Water Quality Goals for the Cedar-Isles Master Plan

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Water quality concerns surfaced as a top priority for the Cedar Lake – Lake of the Isles Master Plan Community Advisory Committee (CAC) during Phase I of master plan development. In response to this top priority, a water quality subcommittee, comprised of over half of the CAC members, was formed to better understand the current water quality conditions and trends in both lakes and outline metric-based water quality goals and objectives at the park master plan scale as well as lake management and watershed planning scales.

Based on presentations by the water quality consultants of the MPRB and discussions during the water quality subcommittee meetings, subcommittee members recommend water quality goals and strategies at three different levels: 1) lake management, 2) park master plan and 3) watershed. First, the subcommittee urges renewal of the rigorous in lake water quality goals established during the Clean Water Partnership by MPRB, Minnehaha Creek Watershed District, and Cities of Minneapolis and St. Louis Park (1989-2001) and implementation of water quality strategies that account for current water quality trends and mitigate the effects of climate change. The subcommittee also recommends park-specific water quality goals to minimize the impacts of paved surfaces, erosion, turf and other human- interventions within the parkland on lake health and demonstrate to the public ecologically sensitive practices that protect lake health. The size, imperviousness and land use practices in the watershed of each lake play an oversized role on water quality and calls for watershed goals and strategies to reduce stormwater volumes and pollutant loading from the land areas draining to each lake.

Finally, the subcommittee urges the MPRB to take on a stronger leadership role that brings together all stakeholders including relevant local, regional and state agencies to collaborate on coordinated actions to achieve watershed-wide mitigation of polluted stormwater runoff. As a nationally recognized municipal park system, the MPRB is strongly situated to lead this partnership. Such heightened leadership by MPRB would do three things: 1) increase the impact of its own efforts – and everyone's efforts – by addressing polluted stormwater runoff closer to its source; 2) materially increase the MPRB'S public reputation for good work by taking this necessary and effective step; and 3) significantly increase the case for funding of such partnership efforts by reason of the greater efficiency and impact of coordinated watershed actions.

Lake Management Plan-Level Goals

Goal: Manage Lake of the Isles as an ecologically healthy, shallow lake

- **maintain phosphorus levels below 40 micrograms per Liter (ug/L)**

- **establish and maintain diverse native and adapted, non-invasive aquatic plants**
- **establish and maintain aquatic food web**
- **prevent harmful blue-green algae blooms**

Objective: develop lake management plan for Lake of the Isles to assess lake health and the drivers of water quality and manage in-lake nutrients, littoral zone, and shoreline.

Goal: Manage Cedar Lake as an ecologically healthy, deep lake

- **phosphorus levels should be below 25 micrograms per liter (ug/L)**
- **establish and maintain diverse native and adapted, non-invasive aquatic plants**
- **establish and maintain an aquatic food web**
- **prevent harmful blue-green algae blooms**

Objective: develop lake management plan for Cedar Lake to assess lake health and the drivers of water quality and manage in-lake nutrients, littoral zone, and shoreline.

Park Master Plan Lake Goals

Goal: Address stormwater runoff from all hard surfaces on parkland

- Treat stormwater runoff from paved surfaces on parkland including parkways and parking lots before it runs into the lake
- Limit paved surfaces and, where appropriate, convert it to pervious
- Perform enhanced sweeping of all paved surfaces on park property
- Restore soil health, including restoring compacted soil that currently provides limited infiltration
- Eliminate exposed soil on park land except established beaches and turtle nesting areas

Goal: Reduce chloride, trash, sediment and other pollutants from entering the lakes

- Reduce chloride (salt) use through continuing to condense maintained paths within the winter networks
- Minimize to the extent practical, use of chloride-based de-icing materials on hard surfaces within the park
- Provide education to staff and the public around the impacts of chloride and training on the best practices and timing for deicing application
- Perform enhanced sweeping of all paved surfaces on park property to remove trash, leaves, sediment and other pollutants

Goal: Maintain and stabilize shoreline with native vegetation in all areas except for formal access points and identified viewsheds

- Establish a naturalized lake buffer with a minimum height of one feet in all areas where water and land access is not needed. (above shoreline)
- Naturalize the littoral fringe with emergent vegetation in all areas where lake access is not needed (below shore)
- Reduce sedimentation into the lake from adjacent erosion and runoff by ensuring park soils and slopes remain stabilized and vegetated
- Formalize the location of water access points and ensure they are clearly identified

Goal: Maximize and restore habitat (terrestrial and aquatic) to improve health of the lake and have spaces for wildlife

- Restore and improve natural areas that have no interaction with park visitors (ie islands at LOI) to higher functioning plant communities for improved wildlife habitat
- Restore and improve natural areas that interact with park visitors (ie NE forest at Cedar Lake) to higher functioning plant communities
- Consider fisheries sampling to routinely determine the Fish-based Index of Biological Integrity (F-IBI)
- Determine target wildlife species for each lake and develop biological monitoring program
- Reestablish native, non-invasive and adapted rooted aquatic vegetation communities
- Control invasive aquatic plant species including watermilfoil and curlyleaf pondweed to improve water quality and maintain recreational access

Goal: Continue to meet state aquatic recreation standards at Cedar Lake and Lake of the Isles

- Reduce water quality impacts from pets, geese and anthropogenic sources

Watershed Goals

- **Goal: Utilize the water quality focused Cedar-Isles Master Plan with specific measurable goals, objectives and outcomes as an MPRB case study on how to track and evaluate implementation of park master plan**

- **Goal: Formalize a committee with regional community and agency representation to continue monitoring and developing rapid solutions for water quality and quantity in the face of a changing climate**
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- **Goal: Reinvigorate the Clean Water Partnership and renew efforts by partners to meet the CWP goals and assist the MPRB to achieve the lake water quality goals defined in this master plan**
    - Establish new regulatory controls aimed at eliminating the introduction of pollutants into water bodies
    - Monitor and evaluate existing watershed infrastructure to ensure it's still working and has the capacity to convey runoff safely under a changing climate
    - Reduce all pollutants (chloride, phosphorous, trash, and sediment) from entering each lake
    - Conduct watershed water quality and quantity modeling study to determine priority areas for reducing stormwater volumes and pollutant loading and identify new opportunities and locations to implement stormwater management strategies

- **Goal: Achieve broad community knowledge and understanding about the health of each lake, the factors impacting lake health and ways they can help protect the lakes**

Additional Cedar-Isles Water Quality Subcommittee Recommendations

Approved by subcommittee at Water Quality Meeting, July 21, 2022

Design Changes to Preferred Park Concept

- Add BMP treatment adjacent to Lake of the Isles dog park in EOR-recommended location
- Extend littoral edge areas in locations where littoral edge is not shown, pending review of feasibility
- Incorporate the triangle of green space west of France Ave (near Cedar Meadows Wetland) as an additional opportunity for water quality treatment that has a stacked function of wildlife habitat, pending review of feasibility

Recommendations to add into narrative of master plan document

- Consistently address invasive species for existing and new landscape features
- Develop and implement invasive species management strategy
- Funding requests will include sufficient maintenance
- Water quality public education programming
    - Aligned/consistent with other plans (Ex: Ecological System Plan, Parks for All)
        - Embed strategies from other plans to connect the dots/reinforce work at Cedar-Isles
        - Prioritize those strategies be implemented sooner