

Goals, Strategies, and Recommendations Index

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.

Goals, strategies, and recommendations that were shared in each of the previous chapters are shown here in one complete table. In addition, Goal M identifies how this plan remains an accountable, living document to guide MPRB into the future.

A. WATER: PREVENT DEGRADATION OF WATER QUALITY

Improve management of park-generated stormwater runoff

- 1.1. Increase amount of stormwater infiltration, filtration, and storage, and increase disconnected hard surfaces in parks
- 1.2. Improve Stormwater Pollution Prevention Plans (SWPPPs) to include more comprehensive record keeping, exploration of stormwater capture and control, and surface pollutant reduction, and expand SWPPPs to all park properties, with appropriate staff training
- 1.3. Assess the feasibility of green roofs and grey water infrastructure during all new building projects and significant retrofits
- 1.4. Reduce impervious surface area in parks
- 1.5. Protect and expand wetland and marsh areas that filter stormwater runoff
- 1.6. Develop a Clean Sweep Plan, which explores additional street and path sweeping technology, timing and schedule, chloride management strategies, and potential of new equipment
- 1.7. Improve winter maintenance plans to consider salt use in parks, including examining which surfaces are treated, removal of excess salt around buildings, and guidance on labor practices and equipment
- 1.8. Set maintenance and recreation staff training goals to achieve MPCA Level II **Smart Salting Certification**
- 1.9. Expand public education regarding salt impacts on water bodies
- 1.10. Prioritize replacement of asphalt pavement in areas where pavement is actively eroding and drains directly into the storm sewer system

2. Contribute to management of regional stormwater in the interest of regional water quality

- 2.1. Implement regional stormwater facilities in parks, in partnership with City of Minneapolis and watershed districts, only where envisioned in park master plans.
- 2.2. Define roles and responsibilities for MPRB, City of Minneapolis, and watershed districts for management of stormwater facilities in parks, and develop corresponding maintenance practices, budget, and repair schedule
- 2.3. Create a stormwater BMP inspection, maintenance, and repair plan for MPRB staff, including a catalog of BMPs installed in parks
- 2.4. Create a fund for BMP maintenance and repair

3. Reduce the amount of trash and sediment in water bodies

- 3.1. Complete a trash impact study that identifies estimated volumes, sources, and solutions
- 3.2. Further promote the City's adopt-a-catch-basin program
- 3.3. Install additional maintenance control devices, such as SAFL Baffle and SAFL Snout, at key stormwater outfalls, in coordination with partners
- 3.4. Expand public education regarding proper waste reduction and impacts on
- 3.5. Work with City of Minneapolis and other agencies to remove sediment fans in water bodies
- 3.6. Stabilize eroding streambanks and shorelines
- 3.7. Create a fund to repair erosion in parks

Reduce water quality impacts from pets and geese

- 4.1. Develop a Bacteria Mitigation Strategy, which addresses beach clean-up of goose feces
- 4.2. Continue and expand public education about no feeding of waterfowl
- 4.3. Continue and expand public education about dog waste collection and environmental impacts from dog waste
- 4.4. Examine locations of trash cans relative to pathways and relocate or remove cans where necessary
- 4.5. Ensure interdepartmental coordination on dog park siting, design, maintenance, and signing, to ensure impacts to water bodies are minimized
- 4.6. Develop a standard BMP for bacteria reduction at dog parks
- 5. Reduce impacts of point source pollution and pollutant spills on water bodies
- 5.1. Expand spill kit distribution in MPRB vehicles

- 5.2. Expand spill response material storage to at least one location per service
- 5.3. Conduct internal and external education regarding spill prevention and
- 5.4. Work with City of Minneapolis and other agency and research partners to identify and address point source pollution impacting parks and water bodies

6. Understand and respond to water quality realities

- 6.1. Continue water quality monitoring based on water clarity, chlorophyll-a, and phosphorous, and add other testing regimes as warranted
- 6.2. Conduct water quality goal-setting sessions with internal staff and external partners
- 6.3. Prepare lake management strategies for each MPRB-managed water body
- 6.4. Continue partnerships with local and state agencies to remain aware of and address emerging contaminants

B. WATER: BUILD RESILIENCY IN THE FACE OF CHANGING WATER LEVELS

- Design, plan, and manage park facilities in light of changing water levels
- 7.1. Utilize projected future floodplain analysis and risks during planning efforts
- 7.2. Identify outfalls, walls, bridge abutments, trails, and other flood-threatened infrastructure during master planning efforts, and develop proposed solutions in light of flooding and rainfall projections
- 7.3. Create planting plans with understanding of projected water regime
- 7.4. Design lakeshores and streambanks to withstand or accommodate projected future flooding and withstand a higher level of erosive energy, using bioengineering and native plants wherever possible
- 7.5. Identify and map flood-prone recreational infrastructure, especially trails, and develop detour plans that can be implemented quickly and with clear public notification

- 8. Continue and strengthen partnerships to address management of citywide stormwater infrastructure
- 8.1. Partner with City of Minneapolis and watershed districts in the creation of park master plans, and participate in partner agency efforts, such as flood studies
- 8.2. Improve communication with partners and to public about water management, park impacts, and other effects of increased precipitation
- Continue to work with partners to understand, evaluate, and help to address, as appropriate, elevated groundwater levels

