CHAPTER 6
RECOMMENDATIONS AND NEXT STEPS

Goals and Recommendations
Place-based Concerns
Next Steps
The Ecological System Plan is intended as a call to action. While there is much that Minneapolis Park and Recreation Board can and will do to introduce more ecologically sensitive maintenance, operations, policy, planning, and construction, the need for increased citywide awareness of environmental impacts stemming from individual choices and behaviors is also pronounced. In essence, this plan is MPRB’s renewed commitment to partner in and across the community to live its mission and vision even more fully with regard to environmental responsibility. Through increased transparency about what is changing on the park and system level to address environmental concerns, MPRB hopes to spur community-wide discussion, mobilization, and activity in a shared spirit.

**RECOMMENDATIONS**

Recommendations tied to specific goals and problems to be addressed that were shared in each of the previous chapters are shown here in one complete table:

### A. Problems to address to Prevent Degradation of Water Quality

<table>
<thead>
<tr>
<th>Polluted Stormwater Runoff into Lakes and Streams</th>
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<td>— Rain gardens, stormwater ponds, naturalized shorelines, permeable pavers and other green infrastructure, grit chambers, basin and pond creation</td>
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<td>— Chain of Lakes Clean Water Partnership, Blue Water Partnership</td>
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<td>— Stormwater Pollution Prevention Plan for Facilities</td>
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<tr>
<td>— Street sweeping (City manages streets and MPRB manages parking lots, parkways, and paths)</td>
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<td>— Limited grey water incorporation into new design strategies</td>
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<td>2. For stormwater runoff from parks: increase infiltration/disconnected surfaces and develop budget for green infrastructure maintenance</td>
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<td>3. Stormwater runoff from MS4 (City, others): partner with MS4 Watershed districts</td>
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<td>4. Improve Stormwater Pollution Prevention Plan to include more comprehensive record keeping, exploration of stormwater capture/control/treatment, surface pollutant reduction and expand SWPPP’s to all park properties</td>
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<td>5. Identify places to disconnect hard surfaces, explore green roofs, site underground storage devices and grit chambers/filter devices, and install grey water infrastructure</td>
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<td>— Canine clean up on Earth Day</td>
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<td>— Winter waste education</td>
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<td>— Bacteria survey for water bodies</td>
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<td>— Tall grasses at shorelines</td>
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<td>— Education on waterfowl feeding</td>
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<td>— Swales and other green infrastructure</td>
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<td>— Goose management plan and goose removal per DNR permits</td>
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<td>— Shoreline planning/maintenance</td>
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<td>— Lake and stormwater monitoring</td>
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<tr>
<td>— Dogs prohibited at swimming beaches</td>
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<td>— Secured porta-potties near water.</td>
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<td>1. Develop a Bacteria Mitigation Strategy, which addresses beach clean up of goose feces and hawking to reduce e.coli levels in swimming areas</td>
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<tr>
<td>2. Continue and expand public education about no feeding of waterfowl</td>
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</table>
2.3. Continue public education about dog waste collection and environmental impacts from dog waste
2.4. Conduct seasonal social media campaigns
2.5. Examine locations of trash cans relative to pathways and relocate cans where necessary
2.6. Ensure interdepartmental coordination on dog park siting, design, and signage
2.7. Secure porta-potties near catch basins

3. TRASH IN WATERBODIES

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— Continuous Deflective Separator (CDS) unit providing underground filtering stormwater ponds
— Ongoing trash removal by staff
— Stormwater education
— Volunteer pickup, promotion of the City’s adopt a catch basin program

RECOMMENDATIONS
3.1. Complete trash impact study
3.2. Further promote the City’s adopt a catch basin program
3.3. Explore potential use of additional maintenance/control devices, including SAFL Baffle and SAFL Snout

4. CHLORIDE (SALT CONCENTRATIONS IN WATER BODIES)

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— Reduced salt use and salt/sand mix
— Reduced salt on paths and parking lots
— Only maintain one path (when there are two paths) in winter, close stairs in the winter
— Employee chloride training, public education regarding personal salt use, lake and stormwater monitoring for chlorides
— Participation in TCMA Chloride Study

