

# Request for Funding

## Lessard-Sams Outdoor Heritage Council Fiscal Year 2015 / ML 2014

**Program or Project Title:** Lake Nokomis Habitat Enhancements

**Funds Requested: \$604,000**

**Manager's Name:** Jennifer Ringold  
**Title:** Director of Strategic Planning  
**Organization:** Minneapolis Parks and Recreation Board  
**Street Address:** 2117 West River Road N  
**City:** Minneapolis, MN 55411  
**Telephone:** 612-230-6464  
**E-Mail:** jringold@minneapolisparcs.org  
**Organization Web Site:**

**County Locations:** No Counties Listed

### **Ecological Planning Regions:**

- Metro / Urban

### **Activity Type:**

- Enhance

### **Priority Resources Addressed by Activity:**

- Habitat

## **Abstract:**

MPRB requests \$604,000 to improve aquatic habitat in Lake Nokomis. This four-part project will install a carp exclusion mechanism, remove adult carp from the lake, implement three acres of native plant propagation areas, and enhance 4875 linear feet of shoreline.

## **Design and Scope of Work:**

The four complementary enhancement activities included in this project will improve habitat for fish, birds, reptiles, amphibians, and aquatic invertebrates in the entirety of Lake Nokomis. The lake measures 200 acres, approximately half of which is less than 15 feet deep. Its shoreline consists of a combination of Works Progress Administration stone wall in varying condition along with stretches of turfgrass with poor quality native shoreline buffer and little emergent vegetation along the eroding lake edge. This Minneapolis lake is fully open to public access for boating and fishing. It is an important stop-over for migratory waterfowl, songbirds, and shorebirds that use the Mississippi Flyway, such as wood ducks, loons, grebes, coots, warblers, vireos, grosbeaks, herons, rails, and sandpipers. The Minnesota DNR stocks the lake with muskellunge and walleye as part of the Fishing in the Neighborhoods Program. Additional game fish in the lake include largemouth bass, northern pike, bluegill, crappie, and yellow perch.

The fishery, however, is not currently thriving due to a variety of habitat issues. An ongoing Biomanipulation

Study performed by the Minnehaha Creek Watershed District (MCWD) is addressing the prevalence of stunted bluegill sunfish and bullheads in the lake. Recently the MCWD has been stocking additional walleye in a control effort. One of the threats to habitat quality in the lake, as identified by the Biomanipulation Study and MPRB water resources staff, is the presence non-native European carp. Carp disturb the lakebed, uprooting aquatic plants and stirring up sediment laden with phosphorous from urban runoff. These fish therefore re-introduce nutrients into the water, instigating algae blooms. Together, algae blooms and suspended solids lessen water clarity, which further affects native aquatic plants' ability to grow. Currently, aquatic plants are very sparse in Lake Nokomis, growing only to lake depths up to 5 to 8 feet and not in the entire littoral zone of the lake. This constitutes a reduction in fish, insect, and aquatic invertebrate habitat by nearly half.

To remedy this habitat concern, MPRB proposes four integrated activities. Lake Nokomis is linked by underground pipe and open channel to the Mother Lake / Taft Lake / Legion Lake watershed near the international airport. Carp travel to this watershed to spawn in waters free of predator fish. LSOHF funding will allow for the installation of carp barriers designed to prevent adult fish from leaving Lake Nokomis to spawn. The second activity will physically remove carp from the lake for up to three years. Third, in order to ensure effective germination and growth of native submergent and emergent vegetation, this project would install three acres of plant propagation zones within the littoral zone of the lake. These zones would exclude all fish for several years, to give native species that exist in the lakebed seedbank to get a head start on hungry fish. Lastly, this project will enhance 4875 of shoreline (all the lake's non-walled shoreline excluding beaches, or 34% of the total) by regrading banks to stabilize erosion, removing invasives in the shoreline buffer, and installing appropriate native emergent, submergent, and shoreline plants.

