Lake Nokomis Shoreline Enhancement Project

Community Meeting 2

February 13, 2018
Agenda

- Current Problems
- Project Goals
- Project Status
- Existing Conditions
- Community Input
- Draft Schematic Design
- Long-term Care
- Discussion
Current Problems
Current Problems – Addressed by this Project

- Upland and shoreline **buffer habitat quantity and quality is limited** due to extensive turf and invasive species
- **Shoreline erosion** occurring in locations due to shading, wave action, trampling, and shallow-rooted vegetation
- **Aquatic habitat quantity and quality limited** due to little aquatic vegetation and poor water clarity
- **Sediment and algae** further suppress plant growth by preventing light penetration
Current Problems – *Not* Addressed by this Project

Lake Nokomis Groundwater and Surface Water Issues

- Comprised of Joint Interagency Technical Team
- The MPRB and City of Minneapolis are not the lead but are part of the multiple partner agencies involved
- Website:
- Email Contact:
  [nokomisgroundwater@minneapolismn.gov](mailto:nokomisgroundwater@minneapolismn.gov)
Project Goals
Project Goals...revolve around the “Land-Water Interface”

Critically important for...

- Water quality
- Plant & animal habitat
- Human enjoyment
Project Goals

Goals of the 2015 Master Plan:

1) Increase the amount of naturalized landscape in the park and around water bodies to:
   • Stabilize shorelines
   • Improve wildlife habitat for birds, pollinators, and fish

2) Naturalized areas will be managed and planted with select native species appropriate for the location and conditions of the specific site
   • Maintain appearance and height to retain views of the lake
   • Promote a safe and attractive park environment

3) Transition from 10% to 50% restored, naturalized landscape
Project Goals – Master Plan (2015)
Project Goals

Goals of the Grant:

1) Enhance 4,800 linear feet of shoreline by:
   • Re-grading banks to stabilize erosion
   • Removing invasive plants in the shoreline buffer
   • Installing appropriate native emergent and shoreline plants

2) Enhancements will improve habitat for fish, birds, reptiles, amphibians and aquatic invertebrates

3) Re-establish aquatic and shoreline vegetation, as this is critical to overall lake clarity
Buffer Plantings
Buffer, Shoreline & Emergent Plantings
Loring Pond
Durable Lake Access
Project Status
## Project Status

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**Tonight**

**Construction begins**
Existing Conditions
Existing Conditions – Primary Issues

- Upland areas dominated by turf with woody vegetation along much of shoreline
- Majority of shoreline stable, but exceptions exist – often (but not always) associated with access
- No littoral emergent vegetation
- Water levels fluctuate, and have been high in recent years
Existing Conditions – Other Issues

- Concentrated runoff
- Invasive vegetation
- Erosion near stormwater infrastructure
- Wet depressions in turf
- Historical WPA walls
Lake Level History & Trends

Source: MPRB
Lake Level History & Trends

Ordinary High Water Level (OHWL) is 815.4 ft

Source: MnDNR Lakefinder
All about 8” vertical edges, from turf to sand
Area 07

• About 8” vertical edge, from turf to sand
• Nearby infrastructure (coordinate w/ City)
Area 08

- Some active erosion on left
- Gravel providing some stability
Area 14

- Active erosion
Area 16

- Unstable toe of bank, due to wave erosion
- Nearby infrastructure (coordinate w/ City)
Area 17

- About 8” vertical edge, from turf to sand
Area 18

- Unstable toe of bank, due to wave erosion
- Potential WPA walls may limit interventions here
South of Area 18

• More stable toe of bank, protected from wave energy
Existing Lakeshore Access
Community Input
Input from Community Meeting #1 (Nov 30, 2017)

• Discussed issues and heard preferences – not all unanimous
• Clarified this project cannot address all issues at Lake Nokomis
• Followed up with on-line survey (early 2018)
Q10 When visiting Lake Nokomis where do you typically spend your time? (Select all that apply)

Walking trails
Bicycle trails
Beaches/Swimming
Fishing
On-water recreation...
Other (please specify)

Answered: 157  Skipped: 14
Q11 How important do you think shoreline erosion, invasive plants and water quality are to Lake Nokomis?