RECOMMENDATIONS
4.1. Draft a winter maintenance plan that determines what surfaces are treated, standards for treatment, better removal of salt excess at buildings, and tools and labor hours needed to reach the standard
4.2. Better removal of salt excess at buildings
4.3. Set maintenance and recreation staff training goals for MPCA Level II Smart Salting Certification
4.4. Schedule earlier street sweeping in spring season
4.5. Examine whether more permeable pavers and vegetative buffers might be incorporated in park improvement projects near water bodies and identify locations for these projects
4.6. Expand public education regarding salt impacts

5. EXCESS NUTRIENTS THAT FEED ALGAE

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— Rain gardens, stormwater ponds, naturalized shorelines, permeable pavers and other green infrastructure, grit chambers, basin and pond creation
— Stormwater education
— Stormwater-lake-BMP monitoring programs
— Chain of Lakes Clean Water Partnership, Blue Water Partnership, Stormwater Pollution Prevention Plan for Facilities
— Mowing practices to reduce clippings in street, street sweeping
— Integrated Pest Management
— Weekly beach bacteria monitoring program, beach closures and notifications when necessary

RECOMMENDATIONS
5.1. Work with Community Partners: MWMO, MCWD, Bassett, Shingle, City of MSP Public Works, Hennepin County, MPCA, MDH, ACE, Neighboring Cities for stormwater runoff from parks; increase infiltration/disconnected surfaces
5.2. Stormwater runoff from MS4 (City, others): partner with MS4 and Watershed districts
5.3. Improve Stormwater Pollution Prevention Plan to address stormwater capture/control/treatment/monitoring, surface pollutant reduction
5.4. Identify areas to disconnect hard surfaces
5.5. Create detailed catalog of stormwater management practices, collect data on locations of stormwater facilities
5.6. Pursue additional street and path sweeping (explore acquisition of additional equipment to vacuum hard surfaces)
5.7. Develop erosion control plan with strategies to correct and maintain problem areas
6. EMERGING CONTAMINANTS PHA’S (COAL TAR AND ASPHALT SEALANTS)

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Partnerships with USGS, MDH, and MPCA for research and issue identification

RECOMMENDATIONS

6.1. Evaluate MPRB standards for pavement
6.2. Evaluate asphalt, remove when it is eroding
6.3. Evaluate current BMPs regarding changing products and sources for paving and sealing
6.4. Explore green pavement use
6.5. Continue partnerships with local and state agencies to address emerging contaminants

7. SEDIMENT DEPOSITION

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Water testing
— Contour restoration
— Delta removal
— Street sweeping
— Partnership with Minneapolis Public Works
— Tree preservation/maintenance/planting to intercept and slow stormwater
— Use of erosion logs as needed

RECOMMENDATIONS

7.1. Additional street and path sweeping (acquisition of additional equipment to vacuum hard surfaces with agility to clear paths)
7.2. Additional sediment level monitoring
7.3. BMP maintenance
7.4. Sediment fan removal
7.5. Work with the City of Minneapolis on delta removal

8. ISOLATED POLLUTION INCIDENTS (SPILLS)

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Spill kits, clean up and response (small scale addressed in house/large scale contracted for clean up)
— Coordinate with State Duty Officer and Minneapolis Environmental Protection Services
— For MPRB generated incidents: education of crews/reporting/cleanup
— SWPPP (Stormwater Pollution Prevention Plan)

RECOMMENDATIONS

8.1. Expand spill kit distribution in MPRB vehicles
8.2. Expand response material storage at MPRB facilities (at least one location per service area)
8.3. Conduct internal and external education regarding spill prevention and response
8.4. Seek assistance from City/MPCA in the event of large spills
8.5. Build resiliency in the face of changing water levels

9. POINT SOURCE POLLUTION

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Minneapolis water bodies do not currently have discharge from point sources
— If this becomes an issue, the City and MPCA will address it and MPRB will be consistent with their strategies

RECOMMENDATIONS

9.1. Point source pollution identification
9.2. Work with City of Minneapolis to ensure regulation/point source control and testing
9.3. Continue work with City of Minneapolis Public Health and Environmental Services

10. HIGH TROPHIC STATE INDEX (TSI) LEVEL

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Thresholds for quality, health awareness campaign, water testing

RECOMMENDATIONS

10.1. Conduct water quality monitoring based on water transparency, chlorophyll-a, and phosphorus
10.2. Work with MCWD on E Grade
10.3. Conduct water quality goal setting sessions (internal and external to MPRB)
11. STORMWATER FACILITY MANAGEMENT: CATCH BASIN AND POND MAINTENANCE, ROOT ZONE PROTECTION