C. AIR: CONTRIBUTE TO IMPROVING LOCAL AIR QUALITY AND REDUCING URBAN HEAT ISLAND

- 10. Partner in regional heat island and air quality monitoring and studies
- 11. Focus tree planting in areas identified as having high heat island or low air quality
- 12. Reduce vehicle and equipment emissions
- 12.1. Examine fleet-wide emissions and estimate emissions generated by park employees, then set reduction goals
- 12.2. Document and communicate options for hybrid and electric vehicles for all vehicle purchases
- 12.3. Develop small equipment inventory that includes emissions information, then work to transition small equipment fleet to alternative options, such as electric or four-stroke

- 12.4. Adopt Green Fleet procedures similar to City of Minneapolis fleet procedures, including flex fuel protocols and idling standards
- 12.5. Complete service centers master plan with consideration of siting to achieve more efficient travel management
- 12.6. Develop transportation management plan and procedures for field staff that considers and optimizes travel time to and between parks and service centers, in order to reduce overall vehicle miles and emissions
- 13. Use low-VOC or no-VOC materials (paints, glues, cleaning supplies, etc.) in buildings and in maintenance activities wherever possible
- 14. Ensure maintenance of landscapes with fire does not coincide with air quality alert days
- 15. Monitor air quality at wood processing facility

D. AIR: CONTRIBUTE TO CLIMATE CHANGE MITIGATION

- 16. Reduce the agency-wide carbon footprint
- 16.1. Complete a carbon footprint analysis, including identification of areas of improvement and reduction strategies
- 16.2. Establish carbon footprint reduction targets and tasks and report at least annually on progress
- 16.3. Explore alternative energy purchasing programs, to increase percentage of MPRB energy that is generated sustainably
- 17. Advocate for and support carbon footprint reduction for park employees and visitors
- 17.1. Promote transportation mode changes for MPRB staff and park visitors, including remote work options, shared EV pool vehicles, bicycles, scooters, and transit
- 17.2. Improve information technology to allow for more effective remote meetings

- 17.3. Work with MetroTransit to evaluate and improve transit access to parks
- 17.4. Improve park access points for multi-modal users, including ensuring curb ramps are properly placed and designed
- 18. Increase building efficiency
- 18.1. Complete agency-wide energy audit and identify areas of improvement
- 18.2. Design efficiency into buildings at time of construction or major improvements
- 18.3. Perform energy efficiency improvements as part of general building and grounds maintenance, including door and window sealing, HVAC improvements, lighting improvements, enhanced insulation, and others

- 19. Explore alternative energy generation opportunities in parks
- 19.1. Explore geothermal and solar generation in areas determined suitable for those energy sources, when improving or constructing buildings or other site improvements
- 19.2. Seek grants for additional solar and/or geothermal installations

20. Sequester carbon in the park system and urban forest

- 20.1. Study the ability and potential of parkland and urban forest to sequester carbon, and identify areas of improvement through landscape change (in partnership with natural areas management), and other practices
- 20.2. Explore use of biochar under athletic fields and in soil modification projects

E. LAND: MAINTAIN AND IMPROVE SOIL HEALTH

- 21. Conduct soil contaminant testing in parks where urban agriculture areas have been designated in park master plans
- 22. Utilize park development as a means of improving soil health, with mitigation partners such as Hennepin County
- 23. Address soil compaction during park construction and after events
- 23.1. Conduct soil compaction tests at the inception of major projects, and develop de-compaction strategies and extents
- 23.2. Explore use of biochar in park projects, especially athletic fields, as a means of de-compacting soils

- 23.3. Re-assess event fee structure to explore funding for decompaction of impacted parks
- 24. Minimize erosion impacts from maintenance, construction, and use
- 24.1. Evaluate Minnesota Erosion Control Society best management practices for inclusion in standard construction project specifications
- 24.2. Evaluate current erosion control construction specifications to address and avoid wildlife conflicts and concerns, and develop and implement wildlifefriendly standards
- 24.3. Complete slope analysis for mowing to determine best fit equipment and modify mowing plans to assign specific equipment use to different slope types
- 24.4. Identify erosion problem areas throughout the system and develop plans for minimizing and correcting areas that are prone to erosion

F. LAND: IMPROVE ENVIRONMENTAL PERFORMANCE OF TURF MANAGEMENT PRACTICES

- 25. Address environmental concerns around highly managed turf
- 25.1. Pursue staff training and certification, specifically the Turf Management Certificate for Water
- 25.2. Continue expansion of programmable, higher efficiency irrigation controls, especially at golf courses and premier sports fields
- 25.3. Identify opportunities to incorporate USGA Golf Course greening practices

- 26. Initiate mandatory pre-season mower and trimmer training to address slope, equipment suitability, compaction, grass clipping redirection, and tree protection
- 27. Develop standard procedures and protocols for vehicles driving on turf, in order to limit compaction and damage

G. LAND: REDUCE NEGATIVE CONSTRUCTION-RELATED IMPACTS

- 28. Review and modify construction specifications and practices to increase environmental protections
- 28.1. Conduct mandatory pre-construction conferences to address environmentally friendly construction requirements, including materials selection and recycling
- 28.2. Install and maintain wildlife friendly erosion control devices during construction
- 28.3. Save and re-use site topsoil
- 28.4. Require weather protection of stored materials
- 28.5. Require that construction permits issued to other agencies include environmentally friendly construction specifications similar to those used on MPRB projects

