILT Liability					
Protect in Fee W/O State PILT Liability					

Protect in Easement					
Enhance				382	382
Total	1			1,644	1,644

Table 1b. How many of these Prairie acres are Native Prairie?

Type	Native Prairie
Restore	0
Protect in Fee with State PILT Liability	0
Protect in Fee W/O State PILT Liability	0
Protect in Easement	0
Enhance	0
Total	0

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$763,500	\$763,500
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	\$31,500	\$31,500
Total	\$0	\$0	\$0	\$795,000	\$795,000

Table 3. Acres within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	1,262					1,262
Protect in Fee with State PILT Liability						
Protect in Fee W/O State PILT Liability						
Protect in Easement						
Enhance	382					382
Total	1,644					1,644

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	\$763,500	\$0	\$0	\$0	\$0	\$763,500
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	\$31,500	\$0	\$0	\$0	\$0	\$31,500
Total	\$795,000	\$0	\$0	\$0	\$0	\$795,000

Tables 5 and 6 will be auto populated from the information provided above, applicants do not need to calculate or complete

Table 5. Average Cost per Acre by Resource Type

Type	Wetlands	Prairies	Forest	Habitats
Restore	\$10	\$10	\$10	\$10

Protect in Fee with State PILT Liability	\$10	\$10	\$10	\$10
Protect in Fee W/O State PILT Liability	\$10	\$10	\$10	\$10
Protect in Easement	\$10	\$10	\$10	\$10
Enhance	\$10	\$10	\$10	\$980

Table 6. Average Cost per Acre by Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest
Restore	\$10	\$10	\$10	\$10	\$0
Protect in Fee with State PILT Liability	\$10	\$10	\$10	\$10	\$0
Protect in Fee W/O State PILT Liability	\$10	\$10	\$10	\$10	\$0
Protect in Easement	\$10	\$10	\$10	\$10	\$0
Enhance	\$10	\$10	\$10	\$10	\$0

Target Lake/Stream/River Feet or Miles

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Attachments:

- 1. The Online Program Management System will generate a map based on the parcel list that will be attached here**
- 2. Other attachments submitted will appear after the system map, for example, the required Proposal Illustration, photos, letters of support, etc.**