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Natural Areas Plan
- SWPPP
- Staff training regarding stormwater facility maintenance
- Asset management
- Stormwater catchment root zones

RECOMMENDATIONS
11.1. Define roles/responsibilities for MPRB, City, Watershed Districts for stormwater facility management and develop a corresponding maintenance budget, defined inspection and repair schedule (with budget)
11.2. Digitize management and stewardship agreements
11.3. Expand SWPPP’s to all park properties and provide additional staff training

B. Problems to address to Build Resiliency in the Face of Changing Water Levels

12. FLUCTUATING WATER LEVELS

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Transition of activities/land uses to reflect changing water levels

RECOMMENDATIONS
12.1. Transition according to changing water levels (resiliency planning for flood or drought)
12.2. Review outfalls and walls after big storm events to determine capacity and endurance

13. FLOODING (SEASONAL, TEMPORARY, AND LONG TERM)

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Planning/preparation for floodwater
- Modeling for flood scenarios
- Temporary path closures
- Creation and use of temporary signage for combined use of trails
- Park redesign for flooding propensities, communication with local water management agencies and Public Works departments, use of up to date modeling (Atlas 14)

RECOMMENDATIONS
13.1. Create planting plans with sensitivity to flooding—species selection based on resistance to water
13.2. Additional creek stabilization
13.3. Park design adapted to flood conditions and flood diversion
13.4. Reinforce shorelines to withstand major flood events
13.5. Detour identification for flood prone areas
13.6. Improve communication both internally and with local and regional partners about known flood areas

14. LAKE SHORE AND CREEK BANK EROSION

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Rip rap, bioengineered shorelines and creek banks
- Collaboration with BCWMC and MCWD and Shingle Creek

RECOMMENDATIONS
14.1. Additional bioengineering, rip rap, wall replacement to stabilize banks and shorelines
14.2. Plan projects for larger storms (e.g., 2014)

15. GROUNDWATER DEWATERING FOR CONSTRUCTION WORK

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Partnerships with DNR, City of Minneapolis, and City of St Louis Park
- Signage of critical areas

RECOMMENDATIONS
15.1. Work with Minneapolis and SLP on winter dewatering policies
16. GROUNDWATER MANAGEMENT/PUMPING

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— DNR permits for lake augmentation and for golf course irrigation and snow making

RECOMMENDATIONS

16.1. Develop Groundwater Management Policy

17. LAKE AUGMENTATION

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Permits with MN DNR, monitoring by MPRB staff

RECOMMENDATIONS

17.1. Park and lakeshore design for fluctuating water levels

C. Problems to address to Protect Aquatic Habitat

18. AQUATIC INVASIVE SPECIES

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Aquatic invasive species (AIS) education and inspection program at Bde Maka Ska, Harriet, Nokomis boat launches
— EWM management, carp management in lakes
— Rapid response to new emerging invasive species identified by MDA and MnDNR
— Key staff training for invasive species identification and control strategies
— Early detection plan for key AIS. Partnerships with MCWD and Hennepin County and DNR

RECOMMENDATIONS

18.1. Develop an invasive Species Management Plan per Zebra Mussel Action Plan and Carp Management Study
18.2. Continue prevention and early detection programs

19. FISH

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— DNR permits for aquatic plant management

RECOMMENDATIONS

19.1. Develop an Aquatic Plant Management Plan for key lakes

20. LAKE AERATION

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Summer aeration (2 lakes) and winter aeration is done to counteract smells and to allow for a more diverse fish population.

RECOMMENDATIONS

20.1. Maintain and replace systems as needed / at the end of the system’s life, evaluate if system is still needed

21. AQUATIC PLANT MANAGEMENT

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— DNR permits for aquatic plant management, milfoil removal and composting

RECOMMENDATIONS

21.1. Develop an Aquatic Plant Management Plan for key lakes
21.2. Request additional budget for more frequent surveys

22. MOSQUITO CONTROL

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Agreement with MMCD not to spray insecticides in MPRB lands. BTI is a biological control for larvae.