- 29. Consider construction scheduling and project timing in the context of nesting, migration, and pollinator emergence
- 30. Incorporate more sustainable and green building technology and materials into design guidelines
- 31. Protect trees during park development

H. LAND: REDUCE HUMAN-CREATED NEGATIVE IMPACTS IN THE PARKS

- 32. Reduce waste generated by and in parks
- 32.1. Develop public awareness campaign and staff training about proper waste disposal
- 32.2. Track diversion rates in park waste and set system-wide diversion goals, including for MPRB-organized events
- 32.3. Adopt waste policies consistent with City of Minneapolis Green to Go Ordinance and Zero Waster Plan
- 32.4. Work with partners, vendors, and event organizers to ensure food and drink containers in parks are recyclable or compostable

- 32.5. Implement "deconstruction" rather than demolition during park projects to extract high value materials, require contractors to recycle materials as possible, and track construction waste diversion
- 33. Reduce light pollution generated by park activities
- 33.1. Implement dark sky certified lighting
- 33.2. Identify areas where existing lighting can be modified or eliminated to limit light spill-over, especially into natural areas.
- 33.3. Provide staff training on dark skies and lighting impacts
- 33.4. Assess street and parkway lights for impact on parks and natural areas, then work with partners to redirect, shield, or remove fixtures

I. LIFE: PROTECT AND ENHANCE HABITAT QUALITY IN PARKS

34. Identify potential habitat areas in most parks as part of master planning efforts

35. Develop and update baseline data on wildlife in the parks, including birds, mammals, amphibians, reptiles, insects, fish, and invertebrates, using citizen science, Bio Blitzes, and other techniques

- 36. Transition from turf-focused parks management to a mixture of turf and naturalized areas, ultimately reducing total acreage of turf
- 36.1. Develop maintenance guidelines for natural areas
- 36.2. Develop staffing plans that will allow for an expansion of naturalized areas in the parks, including possibility of additional ecologist positions, park-keeper/ gardener-type positions devoted to naturalized areas, and analysis of cost and staffing impact on organization
- 36.3. Continue to work with local partners to restore and manage natural areas, guided by park master plans and approved agreements
- 36.4. Expand use of fescue and drought tolerant grasses, including native plants
- 36.5. Complete analysis of sites most suited to pollinator-friendly lawns, map their acreage over time, and monitor success
- 36.6. Reassess equipment suitability and mowing heights to protect bird, bee, and butterfly habitat.
- 36.7. Prepare prescriptive mowing plans that address height, frequency, timing, and landscape slope in order to protect habitat
- 37. Enhance management of natural and naturalized areas in parks
- 37.1. Complete Natural Areas Management Plan

- 37.2. Increase technology capability in the field to include definitions, maps, methods, and standards of maintenance
- 37.3. Map both formal and ad-hoc natural surface trails in the park system and identify those in need of improvement or closure to protect natural resources
- 37.4. Increase interdepartmental coordination on plantings, mowing, sight lines, and general landscape management planning
- 37.5. Identify areas where standing or fallen dead wood can be left to enhance habitat
- 38. Develop an invasive species management strategy, in keeping with IPM principles, working with state, local, and academic partners advisory groups
- 39. Limit use of pesticides and fertilizers
- 39.1. Continue to reduce pesticide and fertilizer applications, based on recommendations from partners and advisory groups
- 39.2. Develop and maintain Pest Management Plan for facilities, consistent with IPM program

J. LIFE: INCREASE HABITAT CONNECTIVITY THROUGHOUT THE CITY

- 40. Implement identified habitat corridors (see map)
- 40.1. Prioritize planting of bird and pollinator-friendly vegetation, including street trees, within identified corridors
- 40.2. Work with public, private, and nonprofit partners within identified corridors to implement habitat restoration and enhancement projects, including blooming boulevards, green alleys, habitat enhancement on public lands, etc.
- 40.3. Research, track, and report on plant life that will offer best pollinator habitat throughout the growing season, working with state, local, and academic partners

- 41. Implement wildlife protection strategies for major construction projects and at significant roadway crossings of corridors
- 41.1. Identify sites with largest number of animal-roadway conflicts, working with partner agencies, as necessary
- 41.2. Develop wildlife-friendly construction and maintenance standards, policies, and procedures (including ramps, turtle tunnels, curb cuts, signed crossings, temporary fences, seasonal signage, wildlife-friendly erosion control netting, etc.)
- 42. Increase public education about wildlife interaction
- 42.1. Add interpretive and educational signage in parks
- 42.2. Continue to develop and disseminate educational resources in the form of print, map, video, or other media

K. LIFE: PROTECT, MAINTAIN, AND EXPAND URBAN FOREST

- 43. Maintain and expand extents of the forest canopy
- 43.1. Set specific and realistic goals for urban forest canopy coverage, with input from the Minneapolis Tree Advisory Commission, and share publicly
- 43.2. Improve integration of forestry with capital projects in parks, to ensure tree removal is minimized and to capitalize on opportunities to increase urban canopy through post-project planting
- 43.3. Identify areas where soil compaction around trees is an issue due to general use or events, and develop remedies
- 43.4. Expand pruning of young trees to ensure proper shaping and health as they mature

- 43.5. Continue pest monitoring and management programs in partnership with federal, state, and local agencies
- 44. Increase urban forest diversity to make it more resilient to climate change and invasive pests
- 44.1. Continue to partner with University of Minnesota to research and pilot new tree species in Minneapolis
- 44.2. Increase number of tree species and reduce overall percentage of single species as replanting takes place
- 44.3. Educate the public on what trees to plant based on future climate forecasts