This project's four complementary enhancement activities would improve multiple habitats throughout the lake. The shoreline restoration and plant propagation areas will provide additional habitat for aquatic invertebrates, amphibians, and reptiles, as well as providing near-shore spawning grounds for native fish species. Removal and exclusion of carp will reduce competition for food and allow shoreline, emergent, and submergent vegetation to survive and thrive, thereby providing additional refuge and spawning habitat for aquatic animal species. Through these activities, much of the littoral zone of the lake will be improved with greater water clarity and a more balanced mix of aquatic animal species. As a further result, even habitat in the deeper portions of the lake—mainly used by larger game fish—will benefit from the more complete food chain in the shallows.

The unique combination of activities is proposed based on extensive study of the lake. This project goes beyond mere shoreline restoration and instead looks at the lake environment holistically. Shoreline restoration would not alone accomplish habitat enhancement goals in Lake Nokomis. This thinking has driven a variety of other efforts (in addition to the MCWD's study and walleye stocking) to improve the lake's habitat. In 2002 MCWD and MPRB installed a weir between Lake Nokomis and Minnehaha Creek to reduce nutrient inflow to the lake from the creek, then modified that weir in 2012 to provide protection against zebra mussels. In 2001, MPRB installed several native species-planted storm water treatment ponds near the lake to pre-treat urban runoff and provide habitat for various animal species.

LSOHC funding would continue the MPRB and MCWD's efforts to address a variety of habitat and fisheries concerns, including zebra mussels, water clarity, nutrient loading, and stunted game fish. The funding would fill a gap not currently addressed by other efforts: invasive carp and their effects on in-lake and shoreline vegetation and habitat. This project would leverage general operations and maintenance funding MPRB dedicates to the system in general for habitat management and enhancements, as well as expected staff and consultant time for final design of plant propagation areas, the carp barrier, and shoreline enhancements.

Nearby residents and groups such as Friends of Lake Nokomis, Blue Water Commission, the Nokomis East Neighborhood Association, and MCWD have historically supported efforts to improve lake water quality, habitat, and the fishery through participation in planning and with volunteer efforts.

Lake Nokomis has excellent habitat potential that is not being realized due to a variety of factors, including non-native fish species and reduced water clarity, which affect native aquatic plants. MPRB and MCWD have been studying this generally shallow lake for years and have implemented some critical habitat improvements already. LSOHC funding would allow the next phase of habitat enhancement to take place. The MPRB's proposed four complementary enhancement activities will address lake habitat holistically. This integrated and diversified project constitutes the best chance to make a significant positive impact on all 200 acres of the lake's aquatic habitat.

## 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:**

- Long Range Duck Recovery Plan
- Minnesota DNR Nongame Wildlife Plans
- Minnesota DNR Strategic Conservation Agenda
- Minnesota Sustainability Framework
- National Fish Habitat Action Plan
- North American Waterfowl Management Plan
- State Comprehensive Outdoor Recreation Plan
- Tomorrow's Habitat for the Wild and Rare
- Upper Mississippi River and Great Lakes Region Projects Joint Ventures Plan

### **LSOHC Statewide Priorities:**

- Are ongoing, successful, transparent and accountable programs addressing actions and targets of one or more of the ecological sections
- Ensures activities for "protecting, restoring and enhancing" are coordinated among agencies, non profits and others while doing this important work; provides the most cost-effective use of financial resources; and where possible takes into consideration the value of local outreach, education, and community engagement to sustain project outcomes
- Leverage effort and/or other funds to supplement any OHF appropriation
- Produce multiple enduring conservation benefits
- Provide Minnesotans with greater public access to outdoor environments with hunting, fishing and other outdoor recreation opportunities
- Restore or enhance habitat on permanently protected land
- Use a science-based strategic planning and evaluation model to guide protection, restoration and enhancement, similar to the United States Fish and Wildlife Service's Strategic Habitat Conservation model

### **LSOHC Metro Urban Section Priorities:**

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

## Relationship to Other Constitutional Funds:

- No Relationships Listed

## Accelerates or Supplements Current Efforts:

Since 2001 MPRB and the Minnehaha Creek Watershed District have been working to improve the quality of habitat and the fishery in Lake Nokomis through a variety of efforts. A weir between the lake and Minnehaha