RECOMMENDATIONS

22.1. Plan structural BMP’s so they are not breeding grounds for mosquitoes per MMCD recommendations
23. WATERFOWL

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— MPRB goose management plan and goose management program approved by MN DNR

RECOMMENDATIONS
23.1. Prepare structural BMP design to reduce conflict with wildlife, maintenance plan for wildlife, and armor islands to protect heron rookeries

D. Contribute to Improving the Air Quality in the City

24. PARTICULATES

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— Greater visibility/awareness of air quality thresholds, alternative energy production, reduced natural resource consumption
— Transit benefits for staff
— Anti-idling ordinance

RECOMMENDATIONS
24.1. Focus air quality policy on particulate reduction, air quality monitoring, community education to promote individual behavior changes (mode of transportation changes, fewer wood burning fires, mowing reduction)
24.2. Set industry emissions reduction goals
24.3. Pursue transportation modal split, remote work policies
24.4. Ensure MPRB chipping facility meets air quality standards

25. CARBON DIOXIDE (CO2)

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— Tree canopy preservation
— Prairie restoration project
— Green fleet goals
— Increased solar energy at eight sites

RECOMMENDATIONS
25.1. Publish annual tree canopy assessment and planting plans
25.2. Develop sustainable energy generation/use strategies for park facilities
25.3. Follow policy to guide emissions reductions (including City of Minneapolis’ no idling policy) for both work and personal vehicles
25.4. Use biochar under athletic fields and in soil modification projects
25.5. Develop small equipment inventory and begin tracking use, hours, lifespan, estimated emissions then reduce out of life expectancy to 0% by 2019
25.6. Explore improved IT connections and programs to expand use of web-based meetings
25.7. Expanded creation/ protección of carbon sinks, reduction in use of fossil fuels and use of sustainable energy alternatives
25.8. Create Green Fleet procedures consistent with City of Minneapolis green fleet strategy (including purchasing more alternative fuel, flex fuel, and other more efficient vehicles)
25.9. Conduct study of MPRB trip generation to determine how to best condense and minimize travel
25.10. Explore re-siting some MPRB maintenance and forestry facilities to achieve more efficient operations and site travel
25.11. Use tracking data and asset management information to create efficient mowing, plowing, and work routes

26. VOCS ABOVE BENCHMARK

CURRENT MPRB MITIGATION PRACTICES AND BMPS
— No smoking policy
— Low VOC trees

RECOMMENDATIONS
26.1. Particulate regulation, fines, health awareness campaigns
26.2. Use low VOC, no-VOC materials in buildings (paints, glues, cleaning supplies, building materials) and in maintenance activities, where possible.

27. CARBON MONOXIDE (CO)

RECOMMENDATIONS
27.1. Encourage trip reduction or modal shift to reduce use of fossil fuels
27.2. Explore hybrid/electric vehicles in lieu of gas powered
27.3. Build awareness of charcoal cooking risks
28. PRAIRIE BURNS

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Prohibited burning during high MPCA air quality alerts
- Public notification (hospitals, care facilities, schools, homeowners, etc.) of planned burns

**RECOMMENDATIONS**
28.1. Continue planned prairie burn notification process
28.2. Continue to ensure burn days do not coincide with air quality alert days (reschedule burns if necessary)

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**E. Contribute to Climate Change Mitigation**

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29. URBAN HEAT ISLAND EFFECT

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Coordination with City of Minneapolis Air Quality and Public Health staff
- Maintenance of park and boulevard trees
- Majority of park space is pervious, piloting pervious pavers in a few parking areas
- Modal split
- Remote work
- Preservation of tree canopy and natural areas
- Staff attendance at Minnesota Climate Adaptation Partnership Annual Conference

**RECOMMENDATIONS**
29.1. Continue working with city departments to monitor heat island effect
29.2. Increase use of pervious pavers and explore areas where greener pavers may be used in lieu of asphalt/concrete
29.3. Conduct energy audit on recreation centers and other MPRB buildings to help set efficiency goals and strategies in view of the demand to add air conditioning to park buildings currently without it
29.4. Complete trip survey/study to determine current modal split, work with Metro Transit to evaluate transit access to parks and identify opportunities to increase multimodal access
29.5. Follow metro area climate studies, health awareness/health equity studies and campaigns, and climate change adaptability studies
29.6. Build resiliency into park planning, design, and programming projects

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30. NATURAL RESOURCE/ENERGY CONSUMPTION

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Tracking of building energy consumption and cost for recreation centers and maintenance facilities
- Solar energy production at six locations in park system
- Evaluation of HVAC equipment including potential for adding A/C to more recreation centers