L. LIFE: PROTECT AND ENHANCE AQUATIC HABITAT

- 45. Protect lakes, wetlands, and waterways from aquatic invasive species
- 45.1. Prepare an Aquatic Invasive Species Management Plan based on the Zebra Mussel Action Plan and Nokomis Carp Management Study
- 45.2. Continue AIS prevention and early detection programs
- 45.3. Update IPM to address aquatic and wetland plants
- 46. Develop an Aquatic Plant Management Plan that addresses fish habitat

- 46.1. Perform more frequent lake surveys
- 46.2. Evaluate efficacy and need of aeration systems at the end of each system's useful life
- 47. Work with local, regional, and state partners to monitor and address issues with waterfowl and mosquitoes
- 47.1. Plan and design structural BMPs so they are not breeding areas for mosquitoes, per MMCD recommendations.
- 47.2. Partner with MMCD on a public information campaign about biological mosquito control

M. REMAIN ACCOUNTABLE AND ADAPT WITH THE EVOLVING WORLD

- 48. Create interactive map layers in GIS based on the maps included in this document and make them publicly available on the MPRB website
- 49. Update this plan's implementation checklist and report at least annually to the MPRB Commissioners and general public

- 50. Communicate and coordinate plan implementation responsibilities of all departments and divisions
- 51. Update and modify this plan to account for evolving and emerging technologies every 5 years

Departmental Responsibilities

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
А	WATER: PREVENT DEGRADATION OF WATER QUALITY							
1.	Improve management of park-generated stormwater runoff	~		~	~	~		
1.1	Increase amount of stormwater infiltration, filtration, and storage, and increase disconnected hard surfaces in parks			~	~	~		
1.2	Improve Stormwater Pollution Prevention Plans (SWPPPs) to include more comprehensive record keeping, exploration of stormwater capture and control, and surface pollutant reduction, and expand SWPPPs to all park properties, with appropriate staff training				~	~		
1.3	Assess the feasibility of green roofs and grey water infrastructure during all new building projects and significant retrofits			~				
1.4	Reduce impervious surface area in parks			~	~	~		
1.5	Protect and expand wetland and marsh areas that filter stormwater runoff			~		~		
1.6	Develop a Clean Sweep Plan, which explores additional street and path sweeping technology, timing and schedule, chloride management strategies, and potential of new equipment				~			
1.7	Improve winter maintenance plans to consider salt use in parks, including examining which surfaces are treated, removal of excess salt around buildings, and guidance on labor practices and equipment				~			
1.8	Set maintenance and recreation staff training goals to achieve MPCA Level II Smart Salting Certification				~			~
1.9	Expand public education regarding salt impacts on water bodies	~			~	~		
1.10	Prioritize replacement of asphalt pavement in areas where pavement is actively eroding and drains directly into the storm sewer system			~	~			
2.	Contribute to management of regional stormwater in the interest of regional water quality			~	~	~		
2.1	Implement regional stormwater facilities in parks, in partnership with City of Minneapolis and watershed districts, only where envisioned in park master plans.			~	~	~		
2.2	Define roles and responsibilities for MPRB, City of Minneapolis, and watershed districts for management of stormwater facilities in parks, and develop corresponding maintenance practices, budget, and repair schedule					~		

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2.3	Create a stormwater BMP inspection, maintenance, and repair plan for MPRB staff, including a catalog of BMPs installed in parks			~		~		
2.4	Create a fund for BMP maintenance and repair					~		
3	Reduce the amount of trash and sediment in water bodies	~		~	~	~		
3.1	Complete a trash impact study that identifies estimated volumes, sources, and solutions				~	~		
3.2	Further promote the City's adopt-a-catch-basin program	~				~		
3.3	Install additional maintenance control devices, such as SAFL Baffle and SAFL Snout, at key stormwater outfalls, in coordination with partners				~	~		
3.4	Expand public education regarding proper waste reduction and impacts on water bodies	~				~		
3.5	Work with City of Minneapolis and other agencies to remove sediment fans in water bodies					~		
3.6	Stabilize eroding streambanks and shorelines	~						
3.7	Create a fund to repair erosion in parks	~						
4	Reduce water quality impacts from pets and geese	~	~	~	~	~		~
4.1	Develop a Bacteria Mitigation Strategy, which addresses beach clean-up of goose feces				~			~
4.2	Continue and expand public education about no feeding of waterfowl	~				~		~
4.3	Continue and expand public education about dog waste collection and environmental impacts from dog waste	~	~			~		~
4.4	Examine locations of trash cans relative to pathways and relocate or remove cans where necessary				~			
4.5	Ensure interdepartmental coordination on dog park siting, design, maintenance, and signing, to ensure impacts to water bodies are minimized			~	~	~		
4.6	Develop a standard BMP for bacteria reduction at dog parks			~				
5.	Reduce impacts of point source pollution and pollutant spills on water bodies	~			~	~		
5.1	Expand spill kit distribution in MPRB vehicles				~			
5.2	Expand spill response material storage to at least one location per service area				~			
5.3	Conduct internal and external education regarding spill prevention and response	~			~			
5.4	Work with City of Minneapolis and other agency and research partners to identify and address point source pollution impacting parks and water bodies					~		
6.	Understand and respond to water quality realities					~		