Creek installed in 2002 and modified in 2012 eliminates creek inflow, thereby reducing nutrients in the lake and protecting it from zebra mussels. Native-planted stormwater ponds installed in 2001 also mitigate urban runoff. The MCWD's Biomanipulation Study is addressing the prevalence of stunted bluegill sunfish and bullheads initially through stocking of predator walleye. Lake Nokomis also has a TDML in place that is addressing phosphorous levels in the lake. The MPRB's proposed four complementary habitat enhancement activities will address a habitat threat not currently being dealt with by other efforts: invasive European carp and their affect on native aquatic vegetation. LSOHC funding for this project will fill a gap in the numerous other activities taking place in and around the lake. It will allow the MPRB and MCWD to improve fish, reptile, amphibian, bird, and aquatic invertebrate habitat holistically through a variety of means and with a variety of funding sources.

## Sustainability and Maintenance:

The stewardship plan for enhanced habitat at Lake Nokomis will be led by MPRB environmental stewardship staff. Their primary focus will be to continue to remove invasive tree and herbaceous species from the shoreline, monitor and repair any recurring erosion, and monitor and repair carp barriers and fish exclusion fencing as needed. MPRB may contract with Conservation Corps Minnesota and will also utilize its youth employment program, Teen Teamworks, to help with invasives removals. Teen Teamworks is a youth employment program that helps teens and young adults develop job skills focused on maintenance and natural resource management. Water resources staff will also conduct aquatic plant surveys. The 5-year grant is expected to reduce the lake's carp population, stabilize shoreline and improve riparian habitat, improve littoral habitat for game fish, and overall reduce invasive species. Volunteers from the Nokomis East Neighborhood Association and the Friends of Lake Nokomis will help sustain the enhanced habitat.

## Permanent Protection:

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

## Accomplishment Timeline

Activity	Approximate Date Completed
Remove carp from Lake Nokomis via commercial fishermen (2014 - 2016)	2016
Design carp barriers (2014), install carp barriers (2015), maintain carp barriers (on-going)	2019, on-going maintenance
Restore and enhance 4800 linear feet of riparian habitat (2014 - 2019)	2019
Restore and enhance three acres of littoral habitat through fish exclusion areas (2014 - 2019)	2019
Monitor and evaluate results annually through fish and plant surveys	2019

## Outcomes

### Programs in metropolitan urbanizing region:

- Improved aquatic habitat indicators *Increased quality and quantity of native aquatic plants of the aquatic habitat that supports game fish will be assessed during annual site visits.*

# Budget Spreadsheet

**Total Amount of Request: \$604,000**

## Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Personnel	\$0	\$135,600		\$135,600
Contracts	\$604,000	\$46,000	MPRB General Operating	\$650,000
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	\$0	\$0		\$0
Other Equipment/Tools	\$0	\$0		\$0
Supplies/Materials	\$0	\$0		\$0
DNR IDP	\$0	\$0		\$0
Total	\$604,000	\$181,600	-	\$785,600

## Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Leverage	Leverage Source	Total
Water Quality Supervisor	0.04	5.00	\$0	\$20,000	MPRB General Operating	\$20,000
Landscape Architect/Project Manager	0.08	5.00	\$0	\$60,000	MPRB General Operating	\$60,000
Youth Crew Supervisor	0.05	5.00	\$0	\$8,800	MPRB General Operating & Teen Teamworks	\$8,800
Youth Worker(s)	0.50	5.00	\$0	\$46,800	MPRB General Operating & Teen Teamworks	\$46,800
Total	0.67	20.00	\$0	\$135,600	-	\$135,600

# 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	200	200
Total	0	0	0	200	200

**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	\$604,000	\$604,000
Total	\$0	\$0	\$0	\$604,000	\$604,000

**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	200	0	0	0	0	200
Total	200	0	0	0	0	200

**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	\$604,000	\$0	\$0	\$0	\$0	\$604,000
Total	\$604,000	\$0	\$0	\$0	\$0	\$604,000

**Table 5. Target Lake/Stream/River Miles**

1 miles

# Parcel List

## Section 1 - Restore / Enhance Parcel List

Hennepin

<b>Name</b>	<b>TRDS</b>	<b>Acres</b>	<b>Est Cost</b>	<b>Existing Protection?</b>
Nokomis Lake	02824213	192	\$785,600	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.