**RECOMMENDATIONS**
30.1. Perform system wide energy audit and expand ongoing energy consumption tracking to the whole system (including golf club houses, maintenance support buildings, restrooms, and field lighting)
30.2. Seal doors, windows, plumbing and electrical penetrations against moisture and air leaks
30.3. Develop green purchasing policies, training, methods of enforcement and explore green building techniques that can be used in building rehabilitation/repair/construction
30.4. Pursue high-performance insulation (insulated headers, corners, wall intersections, green rooftops and high albedo rooftops, etc.)
30.5. Pursue alternative energy solutions including sustainable energy-solar, wind, geothermal, where possible
30.6. Explore potential to adapt current operations practices to mirror LEED guidelines for Building Operations and Maintenance and envision sustainability principles
31. TREE CANOPY FRAGMENTATION

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Planting plans (including 10% genera limit) to encourage species diversity and maintain largest possible growing trees in available growing space
- Public education to protect and expand tree canopy throughout the city, not just in the parks

RECOMMENDATIONS
31.1. Work with City of Minneapolis to draft a tree canopy preservation plan, including a private tree policy that requires homeowners to maintain existing canopy on a certain percentage of their property and a strategy for watering street trees near rented properties

F. Reduce Negative Construction-related Impacts

32. PAVED AREAS

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Piloting permeable pavers, pervious pathways
- Exploring bid procedures to include more sustainable materials
- Stormwater management mitigation strategies

RECOMMENDATIONS
32.1. Create an MPRB Green Infrastructure Plan incorporating land use balance (recreation vs. natural), sustainable park design, environmentally mindful land use planning and park management
32.2. Research and, where possible, implement more sustainable building practices, including green materials, green rooftops, high albedo rooftops, etc.
32.3. Implement more pervious surfaces and create a plan for maintaining these surfaces

33. BUILDING-RELATED IMPACTS DRAFTING GREEN DESIGN STANDARDS

CURRENT MPRB MITIGATION PRACTICES AND BMPS
- Drafting more eco-friendly construction specifications

RECOMMENDATIONS
33.1. Review construction specifications and modify, if necessary, to be more environmentally friendly
33.2. Conduct mandatory pre-construction conferences to address environmentally friendly construction requirements (including materials selection, packaging, recycling, etc.)
33.3. Install and maintain wildlife friendly erosion control devices during construction
33.4. Save and reuse site topsoil
33.5. Establish and post clean up procedures for spills to prevent illegal discharges
33.6. Dispose of non-recyclable hazardous waste at legally permitted facilities
33.7. Require weather protection for stored materials
33.8. Require a checklist for construction debris that tracks diversion rates to waste/recycling
33.9. Require that construction permits issued to other agencies include environmentally friendly construction specifications (such as erosion controls, construction materials, and management of waste)
G. Maintain and improve **Soil Health**

### 34. CONTAMINATED SOILS

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Soils testing and hazmat remediation

**RECOMMENDATIONS**
34.1. Conduct soil quality testing in parks where urban agriculture areas have been designated through the park master planning process (test for known contaminants in city, especially lead)

### 35. SOIL COMPACTION

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Currently limited to turf maintenance practices, including soil and seed mixes

**RECOMMENDATIONS**
35.1. Analyze areas most in need of decompaction and/or athletic field resting

35.2. Partner with City of Minneapolis on decompaction, examine opportunities during park redevelopment to decompact soils and use biochar

35.3. Complete slope analysis for mowing to determine best fit equipment to grade and develop a mowing plan that assigns specific equipment use to different slopes

### 36. EROSION

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Erosion control netting, fencing, barriers, and shoreline restorations with native plantings

**RECOMMENDATIONS**
36.1. Evaluate construction and erosion control specifications to address/avoid wildlife conflicts/concerns and develop wildlife friendly maintenance standards, policies, and procedures

36.2. Develop erosion control plan, including maintenance/inspection schedule and contractor oversight

36.3. Identify opportunities to adopt Minnesota Erosion Control Society best management practices

### 37. TURF MANAGEMENT

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Development of asset management software that includes mapping of mowing areas
- Natural Areas Plan, including identification of reduced mow areas
- Mowers that direct clippings in toward parks rather than toward streets
- Research project on bee lawns to protect and enhance bee friendly turf areas