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
6.1	Continue water quality monitoring based on water clarity, chlorophyll-a, and phosphorous, and add other testing regimes as warranted					~		
6.2	Conduct water quality goal-setting sessions with internal staff and external partners					~		
6.3	Prepare lake management strategies for each MPRB-managed water body					~		
6.4	Continue partnerships with local and state agencies to remain aware of and address emerging contaminants					~		
В	WATER: BUILD RESILIENCY IN THE FACE OF CHANGING WATER LEVELS							
7.	Design, plan, and manage park facilities in light of changing water levels			~	~	~	~	
7.1	Utilize projected future floodplain analysis and risks during planning efforts			~				
7.2	Identify outfalls, walls, bridge abutments, trails, and other flood-threatened infrastructure during master planning efforts, and develop proposed solutions in light of flooding and rainfall projections			~				
7.3	Create planting plans with understanding of projected water regime					~	~	
7.4	Design lakeshores and streambanks to withstand or accommodate projected future flooding and withstand a higher level of erosive energy, using bioengineering and native plants wherever possible			~				
7.5	Identify and map flood-prone recreational infrastructure, especially trails, and develop detour plans that can be implemented quickly and with clear public notification			~	~			
8.	Continue and strengthen partnerships to address management of citywide stormwater infrastructure	~		~		~		
8.1	Partner with City of Minneapolis and watershed districts in the creation of park master plans, and participate in partner agency efforts, such as flood studies			~				
8.2	Improve communication with partners and to public about water management, park impacts, and other effects of increased precipitation	~		~		~		
9.	Continue to work with partners to understand, evaluate, and help to address, as appropriate, elevated groundwater levels			~		~		
С	AIR: CONTRIBUTE TO IMPROVING LOCAL AIR QUALITY AND REDUCING URBAN HEAT ISLAND							
10.	Partner in regional heat island and air quality monitoring and studies					~	~	
11.	Focus tree planting in areas identified as having high heat island or low air quality						~	
12.	Reduce vehicle and equipment emissions			~	✓			

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12.1	Examine fleet-wide emissions and estimate emissions generated by park employees, then set reduction goals				~			
12.2	Document and communicate options for hybrid and electric vehicles for all vehicle purchases				~			
12.3	Develop small equipment inventory that includes emissions information, then work to transition small equipment fleet to alternative options, such as electric or four-stroke				~			
12.4	Adopt Green Fleet procedures similar to City of Minneapolis fleet procedures, including flex fuel protocols and idling standards				~			
12.5	Complete service centers master plan with consideration of siting to achieve more efficient travel management			~	~			
12.6	Develop transportation management plan and procedures for field staff that considers and optimizes travel time to and between parks and service centers, in order to reduce overall vehicle miles and emissions				~			
13.	Use low-VOC or no-VOC materials (paints, glues, cleaning supplies, Etc.) in buildings and in maintenance activities wherever possible			~	~			
14.	Ensure maintenance of landscapes with fire does not coincide with air quality alert days					~		
15.	Monitor air quality at wood processing facility						~	
D	AIR: CONTRIBUTE TO CLIMATE CHANGE MITIGATION							
16.	Reduce the agency-wide carbon footprint				~			
16.1	Complete a carbon footprint analysis, including identification of areas of improvement and reduction strategies				~			
16.2	Establish carbon footprint reduction targets and tasks and report at least annually on progress				~			
16.3	Explore alternative energy purchasing programs, to increase percentage of MPRB energy that is generated sustainably				~			
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17.2	Improve information technology to allow for more effective remote meetings		~					
17.3	Work with MetroTransit to evaluate and improve transit access to parks			~				
17.4	Improve park access points for multi-modal users, including ensuring curb ramps are properly placed and designed			~				
18.	Increase building efficiency			~	~			

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19.	Explore alternative energy generation opportunities in parks			~	~			
19.1	Explore geothermal and solar generation in areas determined suitable for those energy sources, when improving or constructing buildings or other site improvements			~	~			
19.2	Seek grants for additional solar and/or geothermal installations			~	~			
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24.4	Identify erosion problem areas throughout the system and develop plans for minimizing and correcting areas that are prone to erosion				~	~		
F	LAND: IMPROVE ENVIRONMENTAL PERFORMANCE OF TURF MANAGEMENT PRACTICES							
25.	Address environmental concerns around highly managed turf	~						~
25.1	Pursue staff training and certification, specifically the Turf Management Certificate for Water				~			
25.2	Continue expansion of programmable, higher efficiency irrigation controls, especially at golf courses and premier sports fields				~			~
25.3	Identify opportunities to incorporate USGA Golf Course greening practices							~
26.	Initiate mandatory pre-season mower and trimmer training to address slope, equipment suitability, compaction, grass clipping redirection, and tree protection				~			
27.	Develop standard procedures and protocols for vehicles driving on turf, in order to limit compaction and damage	~			~			
G	LAND: REDUCE NEGATIVE CONSTRUCTION-RELATED IMPACTS							
28.	Review and modify construction specifications and practices to increase environmental protections			~				
28.1	Conduct mandatory pre-construction conferences to address environmentally friendly construction requirements, including materials selection and recycling			~				
28.2	Install and maintain wildlife friendly erosion control devices during construction			~				
28.3	Save and re-use site topsoil			~				
28.4	Require weather protection of stored materials			~				
28.5	Require that construction permits issued to other agencies include environmentally friendly construction specifications similar to those used on MPRB projects			~				
29.	Consider construction scheduling and project timing in the context of nesting, migration, and pollinator emergence			~		~		
30.	Incorporate more sustainable and green building technology and materials into design guidelines			~				
31.	Protect trees during park development			~			~	