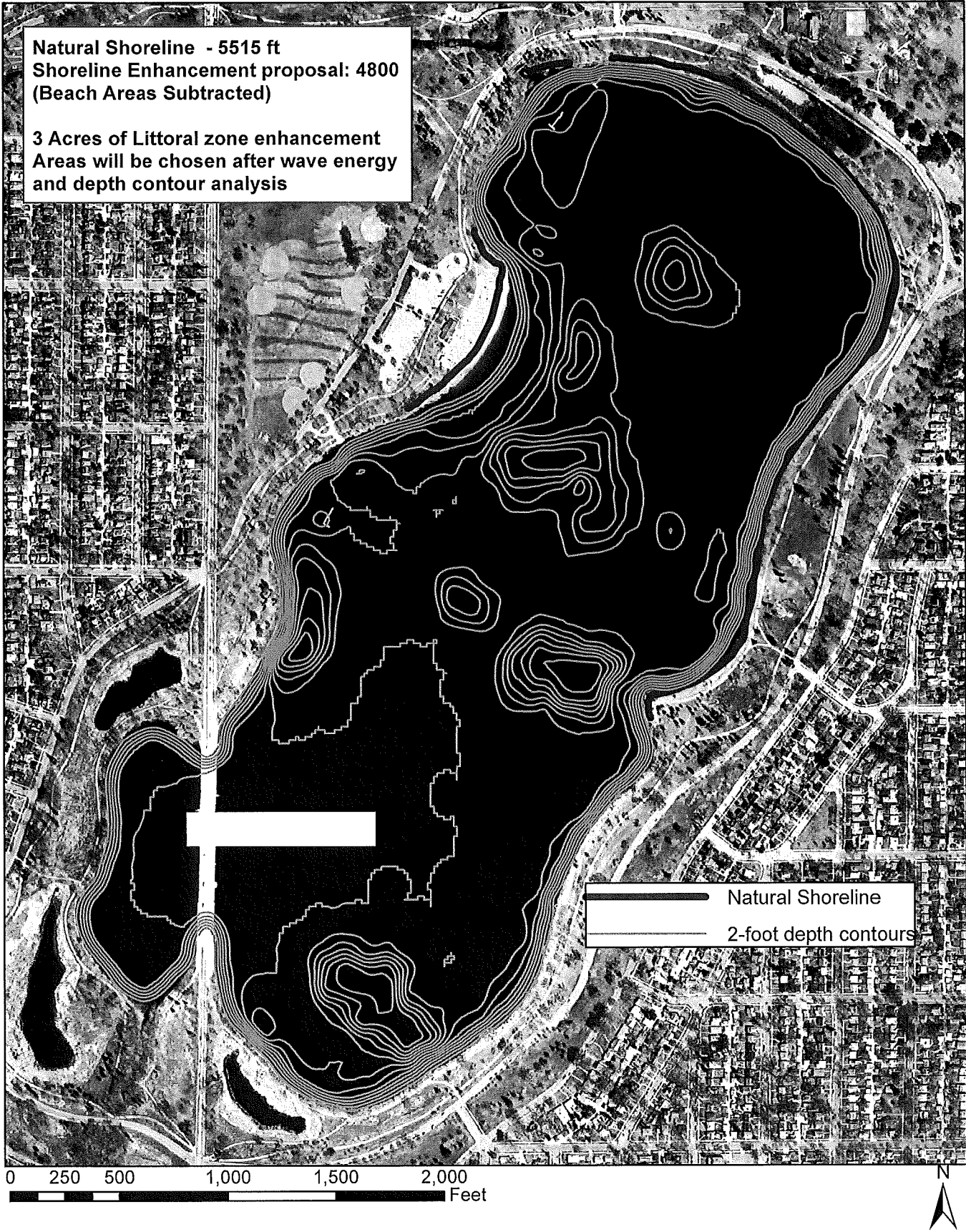
## Section 3 - Other Parcel Activity

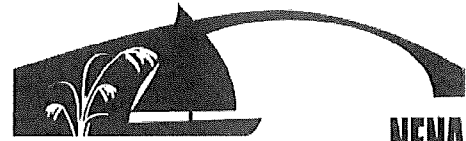
No parcels with an other activity type.