**RECOMMENDATIONS**
37.1. Expand use of fescue and drought tolerant, low water grasses

37.2. Conduct internal training about causes of soil compaction, conduct soil compaction tests, and address compaction through special projects

37.3. Complete analysis of sites most suited to bee laws

37.4. Complete mandatory pre-season mowing staff training addressing slope, equipment suitability to slope, compaction, grass clipping redirection, and human-tree conflicts

37.5. Draft well defined vegetation management plan and corresponding practices for each land cover that contain standards for reduced mowing areas including mowing locations, goals, frequency, and equipment suitability

37.6. Pursue staff training—Turf Management Certificate for Water

### 38. GOLF COURSES

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Transitioning mowing equipment to hybrid machines
- Transitioning golf carts to Electronic Fuel Injection, low emission carts
- Installing programmable, higher efficiency irrigation controls
- 2013 MPRB Golf Course Master Plan Study (including identification/cost of needed improvements)
- Consistency with Integrated Pest Management policy and participation in Audubon’s Cooperative Sanctuary program
RECOMMENDATIONS

38.1. Explore public-private partnerships to complete eco-friendly rehab and operation of golf course club houses (including adding food service)
38.2. Continue expanding use of programmable, higher efficiency irrigation controls
38.3. Identify turf areas that could be restored to natural areas and coordinate restoration work with local partners
38.4. Monitor groundwater and wetland conditions and assess whether seepage is a potential risk
38.5. Identify opportunities to incorporate USGA Golf Course greening practices

39. GARDEN MAINTENANCE AND SUSTAINABILITY

CURRENT MPRB MITIGATION PRACTICES AND BMPS

- Organic gardening
- Perennial pollinator gardens
- Mulch used from Lakewood Cemetery
- Consistency with USDA requirements on noxious weeds

RECOMMENDATIONS

39.1. Explore use of perennials in lieu of annuals
39.2. Provide engagement and education opportunities for underrepresented community groups
39.3. Monitor, track, and treat noxious weeds (develop budget request for treatment, replanting, and ongoing plant survey)
39.4. Work with citizen science programs as possible

I. Improve Habitat Quality in Parks

40. INVASIVE PLANT SPECIES MANAGEMENT

CURRENT MPRB MITIGATION PRACTICES AND BMPS

- Invasive species prioritization and control, rapid response to emerging new invasive species identified by MDA, continued identification and monitoring of invasives, and Integrated Pest Management (IPM)

RECOMMENDATIONS

40.1. Invasive species management planning, including policies and goals for invasive plant species, working with MDA, DNR, and University of Minnesota
40.2. Follow BMPs for invasive species removal including stump treatment and monitor efficacy of removal efforts

41. NATURAL AREAS MANAGEMENT

CURRENT MPRB MITIGATION PRACTICES AND BMPS

- Invasive species control, prescribed burns, planting, seeding, restoration projects, Natural Areas Management Plan

RECOMMENDATIONS

41.1. Increase technology capability in field to include definitions, maps, methods and standards for how natural areas are kept. Map all natural surface trails in the park system and assess which meet recreational user needs and which should be closed to prevent environmental degradation.
41.2. Increase interdepartmental coordination on plantings/mowing/sightline/safety, and general landscape management planning
41.3. Reassess equipment suitability and compare mowing requirements to plant height goals to protect bird, bee, and butterfly habitat. Then prepare prescriptive mowing plans that address mow height, frequency, timing, and landscape slope
41.4. Prepare a park resiliency plan including strategies to address changing climate conditions, the effect on natural spaces and spaces that may transition to a different land cover, and how to continue meeting the needs of recreational users
41.5. Make budget recommendation for staff ecologist to address natural areas planning
41.6. Continue to work with local partners to restore and manage natural areas, including prairies and savannas
J. Protect and Maintain Urban Forest

42. URBAN FOREST RESILIENCE

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Planting plans to encourage species diversity and resilience to disease and infestation
— 10% general limit per neighborhood
— Urban forest research agreement with University of Minnesota

RECOMMENDATIONS

42.1. Continue exploring species diversity for efficacy within Minneapolis both independently and in partnership with University of Minnesota
42.2. Invest in quality control measures (such as enterprise asset management software)
42.3. Conduct annual interdepartmental reviews of planting plans (including location and spacing of trees for consistency with other park activities and land uses) and tree replacements
42.4. Conduct community engagement regarding planting plans