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
Н	LAND: REDUCE HUMAN-CREATED NEGATIVE IMPACTS IN THE PARKS							
32.	Reduce waste generated by and in parks	~	~	~	~			
32.1	Develop public awareness campaign and staff training about proper waste disposal				~			
32.2	Track diversion rates in park waste and set system-wide diversion goals, including for MPRB-organized events				~			
32.3	Adopt waste policies consistent with City of Minneapolis Green to Go Ordinance and Zero Waster Plan	~	~		~			
32.4	Work with partners, vendors, and event organizers to ensure food and drink containers in parks are recyclable or compostable		~					
32.5	Implement "deconstruction" rather than demolition during park projects to extract high value materials, require contractors to recycle materials as possible, and track construction waste diversion			~				
33.	Reduce light pollution generated by park activities			~	~			
33.1	Implement dark sky certified lighting			~	~			
33.2	Identify areas where existing lighting can be modified or eliminated to limit light spill-over, especially into natural areas.			~				
33.3	Provide staff training on dark skies and lighting impacts			~	~			
33.4	Assess street and parkway lights for impact on parks and natural areas, then work with partners to redirect, shield, or remove fixtures			~				
1	LIFE: PROTECT AND ENHANCE HABITAT QUALITY IN PARKS							
34.	Identify potential habitat areas in most parks as part of master planning efforts			~				
35.	Develop and update baseline data on wildlife in the parks, including birds, mammals, amphibians, reptiles, insects, fish, and invertebrates, using citizen science, Bio Blitzes, and other techniques					~		
36.	Transition from turf-focused parks management to a mixture of turf and naturalized areas, ultimately reducing total acreage of turf			~	~	~		
36.1	Develop maintenance guidelines for natural areas					~		
36.2	Develop staffing plans that will allow for an expansion of naturalized areas in the parks, including possibility of additional ecologist positions, park-keeper/gardener-type positions devoted to naturalized areas, and analysis of cost and staffing impact on organization				~	~		

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
36.3	Continue to work with local partners to restore and manage natural areas, guided by park master plans and approved agreements					~		
36.4	Expand use of fescue and drought tolerant grasses, including native plants			~		~		
36.5	Complete analysis of sites most suited to pollinator-friendly lawns, map their acreage over time, and monitor success			~				
36.6	Reassess equipment suitability and mowing heights to protect bird, bee, and butterfly habitat.				~	~		
36.7	Prepare prescriptive mowing plans that address height, frequency, timing, and landscape slope in order to protect habitat				~	~		
37.	Enhance management of natural and naturalized areas in parks			~	~	~	~	
37.1	Complete Natural Areas Management Plan					~		
37.2	Increase technology capability in the field to include definitions, maps, methods, and standards of maintenance					~		
37.3	Map both formal and ad-hoc natural surface trails in the park system and identify those in need of improvement or closure to protect natural resources			~		~		
37.4	Increase interdepartmental coordination on plantings, mowing, sight lines, and general landscape management planning			~	~	~	~	
37.5	Identify areas where standing or fallen dead wood can be left to enhance habitat					~	~	
38.	Develop an invasive species management strategy, in keeping with IPM principles, working with state, local, and academic partners advisory groups					~		
39.	Limit use of pesticides and fertilizers				~	~		
39.1	Continue to reduce pesticide and fertilizer applications, based on recommendations from partners and advisory groups				~			
39.2	Develop and maintain Pest Management Plan for facilities, consistent with IPM program				~			
J	LIFE: INCREASE HABITAT CONNECTIVITY THROUGHOUT THE CITY							
40.	Implement identified habitat corridors (see map)			~		~	~	
40.1	Prioritize planting of bird and pollinator-friendly vegetation, including street trees, within identified corridors					~	~	
40.2	Work with public, private, and nonprofit partners within identified corridors to implement habitat restoration and enhancement projects, including blooming boulevards, green alleys, habitat enhancement on public lands, etc.			~		~		
40.3	Research, track, and report on plant life that will offer best pollinator habitat throughout the growing season, working with state, local, and academic partners					~	~	

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
41.	Implement wildlife protection strategies for major construction projects and at significant roadway crossings of corridors			~			~	
41.1	Identify sites with largest number of animal-roadway conflicts, working with partner agencies, as necessary						~	
41.2	Develop wildlife-friendly construction and maintenance standards, policies, and procedures (including ramps, turtle tunnels, curb cuts, signed crossings, temporary fences, seasonal signage, wildlife-friendly erosion control netting, etc.)			~				
42.	Increase public education about wildlife interaction	~		~		~		
42.1	Add interpretive and educational signage in parks			~		~		
42.2	Continue to develop and disseminate educational resources in the form of print, map, video, or other media	~				~		
K	LIFE: PROTECT, MAINTAIN, AND EXPAND URBAN FOREST							
43.	Maintain and expand extents of the forest canopy		~	~			~	
43.1	Set specific and realistic goals for urban forest canopy coverage, with input from the Minneapolis Tree Advisory Commission, and share publicly						~	
43.2	Improve integration of forestry with capital projects in parks, to ensure tree removal is minimized and to capitalize on opportunities to increase urban canopy through post-project planting			~			~	
43.3	Identify areas where soil compaction around trees is an issue due to general use or events, and develop remedies		~				~	
43.4	Expand pruning of young trees to ensure proper shaping and health as they mature						~	
43.5	Continue pest monitoring and management programs in partnership with federal, state, and local agencies						~	
44.	Increase urban forest diversity to make it more resilient to climate change and invasive pests						~	
44.1	Continue to partner with University of Minnesota to research and pilot new tree species in Minneapolis						~	
44.2	Increase number of tree species and reduce overall percentage of single species as replanting takes place						~	
44.3	Educate the public on what trees to plant based on future climate forecasts	~					~	