# Lake Nokomis

## Shoreline and Littoral Zone Enhancement





Nokomis East Neighborhood Association

3000 East 50th Street, Minneapolis MN 55417  
phone: 612-724-5652 fax: 612-724-2770  
nena@nokomiseast.org www.nokomiseast.org

June 12, 2013

Lessard Sams Outdoor Heritage Council  
95 State Office Building  
St Paul MN 55155

Re: Minneapolis Park and Recreation Board Application

Nokomis East Neighborhood Association (NENA) is a nonprofit organization that invests in neighborhood improvement, encourages participation in civic affairs, builds community and advocates for the interests of the neighborhood. We represent a growingly diverse population of 15,000, and base our programs on their priorities.

Water quality and environment are high priorities for Nokomis East residents, and NENA has long supported projects to improve Lake Nokomis. We strongly support the Minneapolis Park and Recreation Board in its efforts to improve shoreline and in-lake habitat of Nokomis. The proposal to reduce the carp population, implement aquatic plant propagation areas within the lake's littoral zone, and enhance the shoreline with grading and vegetation will greatly benefit this valuable natural resource.

Please feel free to contact me with any questions, at [rulrich@nokomiseast.org](mailto:rulrich@nokomiseast.org) or 612-724-5652.

Sincerely,

A handwritten signature in black ink, appearing to read "Rita Ulrich".

Rita Ulrich  
Executive Director



June 10, 2013

To Whom it may Concern,

The Friends of Lake Nokomis wholeheartedly supports action taken by the Minneapolis Park and Recreation Board to improve habitat surrounding and within Lake Nokomis. The most recent four part project to reduce the non-native carp population and implement native plant propagation within the lake's littoral zone as well as enhancing the shoreline with grading and vegetation is an excellent example of habitat improvement and we fully support it.

Thank you,

A handwritten signature in black ink, appearing to read "Steffanie Musich". The signature is fluid and cursive, with a large initial "S" and "M".

Steffanie Musich  
President, Friends of Lake Nokomis

5665 Woodlawn Blvd., Minneapolis, MN 55417  
[www.friendsoflakenokomis.org](http://www.friendsoflakenokomis.org)

We envision a harmonious coexistence of the urban community and the natural environment created around the lake.



June 13, 2013

Minneapolis Park and Recreation Board  
Attn: Mary Lynn Pulscher, Environmental Education Coordinator  
2117 West River Road,  
Minneapolis, MN 55411

Dear MaryLynn,

The Minnehaha Creek Watershed District (MCWD) is committed to a leadership role in protecting, improving, and managing the surface waters and affiliated groundwater resources within its jurisdiction.

The District understands that the Minneapolis Park and Recreation Board (MPRB) is proposing an improvement plan for Lake Nokomis' habitat that includes carp management, aquatic native plant propagation and shoreline restoration. Combined, these management activities are aimed at reducing turbidity and in lake nutrient concentrations.

These efforts will complement previous projects the Minnehaha Creek Watershed District and the Minneapolis Park and Recreation Board have historically completed in the area. As such, MCWD would like to offer this letter supporting the MPRB's pursuit of grant funding.

Sincerely,

James Wisker  
Director of Planning, Projects and Land Conservation  
Minnehaha Creek Watershed District

*The Minnehaha Creek Watershed District is committed to a leadership role in protecting, improving and managing the surface waters and affiliated groundwater resources within the District, including their relationships to the ecosystems of which they are an integral part. We achieve our mission through regulation, capital projects, education, cooperative endeavors, and other programs based on sound science, innovative thinking, an informed and engaged constituency, and the cost effective use of public funds.*