43. URBAN FOREST MAINTENANCE

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Pruning program (including emergency response) and watering public trees

RECOMMENDATIONS

43.1. Explore expanded pruning program as new trees are planted and identify budget needs to meet growing maintenance requirements
43.2. Identify and implement strategies to reduce soil compaction, including aeration in heavily used areas near trees (both event-based, which could include an impact fee, and ongoing)

44. URBAN FOREST PEST MANAGEMENT

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Removal plans to protect mature trees in system while addressing pest risk
— Plan to replace public ash trees by 2022 (per Canopy Replacement Plan)
— Continue slowing spread of Dutch Elm Disease (DED) through removal process
— IPM strategies

RECOMMENDATIONS

44.1. Keep current with industry best practices
44.2. Continue pest management programs in partnership with US Forest Service, Animal Plant Health Inspection Service, Minnesota Dept. of Agriculture, MN Dept. of Natural Resources, University of Minnesota, Hennepin County, City of Minneapolis, City of St. Paul
44.3. Publish tree removal standards and natural forested areas management practices for public benefit
44.4. Develop pest management action plan (including monitoring private trees adjacent to parks and public communication strategies regarding care of private trees) and conduct public awareness campaign of plan specifics

45. HUMAN-TREE CONFLICTS

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Public conflicts: vegetation molestation ordinance (PB2-2) and monitoring for encroachment on public trees
— Internal conflicts: training video regarding avoiding tree damage

RECOMMENDATIONS

45.1. Develop a formal mowing and trimming plan which include grass buffers around tree bases
45.2. Provide mandatory annual pre-season staff trainings to ensure tree protection from mowers, weed whips, trimmers, etc. and an internal enforcement procedure
45.3. Develop a tree friendly hammock/slackline policy and post signage regarding climbing, hammocking, slack-lining

46. FORESTRY STORM AND DISASTER RESPONSE

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Forestry’s storm response plan and tree-related disaster response leadership

RECOMMENDATIONS

46.1. Continue partnership with City of Minneapolis, Office of Emergency Management, Public Works, Police and MPRB Park Police
46.2. Seek additional locations that can accommodate wood debris processing
### 47. WOOD DEBRIS

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Wood debris is sold to community-based businesses for reclaimed wood products, biofuel, or landscape mulch
- Wood chip piles are made available at multiple sites for public collection

**RECOMMENDATIONS**
47.1. Identify areas where standing deadwood might be left for habitat and fallen deadwood might be used for seating

### 48. LEAF PICK UP AND REUSE

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Rough mowing and chain drag to speed leaf decomposition, leaf collection at Lakewood Cemetery to use as compost

**RECOMMENDATIONS**
48.1. Explore public leaf collection for mulching

### K. Increase Habitat Connectivity

### 49. CONNECTED HABITAT

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- MPRB has certification from Audubon Society as an Important Birding Area and is consistent with Audubon’s Cooperative Sanctuary program at Golf Courses
- Blue bird nesting program, chimney swift towers, purple martin and woodduck houses
- Partnerships with Woodduck Society and Bluebird Recovery Program
- Partnership with U of MN Bee Lab
- Bee condos for solitary nesting bees have been installed

**RECOMMENDATIONS**
49.1. Identify potential to expand on green corridors that improve pollinator connections
49.2. Research and track plant life that will offer the best pollinator habitat throughout the growing season
49.3. Identify corridors that can help improve access to nesting sites (turtles, birds)
49.4. Identify sites with largest number of animal-roadway conflicts and implement protection strategies (working with partner agencies, such as MNDOT or Hennepin County) as necessary
49.5. Develop wildlife friendly construction and maintenance standards, policies, and procedures (including ramps, turtle tunnels, curb cuts, signed crossings, temporary fence installation, seasonal signage, bat houses, etc.)
49.6. Where possible, incorporate Minnesota Erosion Control Society best management practices
49.7. Work with local partners to continue restoration work
49.8. Armor islands to protect heron rookeries

### 50. WILDLIFE MANAGEMENT

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Turkey control at Eloise Butler by removing birdfeeders at Shelter.
- Goose management has been implemented since 1980s and Goose Management Plan is in place.
- Beaver removal as needed.
- Consistency with DNR wildlife management rules and procedures.