	Goals, Strategies and Recommendations	Superintendent's Office (Communications and Public Safety)	Deputy Superintendent's Office (Permits and Customer Service)	Planning Division	Asset Management Department	Environmental Management Department	Forestry Department	Recreation Division
L	LIFE: PROTECT AND ENHANCE AQUATIC HABITAT							
45.	Protect lakes, wetlands, and waterways from aquatic invasive species				~	~		
45.1	Prepare an Aquatic Invasive Species Management Plan based on the Zebra Mussel Action Plan and Nokomis Carp Management Study					~		
45.2	Continue AIS prevention and early detection programs					~		
45.3	Update IPM to address aquatic and wetland plants				~	~		
46.	Develop an Aquatic Plant Management Plan that addresses fish habitat				~	~		
46.1	Perform more frequent lake surveys					~		
46.2	Evaluate efficacy and need of aeration systems at the end of each system's useful life				~	~		
47.	Work with local, regional, and state partners to monitor and address issues with waterfowl and mosquitoes	~		~		~		
47.1	Plan and design structural BMPs so they are not breeding areas for mosquitoes, per MMCD recommendations.			~		~		
47.2	Partner with MMCD on a public information campaign about biological mosquito control	~				~		
M	REMAIN ACCOUNTABLE AND ADAPT WITH THE EVOLVING WORLD							
48.	Create interactive map layers in GIS based on the maps included in this document and make them publicly available on the MPRB website			~				
49.	Update this plan's implementation checklist and report at least annually to the MPRB Commissioners and general public			~				
50.	Communicate and coordinate plan implementation responsibilities of all departments and divisions			~				
51.	Update and modify this plan to account for evolving and emerging technologies every 5 years			~				

Place-Based Concerns—Regional Parks

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.

REGIONAL PARK NAME	URBAN HEAT ISLAND EFFECT	CARBON SEQUESTRATION	SUSTAINABLE ENERGY GENERATION	AIR QUALITY ISSUES	HABITAT CONNECTIVITY (Based on suitability for expanded pollinator habitat)	BIODIVERSITY AND HABITAT QUALITY	STORMWATER RUNOFF
Above the Falls Regional Park	~	~		~	~	~	~
Cedar Lake Regional Trail		✓			✓	✓	
Central Mississippi Riverfront Regional Park	~	~	~		~	~	~
Columbia Parkway Regional Trail					✓		~
Kenilworth Regional Trail				~	~		
Luce Line Regional Trail				~			
Minneapolis Chain of Lakes Regional Park		~	~	~	~	~	~
Minnehaha Parkway Regional Trail		✓	✓	~	✓	✓	~
Minnehaha Regional Park					~	~	~
Mississippi Gorge Regional Park		✓	~	✓	✓	✓	~
Nokomis - Hiawatha Regional Park		~	~		~	~	~
North Mississippi Regional Park		✓	~	✓	✓	✓	~
Northeast Diagonal Regional Trail	~			~			
Ridgway Parkway Regional Trail	~	✓	✓		✓	✓	
Shingle Creek Regional Trail		~	~		~	~	~
St Anthony Parkway Regional Trail	~			✓	✓		
Stinson Parkway Regional Park	~						
Theodore Wirth Regional Trail	~	✓	~	~	✓	~	~
Victory/Wirth Memorial Parkway Regional Trail	~	✓	~		✓	~	~

Place-Based Concerns—Neighborhood Parks

		SEQUESTRATION	ENERGY GENERATION	ISSUES	(Based on suitability for expanded pollinator habitat)	AND HABITAT QUALITY	RUNOFF
28th Street Tot Lot							
Adams Triangle		✓				✓	
Alcott Triangle					~		
Architect Triangle		~	~		~		
Armatage Park, Maude D.		~	~	~	~	~	
Audubon Park		~	~	~	✓		
Barnes Place Triangle	~	~	~			~	
Barton Triangle				~	~		
Bassett's Creek Park		~	~	~	~	~	~
Beltrami Park	~			~			
Bethune Park, Mary McCleod	~	~	~				
Bohanon Park , John C.						~	~
Bossen Field Park	~	~	~	~		~	
Bottineau Field Park	✓						
Brackett Field Park, George A	~		~	~	~	~	
Bryant Square Park	✓		~	~	~		
Bryn Mawr Meadows Park		~	~	~	~	~	~
Caleb Dorr Circle				✓			
Cavell Park		~	~		~		
Cedar Avenue Field Park	✓			✓		~	
Central Gym Park	~		~			~	