Answered: 157  Skipped: 14
Public Survey Results

Q2 Above are different design aesthetics related to how naturalized buffers may look. Please select the options you prefer.

- Random Plantings (A)
- Formal Plantings (B)
- Shorter Plantings (C)
- Taller Plantings (D)
- None

Answered: 168  Skipped: 3
Draft Schematic Design
Draft Schematic Design - Components

• Buffer and emergent plantings (following MPRB herbicide policy)
• Shoreline stabilization
• Lake access
Draft Schematic Design – Restoration Zones

**Upland Buffer**
- from within 2ft of trail to wetland delineation line
- mostly short mesic prairie and areas of wet prairie (depressions in turf)

**Shoreline Buffer**
- from wetland delineation line to water’s edge (at ~OHWL)
- mostly wet prairie/wet meadow vegetation
- shoreline stabilization (where warranted) & thinning of woody veg.

**Emergent Wetland**
- from water’s edge to depth of approximately 2ft
- diversity of shallow emergent species near shoreline
- transitioning to only hardstem bulrush out to 2ft depth
Upland Buffer

- ~2-foot mowed turf edge along paved trail
- Temporary wire mesh fence to protect plantings, ~2 feet from paved trail
Upland Buffer & Shoreline Buffer

- Diverse native shorelines (including many pollinator species)
- Mostly shorter species, with areas of taller plants
Shoreline Stabilization

• Riprap toe protection in only 2-3 locations
Shoreline Stabilization

• Most areas minor grading, seed & ECB
Emergent & Shoreline Plantings

• Some upland/shoreline plantings remain from 2005...
  ...but all emergents lost
Emergent Plantings

- Emergent wetland restoration strategies
  - Adequate wave protection (temporary silt fence backed with mesh on T-posts)
  - Protect from herbivory (bury silt fence bottom and wrap to shoreline)
  - Adequate planting density (2-ft centers)
  - Phased approach
  - Appropriate emergent and shoreline species
  - Reserve fund for adaptive management
Emergent Plantings

- Hardstem bulrush
- River bulrush
- Lake sedge
- Giant bur-reed
- Common three-square
Shoreline Access

• Priority of park users
• Not all shoreline access locations are alike
• Access locations often associated with localized shoreline erosion
• This project will retain most existing lake access points, and re-design for improved durability
• Of the 18 erosion areas within project area, we propose:
  o 11 will be stabilized and revegetated
  o 7 will be stabilized and still provide lake access
Schematic Design – Typical Plans and Sections

• **Phase 1** (current project)
  - Concept 1 – simple, basic, inexpensive

• **Potential Future Phases**
  - Concept 2 – increased formality
  - Concept 3 – illustrates riprap and sitting area
  - Concept 4 – illustrates limestone blocks in lake and sitting area
Phase 1
Phase 1
Potential Future Phases
Potential Future Phases

Planing Widths Vary Based on Existing Conditions - See Schematic Design Plan

SHORELINE ACCESS - CONCEPT 2 TYPICAL SECTION B-B
Lake Minnetonka Shoreline Enhancement Project
Potential Future Phases
Potential Future Phases
Potential Future Phases
Potential Future Phases
Long-term Care
Long-term Care

Will be led by MPRB environmental stewardship staff.

- Focus will be to continue to remove invasive tree and herbaceous species from the shoreline
- Monitor and repair shoreline restoration areas as needed
- MPRB may contract with Conservation Corps Minnesota
- MPRB will utilize its youth employment program, Teen Teamworks, to help with invasive removals
- Water Resources will also conduct aquatic plant surveys
- Assistance from volunteer organizations to help sustain the enhanced habitat
Discussion Questions

• How do people feel about our overall approach?
• Where would you prefer taller plantings?
• Are the proposed lake access points appropriate?
• Do you have special access wishes in particular areas?
• Do you have any recommendations regarding the design of future phase accesses?
Thank you!