**RECOMMENDATIONS**
50.1. Develop educational materials about limiting/reducing human-wildlife interactions and seasonal wildlife patterns
50.2. Seek to add an ecologist position to staff to create wildlife management plans

### 51. MOSQUITO CONTROL

**CURRENT MPRB MITIGATION PRACTICES AND BMPS**
- Agreement with MMCD not to spray insecticides in MPRB lands.

**RECOMMENDATIONS**
51.1. Create public education campaign about mosquito control and biological larval control (BTI)
52. PESTS

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Integrated Pest Management (IPM), including plant selection, biological controls and good planting strategies to reduce needs for pesticides and fertilizers.

— Pest control in park buildings is contracted for as needed

RECOMMENDATIONS

52.1. Develop Pest Management Plan for facilities, including consistency with IPM
52.2. Continue pesticide and fertilizer input reduction

L. Reduce Human-Related Negative Impacts in the Parks

53. HUMAN ENCROACHMENT (UTILITIES, STRUCTURES ON LAND AND WATER)

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— MPRB currently addresses encroachments as they arise through the Real Property Administrator and Park Police are involved as necessary

— There is an ordinance utility encroachment (PB13) and an application for encroachment permits

RECOMMENDATIONS

53.1. Develop a formal encroachment policy
53.2. Create signage to better indicate park boundaries and reduce encroachment conflicts
53.3. Develop public awareness campaign regarding encroachment conflicts, environmental impacts, and permits for private use projects (such as driveways and sidewalks)

54. WASTE

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Trash-recycling-compost bins in MPRB buildings
— Trash and recycling bins in parks
— Events Go Green certification
— Dog waste education and signage

RECOMMENDATIONS

54.1. Conduct public awareness campaign and mandatory all staff trainings regarding proper waste disposal
54.2. Adopt waste policies consistent with City of Minneapolis Green to Go Ordinance and Zero Waste Plan and monitor for consistency at large events where multiple food vendors are present
54.3. In construction, implement deconstruction rather than demolition to extract high-value materials and require contractors to recycle materials where possible
54.4. Track diversion rates both in park waste and construction waste and set system wide diversion goals

55. NOISE/LIGHT POLLUTION

CURRENT MPRB MITIGATION PRACTICES AND BMPS

— Noise regulations in parks for special events
— Noise control standards for boats
— Downcast lights

RECOMMENDATIONS

55.1. Explore dark sky certified lighting to limit light spillover
55.2. Explore areas where lighting can be changed, redirected, or timed differently to limit impacts on neighborhoods as well as natural areas
To help provide a snapshot of which parks are most suited toward particular kinds of environmental protections, the following table lists each park in the Minneapolis park system along with the corresponding lenses that apply to park conditions. This table can be used as capital improvement, rehabilitation, and environmental management projects are planned to help project managers, project partners, and the community at large think about steps they can take in both planning and implementation to address these concerns.

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<th>REGIONAL PARK NAME</th>
<th>URBAN HEAT ISLAND EFFECT</th>
<th>CARBON SEQUESTRATION</th>
<th>SUSTAINABLE ENERGY GENERATION</th>
<th>AIR QUALITY ISSUES</th>
<th>HABITAT CONNECTIVITY</th>
<th>BIODIVERSITY AND HABITAT QUALITY</th>
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**Next Steps**

The most important step, after this plan’s adoption, is for each department within MPRB to spend time reviewing and identifying which recommendations they are responsible for, as well as what steps need to be followed to meet these recommendations. Further, it will be important to prioritize recommendations for accomplishment in the short (less than two years), medium (two to four years), or long (more than four years) term and to identify budget needs accordingly.

**OTHER RELATED MPRB PLANNING EFFORTS**

As MPRB continues its natural areas management planning, it will look to align management strategies with Ecological System Plan recommendations. The natural areas planning that has been completed to date has helped to inform a number of these recommendations, given the necessary overlap between this plan’s focus on what is currently done and should be done in park management to address environmental conditions in the parks and that plan’s focus on assessing current natural area conditions and prescribing steps that will help to improve them.

Service Area Master Plans are underway and soon to be completed for the entire MPRB system. As MPRB continues this effort along with master planning for regional parks, it will draw from Ecological System Plan goals and recommended practices to address environmental concerns within neighborhood and regional parks, as well as along trails and parkways.

![Service Area Map](image-url)

Figure 44. Service Area Map