NEIGHBORHOOD PARK NAME	URBAN HEAT ISLAND EFFECT	CARBON SEQUESTRATION	SUSTAINABLE ENERGY GENERATION	AIR QUALITY ISSUES	HABITAT CONNECTIVITY (Based on suitability for expanded pollinator habitat)	BIODIVERSITY AND HABITAT QUALITY	STORMWATER RUNOFF
Chergosky Park	✓				~		
Chowen Triangle					~		
Chute Square, Richard	✓			~			
Clarence Triangle				~	~		
Cleveland Park		~	~				
Clinton Field Park	✓						
Columbia Park		~	~	~	✓	✓	~
Corcoran Park	~		~	~			
Cottage Park			~	~		✓	
Currie Park	✓		~				
Dell Park		~			~	✓	
Deming Heights Park, Portius C		~			~	✓	
Diamond Lake Park					~	✓	~
Dickman Park	✓						
East Phillips Park	✓	~	~	~		✓	
Elliot Park	~	~	~			✓	
Elmwood Triangle							
Farview Park	✓		~			~	
Farwell Park						✓	
Folwell Park		~	~	~		~	
Fort Snelling		✓		~		✓	
Franklin Steele Square	~		~	~			
Fremont Triangle							
Fuller Park			~		~	~	
Gateway Park, The	✓						

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Gladstone Triangle							
Glen Gale Park				~		✓	
Gross Golf Course, Francis A (St. Anthony Golf Course)		~	~		~	~	
Hall Park	~						
Harrison Park	~	~	~			~	
Hiawatha School Park		~	~		✓		
Hi-View Park	~			~			
Holmes Park	~			~			
Humboldt Greenway					~		
Humboldt Triangle	~	~	~				
Irving Triangle				~		~	
Jackson Square Park	~			~			
Jordan Park		~	~		~		
Keewaydin Park			~			✓	
Kenny Park	~		~		~		
Kenwood Park		~	~		~	✓	
Kenwood Parkway					~		~
King's Highway Parkway					✓		✓
Laurel Triangle						~	
Levin Triangle, Joanne							
Linden Hills Blvd Parkway					~		~
Linden Hills Park		~	~		✓		
Logan Park	~			~			
Longfellow Park		✓	~	✓	✓		
Loring Park		~	~	~	~	~	✓
Lovell Square	✓	✓	~			✓	

NEIGHBORHOOD PARK NAME	URBAN HEAT ISLAND EFFECT	CARBON SEQUESTRATION	SUSTAINABLE ENERGY GENERATION	AIR QUALITY ISSUES	HABITAT CONNECTIVITY (Based on suitability for expanded pollinator habitat)	BIODIVERSITY AND HABITAT QUALITY	STORMWATER RUNOFF
Luxton Park, George E	~		~	~	~		
Lyndale Farmstead Park			~	~	~	~	
Lyndale School Pool							
Lynnhurst Park		~	~		~	~	~
Marcy Park	~			~			
Matthews Park, Charles E	~		~				
McRae Park	~	~	~				
Mill Place Woonerf							
Monroe Place Park	~						
Morris Park			~		~		
Morrison Park, Dorilus (Minneapolis Institute of Art)	~		~	~			
Mueller Park	✓		~	~		~	
Murphy Square	~						
Newton Triangle				~			
Normanna Triangle				~		~	
North Commons Park		~	~	~		✓	
Northeast Athletic Field Park	~			~			
Northeast Ice Arena							
NW Bell Property/Elwell Park	~						
Oak Crest Triangle							
Oliver Triangle							
Orlin Triangle				~	~		
Painter Park, Jonathan E.	~		~	~	~		
Parade Park, The	✓	~	~		~	~	✓
Park Avenue Triangle	~						
Park Siding Park		~	~		~		

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Pearl Park		~	~		~		~
Peavey Field Park, Frank H	~		~	~		✓	
Penn Model Village Triangle							
Perkins Hill Park	✓			✓			
Pershing Field Park		~	~		~		~
Phelps Field Park, Edmund J	✓	✓	~		~		
Phillips Community Center	~			~			
Powderhorn Park	✓	✓	~	✓	~	✓	~
Reserve Block 40 Park							
Rev. Dr. Martin Luther King, Jr. Park	✓	✓	~		✓	✓	
Russell Triangle						~	
Rustic Lodge Triangle					✓		
Ryan Lake Park					~	~	~
Seven Oaks Oval Park					~	✓	
Shoreview & 54 1/2 Triangle							
Shoreview & 54th Triangle							
Shoreview & 55th Triangle							
Sibley Park	~	~	~	~			
Sibley Triangle	~						
Smith Triangle	~						
Solomon, Edward C. Park	~	~	~		~	~	~
St Anthony Park	~						
St Louis Triangle					~		
Stevens Square	~			~		✓	
Stewart Park	~		~	~			
Sumner Field Park	~	✓	~		~		~

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The Mall Park				~		~	
Thomas Lowry Park							
Todd Park, George	~	~	~			~	~
Tower Hill Park	~			~	~	✓	
Valley View Park		~	~		~	~	
Van Cleve Park	~	✓	~	~		✓	
Victory Park					~		
Victory Prairie						✓	
Vineland Triangle							
Waite Park		~	~	~			
Washburn Avenue Totlot						~	~
Washburn Fair Oaks Park	✓	✓		~		✓	
Washington Triangle	~						
Waveland Triangle		✓	✓		~	✓	
Webber Park, Charles C	~	~	~	~	~	~	~
West End Triangle					~		
Whittier Park	~		~				
Willard Park		✓	~			✓	
Windom NE Park				~	~		
Windom South Park	~						
Xcel Field Park/ Northern States Power Park	~		~				